### Course Descriptions

Courses are numbered as follows:
- 001 through 099 – Orientation and developmental courses
- 100 through 199 – Undergraduate credit
- 200 through 299 – Undergraduate credit; sophomore classification may be required.
- Modular courses have four number or alpha characters with the first three numbers representing the parent course, e.g., BAS 1601 is the first module of BAS 160. The last character denotes the sequence of the module with either a numerical or alpha character. Course descriptions are published for recently approved courses, and those that have been offered in the preceding two-year period. Other active courses may be offered that are not published in the printed catalog.

#### A&S Arts & Sciences

**A&S 100(1 - 6) Course ID: 002195**

**Special Introductory Course**
This course permits the offering at the introductory level of special courses of an interdisciplinary, topical, or experimental nature. Each proposal must be approved by the Dean of the College of Arts and Sciences. A particular title may be offered at most twice under the A&S 100 number. Students may not repeat under the same title. May be repeated to a maximum of 12 credits. Pre-requisite: Will be set by instructor.

**Components:** Lecture

**Attributes:** Other

#### AAD Arts Administration

**AAD 200(3) Course ID: 004620**

**Fundamentals of Arts Administration**
Arts administration, planning, evaluation, funding and finance in arts organizations are emphasized. Students are engaged in arts management projects related to career goals. Lecture: 3 credits (45 contact hours). Pre-requisite: AAD 100, ENG 102.

**Components:** Lecture

**Attributes:** Technical

### ACC Accounting

**ACC 201(3) Course ID: 000927**

**Financial Accounting**
Presents generally accepted accounting principles used for the measurement and reporting of financial information in the financial statements. Pre-requisite: Sophomore standing (30 credit hours) or consent of the instructor. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Course Also Offered in Modules, Technical

**ACC 202(3) Course ID: 000001**

**Managerial Accounting**
An introduction to the use of accounting data within an organization to analyze and solve problems and to make planning and control decisions. Pre-requisite: ACC 201 or ACT 101 and ACT 102. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Course Also Offered in Modules, Technical

**ACC 2011(1) Course ID: 005946**

**Financial Accounting – Accounting as an Information System**
Presents the accounting cycle and preparation of financial statements. Pre-requisite: Sophomore Standing (30 credit hours) or Consent of Instructor. Lecture: 1 credit (15 contact hours).

**Components:** Lecture

**ACC 2012(1) Course ID: 005947**

**Financial Accounting – Accounting for Merchandising Businesses**
Presents accounting for merchandising businesses including inventories, receivables and internal control. Pre-requisite: Sophomore Standing (30 credit hours) or Consent of Instructor and ACC 2011 or equivalent. Lecture: 1 credit (15 contact hours).

**Components:** Lecture

**ACC 2013(1) Course ID: 005948**

**Financial Accounting – Long Term Assets and Long Term Financing Activities**
Presents measuring and reporting of long term assets and long term financing activities. Pre-requisite: Sophomore Standing (30 credit hours) or Consent of Instructor ACC 2011 and ACC 2012 or equivalent. Lecture: 1 credit (15 contact hours).

**Components:** Lecture

### ACH Architectural Technology

**ACH 110(1) Course ID: 004680**

**Survey of the Architectural Profession**
In this course, the student will gain an understanding of the language of architecture and develop an appreciation for building design strategies through direct analysis. In addition, various career opportunities in architecture and related professions will be explored. Lecture: 1 credit (15 contact hours).

**Components:** Lecture

**Attributes:** Technical

---

**Course Title**

**Course Description**

Summarizes course content. May include information on course components, prerequisites/co-requisites, and other course stipulations.

**Course Credit**

Variable:Shown as (1-3).

**Unique course identification**

**Course ID:** 000467

**Components:** Lecture

**Attributes:** WC - Written Communication

**Campus:** BLC

**Course may be offered only by identified campus.**

---

**Course prefix/number arranged alphabetically. The course number will appear as 101 ENG on transcripts, student schedules and web-based documents.**

**Course Credit**

Variable credit is shown as (1-3).

**Unique course identification**

**Course ID:** 000467

**Components:** Lecture

**Attributes:** WC - Written Communication

**Campus:** BLC

---

**Course ID:** 000467

**Components:** Course may have one component or several - lecture, laboratory, clinical, etc.
ACH 120(3) Course ID: 004681
Theory and History of Architecture I
The development of architecture as it is related to world culture with an emphasis on design, structure, materials, eco-social, and political factors are considered. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 150(3) Course ID: 004682
Construction Documents II
This is the second course of a four-semester studio sequence. Students develop architectural construction documents for multi-level framed construction. Students will further develop an understanding of programming, schematics, design development, and construction document production using current computer-aided technology. Emphasis will be placed on building codes and related discipline coordination. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Pre-requisite: ACH 100 or consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical

ACH 160(3) Course ID: 004683
Building Materials and Construction I
The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 2-7) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 161(3) Course ID: 004684
Building Materials and Construction II
The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 7-16) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 170(3) Course ID: 004685
Theory and History of Architecture II
A survey of the architectural periods from the neo-classic to the present is presented. This course is a continuation of ACH 120. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 175(3) Course ID: 004686
Introduction to Systems
An overview of the various systems found in buildings and the influences that shape architectural design and construction is presented. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 180(1 - 3) Course ID: 005463
Instructor Consent Required
Selected Topics in Architectural Technology (Topic)
The subject matter of this course may vary from semester to semester as new technology is developed and new issues evolve and/or to address local architectural issues. This course may be repeated with different topics to a maximum of six credit hours. Pre-requisite: Consent of instructor. Lecture: 1-3 credits (15-45 contact hours).
Components: Lecture
Attributes: Technical

ACH 194(3) Course ID: 004687
Visual Composition
In this course, the student will study the aesthetic principles found in both two-dimensional and three-dimensional compositions. These principles will be applied in exercises involving design, color, construction and creative writing. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

ACH 195(3) Course ID: 004856
Computer Aided Drafting I
Students learn how computer hardware and software are used in preparing architectural documents. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Computer Literacy, Technical

ACH 198(1 - 3) Course ID: 015986
Instructor Consent Required
Practicum in Architectural Technology
Provides supervised, on-the-job work experience related to the student's educational objectives; students participate in the practicum do not receive compensation. Pre-requisite: Completion of a minimum of 12 hours in Architectural Technology (ACH) courses with a minimum cumulative GPA of 2.0 in all courses. Practicum: 1.0-3.0 credits (45-120 contact hours).
Components: Practicum
Attributes: Technical

ACH 200(3) Course ID: 004688
Construction Documents III
This is the third course of a four-semester studio sequence. Students study the methods by which commercial buildings are designed and constructed. Basic skills are developed relating to the implementation of determinants in this process such as program analysis, applicable codes, construction methods and materials as well as computer applications. Through the completion of a series of structured projects including the preparation of a set of architectural construction documents for a medium-sized building, students apply the knowledge necessary to achieve these goals. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours). Pre-requisite: ACH 150 and ACH 185/ACH 195 or consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical

ACH 225(3) Course ID: 004689
Structures
Students study structural materials and systems including the design of simple structural components. Pre-requisite: ACH 175 and MAH 125, or consent of instructor.
Components: Lecture
Attributes: Technical

ACH 250(3) Course ID: 004690
Construction Documents IV
This is the fourth course of a four-semester studio sequence. Students prepare a set of advanced construction documents using current computer-aided drafting techniques. Emphasis will be placed on design principles and site development for a commercial construction project. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours). Pre-requisite: ACH 200 or consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical

ACH 260(3) Course ID: 004691
Office Practice
This course is intended to serve as a capstone course in the Architectural Technology program. Emphasis is placed on preparing students for the workplace by focusing on the professional, legal, and business aspects of the architectural and construction industries. Case studies are reviewed and projects are prepared by students with the goal of introducing them to a broader set of circumstances that affect how decisions are made in the practice of architecture. Lecture: 3 credits (45 contact hours). Pre-requisite: ACH 110 and ACH 200 or equivalent.
Components: Lecture
Attributes: Technical

ACH 275(3) Course ID: 004692
Mechanical and Electrical Systems
Students engage in a qualitative and quantitative study of environmental control systems used in buildings. Pre-requisite: ACH 175 and MAH 125, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 280(2) Course ID: 016138
Revit/Building Information Modeling
Introduces Building Information Modeling (BIM) using Autodesk Revit or other similar and related software, methods and processes. Provides students with skills to produce and present residential and commercial design models, construction documents, and to extract information and data from the model. Incorporates investigations into issues related to sustainable design and the integration of other software for related analysis. Pre-requisite: ACH 195, or consent of instructor. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 285(3) Course ID: 005464
Computer-Aided Drafting II
Students learn how to modify selected computer aided drafting software to enhance construction document production. Integration of other software will also be discussed. Pre-requisite: ACH 185 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 290(3) Course ID: 004694
Building Codes I
Students will analyze the content and format of current building codes. The necessity for building codes, problems in interpretation and application as well as legal aspects will be discussed. The main objective is to familiarize students with the basic provisions and procedures associated with building code administration. Pre-requisite: ACH 150 and ACH 160, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 291(3) Course ID: 004695
Construction Management
Students examine the principles and current practices of construction management with emphasis on project organization, scheduling and cost control. Pre-requisite: ACH 150, ACH 160 and ACH 161, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 292(3) Course ID: 004696
Building Codes II
This course will be continuation of ACH 290, Building Codes I, with a more in-depth study of current building codes. Pre-requisite: ACH 290 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACH 293(3) Course ID: 004697
Presentation Techniques
Students will explore a variety of presentation and rendering techniques used in the architectural profession. Design skills and the understanding of spatial relationships will be further developed. Pre-requisite: ACH 100 or consent of instructor. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

ACH 294(3) Course ID: 004698
Specification Writing
This course provides an in-depth study of the importance of specifications in the design and construction process. Students will engage in research, evaluate the quality of building materials, study the methods of writing specifications, and gain exposure to industry-standard software in preparing a variety of specifications. Pre-requisite: ACH 150, ACH 160, ACH 161, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 113(2) Course ID: 000954
Sheet Metal Fabrication Lab
Provides lab time for students to lay out, cut, construct, and install common sheet metal duct fittings. Co-requisite: ACR 112. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
ACR 130(3) Course ID: 000955
Electrical Components
 Defines the electrical components of an air conditioning system. Includes different types of line voltages, wiring diagrams and solid state devices. Emphasizes safety. Pre-requisite: ACR 102 with a grade of C or greater. Co-requisite: ACR 131. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 131(2) Course ID: 000956
Electrical Components Lab
Permits practice using different types of line voltages, reading wiring diagrams, and using solid state devices. Emphasizes safety. Pre-requisite: ACR 102 with a grade of C or greater. Co-requisite: ACR 130. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
ACR 170(3) Course ID: 000957
Heat Load/Duct Design
Introduces fundamentals needed to calculate heat gain and heat loss, thereby determining air conditioner/ furnace size which will be used to calculate the correct duct size. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 198(2) Course ID: 000958
Instructor Consent Required
Practicum
Practicum provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Practicum do not receive compensation. Pre-requisite: Permission of the Instructor.
Components: Practicum
Attributes: Technical
ACR 200(3) Course ID: 000960
Commercial Refrigeration
Develops techniques for servicing and troubleshooting mechanical and electro-mechanical refrigeration components. Emphasizes electrical and refrigeration safety. Covers proper tool use and environmentally sound refrigerant handling. Pre-requisite: ACR 100 and ACR 101 with a grade of C or greater. Co-requisite: ACR 201. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 201(2) Course ID: 000961
Commercial Refrigeration Lab
Provides techniques in servicing and troubleshooting mechanical and electro-mechanical refrigeration components. Emphasizes electrical and refrigeration safety. Covers proper tool use and environmentally sound refrigerant handling. Pre-requisite: (ACR 100 & ACR 101) with a grade of C or greater. Co-requisite: ACR 201. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
ACR 206(5) Course ID: 007376
Boilers
Develops techniques for servicing, troubleshooting and performing preventive maintenance on steam generating systems. Emphasizes electrical and steam safety. Covers proper tool and instrument use and practices for the efficient applications on steam systems used in commercial and industrial settings. Pre-requisite: ACR 102 and ACR 103. Lecture/Lab: 5.0 credits (105 contact hours).
Components: Lecture
Attributes: Technical
ACR 207(5) Course ID: 007377
Commercial HVAC Systems
Develops techniques for servicing, troubleshooting and performing preventive maintenance on commercial HVAC systems. Emphasizes electrical and mechanical safety. Covers tools and instruments used in installing, troubleshooting, and preforming preventive maintenance on commercial HVAC systems. Pre-requisite: (ACR 100 and ACR 101 and ACR 102 and ACR 103) or Consent of the Instructor. Lecture/Lab: 5.0 credits (105 contact hours).
Components: Lecture
Attributes: Technical
ACR 208(4) Course ID: 007378
Chillers
Develops techniques for servicing, troubleshooting and performing preventive maintenance on high-pressure, low-pressure and absorption chilled water systems. Emphasizes electrical and safety. Covers proper tool and instrument use and practices for the efficient applications on chilled water systems used in commercial and industrial settings. Pre-requisite: ACR 100 and ACR 102 and ACR 103. Lecture/Lab: 4.0 credits (75 contact hours).
Components: Lecture
Attributes: Technical
ACR 209(4) Course ID: 007379
Manual N Commercial Load Calculation and Design
Covers fundamentals needed to calculate heat gain and heat loss for commercial buildings. Introduces design conditions, solar heat gain, ventilation, internal heat gains, psychrometrics and distribution systems for air conditioning and heating, thereby determining the correct size of equipment needed for different commercial buildings. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ACR 210(3) Course ID: 000962
Ice Machines
Introduces operation, checking, adjusting and troubleshooting commercial ice makers. Covers adjusting, cleaning and troubleshooting commercial ice machines. Pre-requisite: (ACR 100 and ACR 102) with a grade of C or greater. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 250(3) Course ID: 000963
Cooling and Dehumidification
Explains working characteristics of air conditioning units with air and water cooled condensers. Covers line, low voltage and pneumatic controls. Pre-requisite: (ACR 100 & ACR 101) with a grade of C or greater. Co-requisite: ACR 251. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 251(2) Course ID: 000964
Cooling and Dehumidification Lab
Prepares the student for installing, servicing, and troubleshooting air conditioning systems with water and air cooled condensers and line and low voltage. Pre-requisite: (ACR 100 & ACR 101) with a grade of C or greater. Co-requisite: ACR 250. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
ACR 260(3) Course ID: 000965
Heating and Humidification
Discusses principles of operation and application of heating systems from simple electric and fossil fuel furnaces through more complex systems such as oil burners, boilers, and hydronic systems. Concentrates on both line and control voltage circuitry pertaining to these systems. Pre-requisite: ACR 102 & either EET 130 or EET 150 & EET 112 & 113 or IM 110 & 111 or consent from the instructor. Co-requisite: ACR 282. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ACR 282(2)  Course ID: 016230
Heating and Humidification Lab
Provides lab time for application of troubleshooting, checking, adjusting, and installing heating units currently in use. Pre-requisite: ACR 102 &103 or EET 154 & 155 or ETT 112 & 113 or IMT 110 & 111 or consent from the instructor. Co-requisite: ACR 260. Laboratory: 2 credits (60 contact hours)
Components: Laboratory
Attributes: Technical

ACR 270(3)  Course ID: 000967
Heat Pump Application
Explain reverse cycle heating systems, defrost cycles, reversing valves, and auxiliary heating. Concentrates on line and control voltage circuitry pertaining to these units. Pre-requisite: [ACR 100 and ACR 102] with a grade of C or greater] or Permission of Instructor. Co-requisite: ACR 271. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

Air Conditioning and Refrigeration

ACR 271(2)  Course ID: 000968
Heat Pump Application Lab
Provides for application of troubleshooting, checking, adjusting, and installing reverse cycle units. Pre-requisite: [ACR 100 and ACR 102] with a grade of C or greater] or Permission of Instructor. Co-requisite: ACR 270. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

ACR 290(3)  Course ID: 000969
Journeyman Preparation
Includes lectures, discussions, and presentations pertaining to the proper application of HVAC codes. Prepares the student to pass the Kentucky Journeyman HVAC licensing exam. (This class should be taken at the end of the program.) Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACR 291(1)  Course ID: 000970
Instructor Consent Required
Special Problems I
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor
Components: Laboratory
Attributes: Technical

ACR 293(2)  Course ID: 000971
Instructor Consent Required
Special Problems II
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor
Components: Laboratory
Attributes: Technical

ACR 295(3)  Course ID: 000972
Instructor Consent Required
Special Problems III
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor
Components: Laboratory
Attributes: Technical

ACR 298(2)  Course ID: 000973
Instructor Consent Required
Practicum
Practicum provides supervised on-the-job work experience related to the student’s education objectives. Students participating in Practicum do not receive compensation. Pre-requisite: Permission of the instructor.
Components: Practicum
Attributes: Technical

ACR 299(2)  Course ID: 000974
Instructor Consent Required
Co-operative Education Program
Co-op provides supervised on-the-job work experience related to the student’s educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Pre-requisite: Permission of the Instructor.
Components: Co-Op
Attributes: Technical

ACT Accounting

ACT 101(3)  Course ID: 000004
Fundamentals of Accounting I
Students are introduced to accounting terminology and general theoretical principles. The major focus of the course is on the accounting cycle and the communication of financial information to decision-makers. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACT 102(3)  Course ID: 000005
Fundamentals of Accounting II
Basic financial accounting concepts and methods are expanded to include accounting for partnerships and corporations. Lecture: 3 credits (45 contact hours). Pre-requisite: ACT 101.
Components: Lecture
Attributes: Technical

ACT 177(3)  Course ID: 005238
Entrepreneurial Accounting
Includes issues and concerns that are vital to small and medium-size businesses. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

ACT 196(3)  Course ID: 000007
Payroll Accounting
Introduces the design and implementation of modern payroll systems. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

ACT 279(3)  Course ID: 000010
Computerized Accounting Systems
Applying accounting concepts and principles by using accounting software, for both service businesses and merchandisers. Includes internal control principles for both manual and computerized accounting systems. Pre-requisite: ACC 201 or ACT 210 and ACT 102 or concurrent enrollment in ACT 102. Digital literacy 3.0 hours. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACT 280(3)  Course ID: 000014
Financial Accounting Topics
Additional in-depth exposure to financial accounting procedures for classifying, recording, reporting, and disclosure; intended primarily for students enrolled in the Accounting Technology AAS program and the Accounting Option in the Business Administration AAS Program. Pre-requisite: ACC 201 or ACT 101 and ACT 102. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACT 295(3)  Course ID: 000016
Corporate and Partnership Taxation
Emphasizes the study of federal and state tax laws applying to corporations, partnerships, and other entities. Pre-requisite: ACT 251 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ACT 1771(0.6)  Course ID: 005239
Rationale for a Well Designed Accounting System
Developing a well designed accounting system for the entrepreneur. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

ACT 1772(0.6)  Course ID: 005240
Contractual and Legal Reporting Requirements
Common contractual and legal reporting requirements. Lecture: 0.6 credits (9 contact hours). Pre-requisite: ACT 1771 or consent of the instructor.
Components: Lecture

ACT 1773(0.6)  Course ID: 005241
Overview of Accounting for the Entrepreneur
Overview of accounting for the entrepreneur. Lecture: 0.6 credits (9 contact hours). Pre-requisite: ACT 1772 or consent of the instructor.
Components: Lecture

ACT 1774(0.6)  Course ID: 005242
Introduction to Computer Accounting Software to Record Basic Accounting Transactions
Computer accounting software to record basic accounting transactions. Lecture: 0.6 credits (9 contact hours). Pre-requisite: ACT 1773 or consent of instructor.
Components: Lecture

ACT 1961(0.5)  Course ID: 006117
Payroll Records
Introduces the records required for today’s payroll or human resource manager. Covers the relationship between Payroll and Human Resources and their common laws. Concludes with salary computations and methods to compute Gross Payroll. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

ACT 1962(0.5)  Course ID: 006118
Payroll Taxes
Covers federal and state tax withholding and employer-side payroll expenses. Pre-requisite: ACT 1961. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

ACT 1963(0.5)  Course ID: 006119
Accounting for Payroll
Covers federal and state unemployment laws and accounting for payroll. Pre-requisite: ACT 1961. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

ACT 1964(1)  Course ID: 006120
Manual Payroll
Requires the student to complete a Quarterly Payroll Simulation. Pre-requisite: ACT 1962 & 1963. Lecture: 1 credit (15 contact hours).
Components: Lecture

ACT 1965(0.5)  Course ID: 006121
Computerized Payroll
Requires the student to complete a Computerized Payroll Simulation. Pre-requisite: ACT 1962 & 1963. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture
ACT 2791(1) Course ID: 015822
Computer Accounting Basics
Presents accounting concepts and principles for a merchant using computerized accounting software. Pre-requisite: ACC 201 or ACT 101 and ACT 102 or concurrent enrollment in ACT 102. Digital literacy 3.0 hours. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

ACT 2792(1) Course ID: 015823
Computer Accounting Procedures
Presents computerized accounting concepts and principles for businesses including service providers. Pre-requisite: ACT 2791. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

ACT 2793(1) Course ID: 015824
Advanced Features and Controls
Presents accounting concepts and principles for new businesses, including merchandisers, and covers internal controls. Pre-requisite: ACT 2792. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

ADX Automotive Technology

ADX 120(3) Course ID: 000983
Basic Automotive Electricity
Introduces the student to the principles, theories, and concepts of the automotive electrical system that include the unique diagramming, coding and locating of wiring, and component devices. Co-requisite: ADX 121, Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

ADX 121(2) Course ID: 000984
Basic Automotive Electricity Lab
Provides hands-on work designed to allow the student to use the concepts, principles, and theories covered in Basic Automotive Electricity, ADX 120, in practical application. Provides the student a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 120, Lab: 2.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

ADX 150(3) Course ID: 000985
Engine Repair
Provides a series of lectures and demonstrations on the fundamentals of engine repair, troubleshooting, and engine operation and maintenance. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

ADX 151(2) Course ID: 000986
Engine Repair Lab
Provides practical experiences and applications relating to engine repair, inspection, trouble shooting and maintenance. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or Co-requisite: ADX 150. Lab: 2.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

ADX 170(3) Course ID: 000987
Climate Control
Introduces the theory and operation of heating and air conditioning systems, air conditioning terminology, and servicing and troubleshooting mechanical and electrical circuits of heating and air conditioning systems. Co-requisite: ADX 171. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

ADX 171(1) Course ID: 000988
Climate Control Lab
Provides opportunities to trouble shoot, repair and perform maintenance on heating and air conditioning systems. Provides experiences in safety precautions, special tool uses, component operation and how to service and troubleshoot the complete system. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 170. Lab: 1.0 credit (45 contact hours).
Components: Laboratory Attributes: Technical

ADX 260(3) Course ID: 000989
Electrical Systems
Focuses on the theory and principles relating to automotive electrical/electronic components. Co-requisite: ADX 261. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical Automotive Technology

ADX 261(2) Course ID: 000990
Electrical Systems Lab
Provides practical applications and experiences related to the theory and principles of automotive electrical/electronic components. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 260. Lab: 2.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

AET Aeronautics

AET 110(3) Course ID: 006516
Fundamentals of Aerodynamics/Private Pilot Ground School
Covers the fundamentals of aerodynamics aircraft systems, aeronauteal decision making (ADM), applicable federal regulations, flight planning and aeronautical charts, meteorology, flight navigation, and weight and balance. Requires no previous aviation experience and is formatted to take “zero” time students and ready them for the national private pilot examination. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture Attributes: Pilot Course, Technical

AET Applied Engineering Technology

AET 100(1) Course ID: 006358
Introduction to Lean Systems
Presents methodologies for Lean systems to include Lean Manufacturing basics and tools, Lean implementation, Lean measures, Six-Sigma, and Lean supply chain design and management. Lecture: 1 credit (15 contact hours).
Components: Lecture Attributes: Technical

AET 102(4) Course ID: 006359
Introduction to Energy
Introduces the scientific principles of energy and fuels and investigates specific topics: nature and extent of energy resources, economics and environmental effects, alternative energy, energy technology, health and safety. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 110(4) Course ID: 006360
Introduction to Circuit Analysis
Covers basic electrical components as well as DC/AC circuit configurations. Introduces the theory and operation of solid state devices such as diodes, BJTs, FETs, and operational amplifiers; emphasizes circuit construction, analysis, and troubleshooting. Co-requisite: MT 125 or Consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 112(4) Course ID: 006361
Alternative Energy Fundamentals
Addresses topics of alternative energy sources including passive and active solar systems, fuel cells, hydroelectric power, geothermal heat transfer, photovoltaic systems, biofuels, and wind energy. Pre-requisite: AET 102. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 114(4) Course ID: 006362
Solar and Wind Energy Generation
Introduces the methods and equipment necessary for the production of electrical energy by alternative means to include photovoltaic systems, wind turbines and solar water heating. Pre-requisite: AET 110 or Consent of instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 120(4) Course ID: 006363
Power Electronics
Introduces the circuitry and components used to convert the power generated by alternative methods to line voltage and current values commonly used in residential and commercial electrical installations; includes Thyristor theory and application, inverter types and application, and battery charging and maintenance. Pre-requisite: AET 110 or Consent of instructor. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture Attributes: Technical

AET 130(3) Course ID: 006364
Industrial Sensors
Covers various types of industrial sensors and optoelectronic devices. Pre-requisite: AET 110 or Consent of Instructor. Lecture: Lab: 3 credits (60 contact hours).
Components: Lecture Attributes: Technical

AET 140(4) Course ID: 006365
Industrial Equipment Maintenance
Covers maintenance techniques and practices commonly found in a wide variety of industrial settings to include areas such as lubrication, mechanical drives, bearings, and safe working practices. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture Attributes: Technical

AET 150(4) Course ID: 006366
Advanced Circuit Analysis
Introduces the more advanced concepts of DC and AC circuits. Topics include Kirchhoff’s Laws, network theorems, Delta-Y conversion, reactive circuits, complex impedances, Z-matching, resonance, and LC tank loading effect. Pre-requisite: AET 110 or Consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 160(4) Course ID: 006367
Industrial Controls Electronics
Introduces the concepts of industrial power control to include solid state devices, controllers, single and polyphase rectification, and DC power supplies. Pre-requisite: AET 110 or Consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 170(4) Course ID: 006368
Digital Circuits and Concepts
Covers the basics of digital electronics to include logic gates, number systems, Boolean algebra, Karnaugh mapping, registers, bi-stable circuits, and basic arithmetic circuits. Pre-requisite: AET 110 or consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture Attributes: Technical

AET 180(3) Course ID: 006369
Industrial Computer Architecture
Introduces the basic layout of industrial computers as preparatory course leading into the more advanced PLC’s; includes binary and hexadecimal number systems, bus oriented computer systems, I/O scan, interfacing considerations, and introduction to programmable controllers. Pre-requisite: AET 110 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical
AET 190(4) Course ID: 006370
Industrial Computer Programming Concepts
Covers programming concepts specifically directed toward industrial programmable devices such as PLCs. Pre-requisite: Consent of instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AET 200(4) Course ID: 006371
Integrated Circuits
Focuses on integrated circuits as they apply to linear and non-linear applications to include integration techniques, operational amplifiers, waveform generators, comparators, active filters, and interfacing. Pre-requisite: AET 150 or Consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AET 210(4) Course ID: 006372
Alternative Energy Independent Studies
Provides the student with the opportunity to put to practical use, by way of a student project, the knowledge and skills gained in AET 102, AET 112, AET 114, and AET 120. Pre-requisite: AET 112 and AET 114 and AET 120. Lecture/Lab: 4 credits (105 contact hours).
Components: Lecture
Attributes: Technical

AET 220(4) Course ID: 006373
Modulation Techniques and Applications
Introduces the various types of electronic modulation including amplitude, frequency, and phase modulation with emphasis on antenna theory and the study of RF power in both resonant and non-resonant loads. Pre-requisite: AET 200 or Consent of Instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AET 230(3) Course ID: 006374
Introduction to Circuit Design
Utilizes ideas learned in previous electronics courses to design, build, and test circuits based upon design criteria provided by the instructor. Pre-requisite: [AET 170 and AET 200] or Consent of Instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

AET 240(4) Course ID: 006375
Industrial Machinery Control
Examines AC and DC motors and their associated control equipment. Introduces ladder logic and schematic diagram interpretation and drawing. Gives the student practical experience in the design, construction and troubleshooting of industrial motor control circuits. Advances the use of solid state devices and system integration. Pre-requisite: AET 110. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture
Attributes: Technical

AET 250(4) Course ID: 006376
PLC Networking
Introduces the basic concepts in PLC networking to include networking protocols specific to industrial controllers. ASCII codes, bus topologies, and handling of remote I/O. Pre-requisite: AET 190. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AET 260(4) Course ID: 006377
Robotics and Programmable Controls
Introduces the theory of robots and programmable controls including terminology, components, and basic programming; provides theory of servo and non-servo robots and their controllers. Pre-requisite: Consent of instructor. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AET 270(4) Course ID: 006378
Advanced PLC Programming
Introduces the student to the wide range of capabilities beyond basic programming needs, which are available to the modern PLC user. Includes data Manipulation; shift register and sequencer instructions; binary, octal and hexadecimal numbering systems; and analog inputs and outputs. Pre-requisite: EET 276 and EET 277. Lecture/Lab: 4 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AFS 111(4) Course ID: 005359
Aerospace Studies I
A course designed to provide the student with a basic understanding of the nature and principles of war, national power, and the Department of Defense role in the organization of national security. The student also develops leadership abilities by participating in a military organization, the cadet corps, which offers a wide variety of situations demanding effective leadership. Co-requisite: AFS 112. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

AFS 112(1) Course ID: 005360
Leadership Laboratory I
A course designed for development of basic skills required to be a manager, including communications, human relations, and administration of equal opportunity. Credit will not be granted toward the hours requirements for the degree. Pass/Fail only. Co-requisite: AFS 111. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

AFS 113(1) Course ID: 005361
Aerospace Studies II
A course designed to provide the student with a basic understanding of the contribution of aerospace power to the total U.S. strategic offensive and defensive military posture. The student also develops leadership abilities by participating in a military organization, the cadet corps, which offers a wide variety of situations demanding effective leadership. Pre-requisite: AFS 111. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Other

AFS 114(1) Course ID: 005362
Leadership Laboratory II
A continuation of AFS 113. A course designed to develop managerial skills including superior/subordinate relationships, communications, customs and courtesies, basic drill movements and career progression requirements. Credit will not be granted toward the hours requirements for the degree. Pass/Fail only. Co-requisite: AFS 113. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Other

AFS 211(1) Course ID: 005222
Aerospace Studies II
Introduces the study of air power from a historical perspective; focuses on the development of air power into a primary element of national security. Leadership experience is continued through active participation in the cadet corps. Pre-requisite: AFS 111, 113 or PAS approval. Lecture: 1 hour; leadership; Laboratory: 1 hour hour. Components: Lecture
Attributes: Technical

AFS 212(1) Course ID: 005223
Leadership Laboratory II
A course designed for development of advanced skills required to be a manager/leader, including leadership studies, public speaking, group dynamics, motivation and preparation for field training. Credit will not be granted toward the hours requirements for the degree. Pass/Fail only. Co-requisite: AFS 211. Components: Laboratory
Attributes: Technical

AFS 213(1) Course ID: 005235
Aerospace Studies II
Provides a foundation for understanding how air power has been employed in military and non-military operations to support national objectives. Examines the changing mission of the defense establishment, with particular emphasis on the United States Air Force. Leadership experience is continued through participation in the cadet corps. Lecture, one hour; leadership laboratory, one hour per week. Pre-requisite: AFS 111, 113 or PAS approval. Components: Lecture
Attributes: Other

AFS 214(1) Course ID: 005236
Leadership Laboratory II
A continuation of AFS 213. A course designed to develop supervisory management skills to include communications, techniques of critique, social actions, personnel evaluation procedures, problem solving, role playing and field training preparation. Credit will not be granted toward the hours requirements for the degree. Pass/Fail only. Co-requisite: AFS 213. Components: Laboratory
Attributes: Other

AGR 101(3) Course ID: 000750
The Economics of Food and Agriculture
Introduces the field of agricultural economics and some of the basic tools and concepts of decision-making. Illustrates concepts in terms of selected current social and economic issues including the role of agriculture in both a national and international dimension. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Technical

AGR 125(3) Course ID: 002209
Introduction to Fertilizers and Soils
Introduces practical aspects of soils and fertilizers as related to plant growth and production. Lecture: 2 credits (30 contact hours). Lab: 1.0 credits (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

AGR 130(2) Course ID: 005135
Field Applications in Agriculture
Includes methods of solving many application problems encountered in agriculture using applied mathematical and logic skills. Emphasizes practical mathematical skills already acquired from secondary education to address agricultural situations involving computations necessary for upper level courses in agriculture. Requires some knowledge of agricultural situations. Pre-requisite: MAT 055 or equivalent placement level. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

AGR 140(3) Course ID: 000021
Issues In Agriculture
Provides an introduction to agriculture and current issues pertaining to the agricultural industry. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AGR 150(3) Course ID: 000022
Agricultural Power
Provides an introduction to farm equipment and their power units through classroom instruction that concentrates on specific principles that govern the equipment. Includes a lab that applies the principles learned in the classroom. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

AGR 165(3) Course ID: 000023
Agricultural Seminar
Includes reports and discussion of problems in relation to operations of agricultural business. Offered only in summer. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Introduction to Equipment, Machines, and Engines

Provides an introduction to tractors, combines, balers, forage harvesters and windrowers and various attachments. Includes a study of the operation, adjustments, and repairs. Covers an introduction to engines in which theory and minor repairs will be discussed. Lecture: 1.0 credit (15 contact hours). Laboratory: 2.0 credits (90 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

Course ID: 000024

Introduction to Animal Science

Provides a limited overview of the farm species of livestock. Includes the study of major livestock breeds of beef and dairy cattle, sheep, swine, poultry, and horses. Covers management application for livestock production as well as production facilities. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credits (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

Course ID: 000032

Introduction to Plants/Crop Production

Familiarizes students with the basic principles and theories involved in crop production. Provides a limited understanding of how crops are grown as a prelude to growing crops successfully. Covers pest and pesticides as well as plant disease and protection. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

Course ID: 000033

Introduction to Sustainable Agriculture

Provides students with a clear perspective on the principles, history, and practices of sustainable agriculture in our local and global communities. Provides understanding of the challenges to sustainability in our present system of agriculture. Enables students to identify principles of sustainable agriculture as they relate to basic production practices. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 007387

Livestock Management

Covers management practices involved in the production of swine, horses, cattle, sheep and goats. Emphasizes selection, reproduction, feeding, diseases, marketing, handling, and parasite control. Laboratory exercises teach and reinforce livestock management techniques. Pre-requisite: AGR 240 Introduction to Animal Science. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 007424

Agriculture Maintenance

Provides a study of basic maintenance issues (electrical, plumbing, fencing, building construction and repair, and safety) that arise in farming operations; and the practical troubleshooting and problem solving techniques. Lecture/ Lab: 3.0 credits (75 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015713

Herbaceous Plant Production

Includes the identification, selection, requirements, care, and uses of herbaceous plant materials commonly found in floriculture/landscape production, including the scientific name and common pests. Annuals, perennials, bulbs, and grasses will be discussed. Lecture/Lab: 3.0 (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015714

Herbaceous Plant Production

Includes the identification, selection, requirements, care, and uses of herbaceous plant materials commonly found in floriculture/landscape production, including the scientific name and common pests. Annuals, perennials, bulbs, and grasses will be discussed. Lecture/Lab: 3.0 (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015714

Technology in Agriculture

Provides students with a basic introduction to the newest technological advancements in the agricultural industry, including the involvement of computer based applications and smart devices. Topics will include computer integrated management of agricultural operations, including livestock, crop, financial management, and recordkeeping. Additionally, equipment and farm monitoring technology and their integration with smart devices will be discussed. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015715

Greenhouse Production

Designed to introduce students to the concept of controlled environment growing and plant management. Plant production will be used to demonstrate greenhouse techniques. Identification of diseases, insects, and plant disorders in the greenhouse will also be discussed. Plant and growth medium selection will also be components. An emphasis will be placed on plants for agricultural and food production. Pre-requisite: AGS 135 Herbaceous Plant Production. Lecture/Lab: 3.0 credits (75 contact hours)

Components: Lecture
Attributes: Technical

Course ID: 015716

Agriculture Marketing and Sales

Provides a limited overview of the farm species of livestock. Includes the study of major livestock breeds of beef and dairy cattle, sheep, swine, poultry, and horses. Covers management application for livestock production as well as production facilities. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

Course ID: 015717

Forage Management

Includes the study of the management, production, and utilization of forage grasses and legumes for harvested and grazed production. Subject areas will include varietals selection, planting, calculating yields, production costs, growth management, and harvesting techniques. Management will focus on annual and perennial legume and grass production. This course will emphasize establishment, winter survival, fertilization, cutting management, forage storage, and variety selection. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015718

Weed Management

Examines the nature of crop/weed interactions and explores various weed control methods. Weed identification, biology, ecology and modern management principles are all explored in this course. Pre-requisite: AGR 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015719

Fruit and Vegetable Production

Provides knowledge required for development of skills in the following areas: commercial vegetable production; variety selection; production methods; growth and development, harvesting; and pest control. Pre-requisite: AGR 250 Intro to Plants/Crop Production. Lecture/ Lab: 3.0 credits (75 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015720

Field Crop Production

Gain an understanding of the major U.S. field crops with emphasis on their growth requirements, development, uses, management, and physiology. Pre-requisite or Co-requisite: AGR 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

Course ID: 015721
AGS 245(3) Course ID: 015722
Pest Management
Provides a study of agricultural pest control, including insects, diseases, and weeds, of common agricultural and horticultural crops. Management techniques will also be discussed, including chemical, biological, IPM, and organic methods. Pre-requisite: AGR 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

AGS 255(3) Course ID: 015723
Crop Scouting
Designed to give students a hands-on experience scouting crops to find and identify existing and potential problems related to crop growth and development, fertility, pest pressure, and similar yield reducers. Pre-requisite: AGS 235 Field Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

AGS 265(2) Course ID: 015724
Agriculture Business and Records
Provides students with an introduction to farm business management and record keeping. Emphasis is placed on business structures, developing a business plan, budgeting and basic accounting principles, agriculture tax code, and record keeping. Lecture: 2.0 credits (30 contact hours).
Components: Lecture Attributes: Technical

AGS 275(3) Course ID: 015725
Value Added Production
Provides students the knowledge and skills necessary to add economic value to raw farm products. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

AGS 285(3) Course ID: 015726
Farm Financial Management
Provides an overview of the basic concepts needed to understand commodity futures and option markets. Risks and rewards are discussed, as well as other topics needed to successfully trade in these markets. Pre-requisite: AGR 101 Economics of Food and Agriculture. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

AGS 295(1) Course ID: 015727
Agriculture Studies Capstone
Designed to be taken by the Agricultural Studies student in their final semester, as a programmatic review and course designed to bridge previous courses together. This course seeks to ensure students are ready to enter the workforce upon graduation as well as pass the capstone exam. Pre-requisite or Co-requisite: Sophomore Standing, Final Semester. Lecture: 1.0 credit (15 contact hours).
Components: Lecture Attributes: Technical

AHS Allied Health

AHS 100(2) Course ID: 001515
Human Growth and Development
Course focus is on the promotion of health through assessment of individuals' growth and development across the life span. Consideration is given to the family, cultural, environmental, spiritual, and genetic influences when meeting basic human needs. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

AHS 105(3) Course ID: 000037
Introduction to Health Occupations
Basic health care concepts and skills for students interested in or planning a career in health care are introduced. Basic body mechanics, health care delivery systems, caregiver/client relationships, infection control, basic assessment skills, first aid, cardiopulmonary resuscitation certification, team-building skills and problem-based learning are included. Lecture: 2.5 credit hours (37.5 contact hours); Lab: 5 credit hours (30 contact hours).
Components: Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical

AHS 109(4) Course ID: 001516
Introduction to Body Structure and Functions
Provides knowledge of the structure and function of the human body with emphasis on normalcy. Includes interaction of all body systems in maintaining homeostasis and promotes an understanding of health maintenance. Not intended as a general education science course. Lecture: 4 credits (60 contact hours).
Components: Lecture Attributes: Technical

AHS 115(3) Course ID: 003808
Medical Terminology
A study of anatomical, physiological and pathological terminology with emphasis on work structures and definition of root words, suffixes, and prefixes from Greek and Latin. Additional emphasis is placed on spelling and pronunciation. Primarily designed for individuals preparing for a career in health care. No previous knowledge of Greek or Latin is required. Lecture: 3 hrs.
Components: Lecture Attributes: Technical

AHS 120(1) Course ID: 001517
Medical Terminology Word Roots
Focuses on advanced word structures and the definition of root words, suffixes, and prefixes from Greek and Latin. Not intended as a general education science course. Lecture: 1 credit (15 contact hours).
Components: Lecture Attributes: Technical

AHS 130(2) Course ID: 001518
Infection Control
Promotes an understanding of the effects of microorganisms on the human body. Includes standard precautions necessary for health maintenance and infection control, focusing on reducing the incidence of disease. Not intended as a general education science course. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

AHS 140(3) Course ID: 005520
Introduction to Public and Community Health
Introduces students to the management of public health emergencies. Topics include human epidemics and pandemics, agricultural and plant diseases, and emergency medicine. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

AHS 201(3) Course ID: 002358
Management Principles for Allied Health Providers
Many allied health practitioners will assume the role of a manager during the course of their career. This course is designed to provide theory and application focusing on the development of strategies and skills to assume professional responsibilities in management and administration. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

AHS 203(3) Course ID: 005479
Diversity in Health Care
Introduces students to health care consumers from various cultural backgrounds. Emphasizes the cultural heritage and diversity existing in contemporary society and cultural factors that affect nontraditional and underrepresented consumers' access to and use of health care resources. Broadens students' perception and understanding of health/illness and the variety of meanings these terms carry for members of differing sociocultural populations. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

AHS 1151(1) Course ID: 016312
Medical Terminology Word Roots
Emphasizes word structures and the definition of root words, suffixes, and prefixes from Greek and Latin. Lecture: 1 credit (15 contact hours).
Components: Lecture Attributes: Technical

AHS 1152(1) Course ID: 016313
Basic Elements of Terminology
Focuses on basic elements of medical words from Greek or Latin roots, together with additional emphasis on spelling and pronunciation. Pre-requisite: AHS 1151. Lecture: 1 credit (15 contact hours).
Components: Lecture

AHS 1153(1) Course ID: 016314
Advanced Word Roots & Systems
Focuses on advanced word structures and the definition of root words, suffixes, and prefixes from Greek and Latin that are related to human body structures; also includes the study of commonly used medical abbreviations. Pre-requisite: AHS 1152. Lecture: 1 credit (15 contact hours).
Components: Lecture

AIM Advanced Integrated Manufacturing

AIM 100(3) Course ID: 016284
Principles of Advanced Integrated Manufacturing
Introduces the founding principles/practices of manufacturing safety and health in a modern manufacturing environment. Covers current manufacturing quality control concepts and techniques used in industry with an emphasis on proper statistical methods and relevant software. Pre-requisite: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

AIM 110(3) Course ID: 016285
Manufacturing Processes and Materials
Covers modern manufacturing processes and materials in the production of contemporary consumer and industrial products with an emphasis on front-line manufacturing production. Pre-requisite: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

AIM 120(3) Course ID: 016286
Introduction to Modern Plastics Manufacturing
Introduces common plastic processing techniques, various plastic materials and practical safety requirements for common processing in a plastics manufacturing facility. Pre-requisite: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

AIT Advanced Integrated Technology

AIT 100(4) Course ID: 005955
Power Generation and Utilization
Introduces electrical, hydraulic, and pneumatic power systems used in industry. Provides theory and application of DC and AC, including three-phase power and theory and application of hydraulic and pneumatic power utilizing basic circuits. Pre-requisite: Reading and Mathematics assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture/Lab: 4 credits (90 contact hours). (30:1 Ratio Lab).
Components: Lecture Attributes: Course Also Offered in Modules, Technical
AIT 110(3)  Course ID: 005955
Power Distribution Systems
Provides instruction in the use of electrical, hydraulic, and pneumatic power as it applies in industry. Covers AC/DC circuit analysis, single-phase and three-phase power including hydraulic and pneumatic power and basic principles of pressure and flow. Pre-requisite: AIT 100 or consent of instructor. Lecture/Lab: 3 credits (67.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 190(3)  Course ID: 006561
Integrated Power Plant Operations
Introduces students to main components found within a fossil power plant. Provides in-depth study of following systems: cooling water system, steam flow system, air flow system, gas flow system, and power distribution. Provides instruction in the integration of systems within a fossil fuel power plant. Pre-requisite: AIT 120 or higher. Lecture/Lab: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

AIT 200(4)  Course ID: 005964
Advanced Equipment Maintenance
Focuses on maintenance techniques and procedures used with advanced and highly technical industrial machinery, including lubrication, V-belt and shaft drives, couplings, chain drives, bearings and seals, brakes and clutches, machine vibration and analysis, laser alignment, and troubleshooting techniques. Emphasizes the use of hand tools and precision measuring instruments. Pre-requisite: Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 220(3)  Course ID: 006585
The Integrated Power Grid
Introduces students to types of power plants that are tied to the electric grid other than fossil power plants. Provides overviews of nuclear, hydro, and many forms of renewable energy. Includes forms of alternative energy power plants such as solar, wind, and bio-mass power plants. Lecture: 3.0 (45 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 250(5)  Course ID: 006574
Application of the National Electrical Code for Residential Wiring
Applies articles of National Electrical Code to residential wiring. Pre-requisite: AIT 240 or consent of instructor. Lecture/Lab/Practicum: 5.0 credits (165 contact hours).
Components: Laboratory, Lecture, Practicum
Attributes: Technical

AIT 270(2)  Course ID: 006942
Introduction to Robotics and Programmable Logic Controllers
Examines fundamental architecture of programmable logic controllers as it pertains to industrial application and incorporates ladder logic principles, commonly used instruction language, editing, program navigation and program analysis. Includes the fundamentals of 6-axis robotics including manual manipulation, execution of existing robotic program file, modification of target parameters, and safety interlocks. Pre-requisite: AIT 1501 or Consent of Instructor. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 290(0.1 - 5)  Course ID: 005965
Instructor Consent Required
Selected Topics in Advanced Integrated Technology
Includes selected topics in integrated technology, due to rapidly changing technology or in response to local needs. Covers topics which may vary from semester to semester at the discretion of the instructor. May repeat course with different topics to a maximum of five credit hours. Pre-requisite: Consent of instructor. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

AIT 1001(2)  Course ID: 006150
Basic Electrical Knowledge
Introduces electrical power systems used in industry. Provides introductory theory and application of DC/AC circuits, control transformers, and operation of DC power supplies. Pre-requisite: Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 2 credits (45 contact hours).
Components: Lecture

AIT 1002(1)  Course ID: 006151
Power Development
Introduces electrical power systems used in industrial settings, including basic theory and application of DC generators, alternators, and electric motors. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or completion of AIT 1001 or consent of instructor. Lecture/Lab: 1 credit (22.5 contact hours).
Components: Lecture

AIT 1003(1)  Course ID: 006152
Hydraulic/Pneumatic Fundamentals
Introduces basic theory and application of hydraulic and pneumatic industrial power systems. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or completion of AIT 1002 or consent of instructor. Lecture/Lab: 1 credit (22.5 contact hours).
Components: Lecture

AIT 1101(1)  Course ID: 006153
Electric Power Distribution
Provides instruction in the use of electrical power as it applies in industry. Includes AC/DC circuit analysis, AC power generation and three-phase distribution systems, and transformers. Pre-requisite: AIT 100 or consent of instructor. Lecture/Lab: 1.0 credits (22.5 contact hours).
Components: Lecture
AIT 1102(2) Course ID: 006154
Fluid Power Distribution
Provides instruction in the use of hydraulic and pneumatic power as it applies to industry. Includes basic principles of pressure and flow; basic hydraulic/pneumatic circuits including pumps, valves, cylinders, and motors. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 2.0 credit (45 contact hours).

Components: Lecture

AIT 1201(1) Course ID: 006155
Electrical Installation
Focuses on the installation of electrical industrial systems, including print reading, wiring-box selection, component installation, raceways and conduit, control wiring, and wiring techniques. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 1 credit (25 contact hours).

Components: Lecture

AIT 1202(1) Course ID: 006156
Piping, Pneumatic, & Installation
Focuses on the installation of pneumatic industrial systems, including interpretation of drawings and diagrams, fabrication of pipe and pipingfitting, pneumatic supply lines, piping safety, and pipe installation for pneumatic systems. Pre-requisite: AIT 1201 or consent of instructor. Lecture/Lab: 1 credit (25 contact hours).

Components: Lecture

AIT 1203(1) Course ID: 006157
Mechanical Installation
Includes motor and machine mounting, speed, torque, power measurement, and various lifting and rigging techniques. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 1 credit (25 contact hours).

Components: Lecture

AIT 1301(2) Course ID: 006158
Principles of Instrumentation
Introduces measurement and instrumentation concepts and applications by examining the four main components of instrumentation: temperature, pressure, flow, and level. Pre-requisite: (MT 120 or higher) OR consent of instructor. Lecture/Lab: 2.0 credit (45.0 contact hours).

Components: Lecture

AIT 1302(2) Course ID: 006159
Integrated Process Control
Covers measurement and instrumentation concepts and applications and introduces the concept of loop controls and the proper calibration of loops. Examines the importance of PID controllers in a control loop. Pre-requisite: (MT 120 or higher) OR consent of instructor. Lecture/Lab: 2 credits (45 contact hours).

Components: Lecture

AIT 1401(2) Course ID: 006161
Basic Electrical Controls
Provides instruction in the integrated application of basic electrical controls including electrical motor controls with starting, reversing, and stopping devices. Pre-requisite: AIT 100 or AIT 1103 or consent of instructor. Lecture/Lab: 2 credits (45 contact hours).

Components: Lecture

AIT 1402(1) Course ID: 006162
Basic Hydraulic Controls
Provides instruction in hydraulic speed and pressure control; includes flow control valves, metering circuits, pressure reducing valves, and sequence valves. Pre-requisite: AIT 140 or AIT 1003 or consent of the instructor. Lecture/Lab: 1 credit (22.5 contact hours).

Components: Lecture

AIT 1403(1) Course ID: 006163
Basic Pneumatic Controls
Introduces the student to pneumatic speed control circuits. Uses air pressure regulators and flow controls to obtain cylinder speeds. Pre-requisite: AIT 100 or AIT 1103 or consent of the instructor. Lecture/Lab: 1 credit (22.5 contact hours).

Components: Lecture

AIT 1501(2) Course ID: 006164
Intermediate Electrical Controls
Provides instruction in the integrated application of advanced industrial controls for electrical systems. Emphasizes variable frequency drives, proximity sensors, SCR speed controls. Pre-requisite: AIT 1401 or AIT 1401 or consent of instructor. Lecture/Lab: 2 credits (45 contact hours).

Components: Lecture

AIT 1502(1) Course ID: 006165
Intermediate Pneumatic Controls
Provides instruction in the integrated application of advanced industrial controls for pneumatic systems. Emphasizes pneumatic logic circuits. Pre-requisite: AIT 140 or AIT 1402 or consent of instructor. Lecture/Lab: 1 credit (22.5 contact hours).

Components: Lecture

AIT 1503(1) Course ID: 006166
Intermediate Hydraulic Controls
Provides instruction in the integrated application of advanced industrial controls for hydraulic circuits. Emphasizes hydraulic synchronization circuits and multi-pressure circuits. Pre-requisite: AIT 140 or AIT 1403 or consent of instructor. Lecture/Lab: 1 credit (22.5 contact hours).

Components: Lecture

AIT 1902(1) Course ID: 006563
Air and Gas Flows
Provides instruction in the main components and integration of air and gas flows within a fossil fuel power plant. (Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses) OR consent of instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

AIT 2001(2) Course ID: 006167
Integrated Process Management
Emphasizes project team organization. Introduces the following concepts: cycle time, production time, first pass yield, and barrier identification Pre-requisite: AIT 130 or Consent of Instructor. Lecture/Lab: 2 credits (45 contact hours).

Components: Lecture

AIT 2002(2) Course ID: 006168
Quality Control and SPC
Introduces quality control including understanding acceptance criteria with tolerances, data collection, and data reporting. Pre-requisite: AIT 130 or Consent of Instructor. Lecture/Lab: 2 credits (45 contact hours).

Components: Lecture

AIT 2101(1) Course ID: 006169
Predictive/Preventive Maintenance and Lubrication
Focuses on maintenance techniques and procedures used with advanced and highly technical industrial machinery. Pre-requisite: Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 1.0 credits (22.5 contact hours).

Components: Lecture

AIT 2102(1) Course ID: 006170
Power Transmission Systems
Focuses on maintenance techniques and procedures used with advanced and highly technical industrial machinery including v-belt and shaft drives, couplings, chain drives, bearings and seals, brakes and clutches. Pre-requisite: Reading and Mathematics assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).

Components: Lecture

AIT 2103(2) Course ID: 006171
Advanced Mechanical
36Focuses on troubleshooting techniques necessary for advanced and highly technical industrial machinery. Pre-requisite: Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 2.0 credits (45 contact hours).

Components: Lecture

AIT 2701(1) Course ID: 006943
Introduction to PLCs
Examines fundamental architecture of programmable logic controllers as it pertains to industrial applications and incorporates ladder logic principles, commonly used instruction language, editing, program navigation and program analysis. Pre-requisite: AIT 1501 or Consent of Instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).

Components: Lecture

AIT 2702(1) Course ID: 006944
Introduction to Robotics
Investigates underlying principles, applications and fundamentals of 6-axis robotics including manual manipulation, execution of existing robotic program file, modification of target parameters, and safety interlocks. Pre-requisite: AIT 2701. Lecture/Lab: 1.0 credit (22.5 contact hours).

Components: Lecture

AMS American Military Studies

AMS 101(2) Course ID: 000907
Introduction to the Army
This introductory level course is designed to give students an appreciation for the role the Army currently plays in our society. The course covers the history of the Army and the roles and relationships of the Army within our society. The course also covers some of the basic skills necessary for today’s leaders to include oral presentation, time management, map reading, basic rifle marksmanship and squad tactics.

Components: Lecture

Attributes: Technical

AMS 102(2) Course ID: 000782
Introduction to Leadership
This course is designed to acquaint the student with the fundamental skills necessary to be a leader, both in military and civilian context. Course also covers basic military map reading skills. Pre-requisites: None.

Components: Lecture

Attributes: Other

AMS 211(2) Course ID: 004854
Advanced Leadership I
This course focuses on both theoretical and practical aspects of leadership. Students will examine topics such as written and oral communication, effective listening, assertiveness, personality, adult development, motivation, and organizational culture and change. Lecture: 2 credits (30 contact hours).

Components: Lecture

Attributes: Technical

AMS 250(1) Course ID: 005380
Basic Military Science Lab
A hands-on practicum which exposes the student to the military skills required for basic technical and tactical competence to enter the Advanced Course. Laboratory, two hours per week and two week-end exercises. May be repeated to a maximum of four credits. Practicum: 1 credit (32 contact hours).

Components: Practicum

Attributes: Technical
AMT 100(1) Course ID: 004348
Mathematics
Instruction on the aerodynamic and physical forces acting on an aircraft in flight to be taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (15:1 ratio/7 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 102(1) Course ID: 004350
Aircraft Weight and Balance
Teaches knowledge and skills necessary in measuring, calculating, and documenting aircraft weight and balance. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (75:1 ratio/37 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 103(1) Course ID: 004351
Cleaning and Corrosion Control
Provides instruction in the identification, cause, prevention, removal and treatment of corrosion. Also, includes interior and exterior cleaning of the aircraft. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (75:1 ratio/37 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 104(1) Course ID: 004352
Basic Electricity
Provides instruction in basic electricity theory, concepts, components, physics, meter operation and use, battery construction and servicing. Will be taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (90:1 ratio/45 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 105(1) Course ID: 004353
Fluid Lines and Fittings
Provides an understanding of basic hydraulic functions, the fabrication of tubing and flex hoses as well as seal compatibility. Taught by lectures, demonstrations, worksheets, reading assignments and projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 106(1) Course ID: 004354
Aircraft Drawing and Blueprint Reading
Provides instruction in reading and interpretation of basic industrial and aircraft blue prints. This is taught by lecture, demonstration, worksheet, reading assignments and projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 107(1) Course ID: 004355
Physics
Provides instruction in basic principles of physics as related to aviation maintenance. This is taught by lecture, demonstration, worksheet, reading assignments and projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 108(1) Course ID: 004356
Ground Handling and Servicing
Basic handling and ground service techniques of the aircraft taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (8 contact hours), Lab: 0.5 credits (45:1 ratio/22 contact hours). Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 109(1) Course ID: 004357
Maintenance Publications
Instruction in the use of maintenance publications is taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credit (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 110(1) Course ID: 004358
Mechanic Privileges and Limitations
Instruction in aircraft mechanic privileges and limitations is taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (15:1 ratio/7 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 111(1) Course ID: 004359
Materials and Processes
Instruction in structural inspection, materials and fasteners, and repair methods is taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (120:1 ratio/60 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 112(1) Course ID: 004360
Fluid Systems
Provides instruction in the identification, cause, prevention, removal and treatment of corrosion. Also, includes interior and exterior cleaning of the aircraft. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (75:1 ratio/37 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor.
Components: Lecture Attributes: Technical

AMT 113(1) Course ID: 004361
Aircraft Electrical Systems
Provides instruction in aircraft mechanic privileges and limitations is taught by lecture, demonstrations, worksheets and reading assignments. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (15:1 ratio/7 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 237(1) Course ID: 004376
Turbine Engines
Construction, repair and overhaul of turbine engines is included. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: CPU 150 or CIS 100 or GE 150 or Consent of Instructor
Components: Lecture Attributes: Technical

AMT 238(1) Course ID: 004377
Aircraft Instrument Systems
Check, inspect and troubleshoot the pitot/static system, floating compass system and the gyros used for flight instruments. Discussion of the role of mechanics when working with precision instruments is included. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 239(1) Course ID: 004378
Reciprocating Engine Theory and Operation
Theory and development of the aircraft internal combustion engine as well as instruction in the use of engine construction and repair techniques are covered. Lecture: 0.5 credits (8 contact hours) Lab: 2.5 credits (45:1 ratio/112 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 254(1) Course ID: 004379
Engine Inspection
The operation and inspection of turbine engines is covered. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 274(4) Course ID: 004380
Reciprocating Engine Overhaul
Inspection, testing, servicing and the repair of opposed and radial engines and reciprocating engine installation will be taught by lecture, demonstration, student feedback and participation. Lecture: 2 credits (30 contact hours) Lab: 2 credits (60:1 ratio/120 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 251(1) Course ID: 004381
Engine Fuel System Components
Operation, inspection and repair of fuel systems and components of aircraft fuel systems, by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 253(1) Course ID: 004382
Engine Fuel Metering Systems
Operation, inspection and repair of fuel metering systems are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (75:1 ratio/37 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 255(1) Course ID: 004383
Induction Systems
Inspection, checking, troubleshooting, servicing and repair of engine air and fuel control systems, heat exchangers, superchargers, carburetor air intake and induction manifolds are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (45:1 ratio/22 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 257(1) Course ID: 004384
Engine Cooling Systems
Inspection and repair of engine cooling system components are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 259(1) Course ID: 004385
Engine Exhaust Systems
Inspection and repair of engine exhaust system components are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113.

All AMT courses must be achieved with a grade of C or greater.

Components: Lecture Attributes: Technical

AMT 261(1) Course ID: 004386
Engine Instrument Systems
Troubleshooting, servicing and repair of fluid flow indicating systems and repair of engine temperature, pressure, and r.p.m. indicating systems are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 263(1) Course ID: 004387
Fire Protection Systems
Inspection, checking, servicing, troubleshooting, and repair of engine fire detection and extinguishing systems are taught by reading assignments, worksheets, lecture, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credit (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 265(2) Course ID: 004388
Engine Electrical Systems
Repair of electrical system component systems, and to install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices by lecture, reading assignments, demonstration and practical projects. Lecture: 1 credit (15 contact hours) Lab: 1 credit (60:1 ratio/60 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 267(1) Course ID: 004389
Engine Ignition Systems
Operation and overhaul of magneto and ignition harness; repair of engine ignition system components; and inspect, check, service, troubleshoot, and repair reciprocating and turbine engine ignition systems by lecture, reading assignments, worksheets, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (120:1 ratio/60 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 269(1) Course ID: 004390
Lubrication Systems
Purpose, use, and selection of lubricants; repair engine lubrication system components; and inspect, check, service, troubleshoot and repair engine lubrication systems taught by lecture, reading assignments, worksheets, demonstration and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (150:1 ratio/75 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

ARA 219(3) Course ID: 004701
Principles of Human Anatomy
The structure of the human body will be examined at various levels: cellular, tissues and organs. The gross anatomical arrangement of the body will be studied in a system-by-system format relating structure to function and the fundamentals of human embryology, and various aspects of life processes. The central nervous system will be emphasized. Pre-requisite: Introductory biology or zoology. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: SN - Science

ANT Anthropology

ANT 220(3) Course ID: 004855
Introduction to Anthropology
Introduces the student to the study of human cultures, past and present. Offers a comprehensive introduction to anthropology, emphasizing the concepts and methods of the major sub-fields (e.g., cultural, biological, archaeological, and linguistic). Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: ANA - Anatomy and Neurobiology

ANT 101(3) Course ID: 004855
Introduction to Anthropology
Introduces students to a comparative analysis of world religions, emphasizing beliefs, rituals, artistic expressions, and cultural and social organization. Includes both Eastern and Western religions. Lecture: 1 credit (15 contact hours).
Components: Lecture Attributes: SN - Science

ANT 100(3) Course ID: 000043
Introduction to Comparative Religion
Introduces students to a comparative analysis of world religions, emphasizing beliefs, rituals, artistic expressions, and cultural and social organization. Includes both Eastern and Western religions. Lecture: 1 credit (15 contact hours).
Components: Lecture Attributes: SN - Science

ANT 102(3) Course ID: 002204
Cultural Diversity in the Modern World
Introduces the student to the diversity of human cultural experiences in the contemporary world. Focuses on gaining an appreciation for the common humanity and uniqueness of all cultures; creating sensitivity toward stereotypes, and ethnocentrism, and understanding the distinctions between 'race', ethnicity and racism. Features extended descriptions of the cultural dynamics of the culture(s) with which the instructor has worked. Directed at non-majors.
Components: Lecture Attributes: SN - Science

ANT 220(3) Course ID: 000043
Introduction to Cultural Anthropology
Examines variations in beliefs, behaviors, and institutions of different peoples. Acquaints the student with knowledge of how anthropological concepts and knowledge are used to understand and appreciate cultural diversity. Pre-requisite: ACT, COMPASS, or ASSET level reading OR completion of developmental reading courses.
Components: Lecture Attributes: SN - Science

ANA Anatomy and Neurobiology

ANA 212(3) Course ID: 002196
Native People of North America
Surveys the aboriginal Native American cultures of North America, and of the impact of four centuries of British, French, Spanish and Russian contact on the Indian communities. Consider the status of Native Americans in present-day North America. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: SN - Science
Course Descriptions

APT 223(3) Course ID: 007065
Culture Change and Globalization
Introduces the historical development of anthropology, its role in colonialism and globalization, and types of cultural change processes. Includes discussions of how human societies have struggled for political and economic identity in a post-colonial world and for cultural survival and self-determination. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading or completion of developmental reading courses. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture
Attributes: Other

APT 235(3) Course ID: 002205
Food and Culture
Examines the way values and behaviors related to food production and consumption are shaped by the physical and cultural environment. Draws data from non-Western and Western cultures. Discusses implications of cultural factors for contemporary issues in nutrition. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading or completion of developmental reading courses. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture
Attributes: Other

 ANT 241(3) Course ID: 000045
Origins of Old World Civilization
Surveys cultural developments in the Old World from the earliest times to the beginning stages of civilization. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

 ANT 242(3) Course ID: 000046
Origins of New World Civilization
Surveys the origin and growth of prehistoric Native American cultures as revealed by archaeological data. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

APS Apprenticeship Studies

APS 201(20 - 40) Course ID: 000048
Apprenticeship Studies
Complements specialized study in a national or state approved apprentice curriculum (i.e. 2000 hours per year on the job in a supervised work environment) and 144 hours per year of related classroom instruction. Pre-requisites: Completion of national/state certified apprenticeship program. Lecture/Lab: 20-40 credit hours (144 contact hours).
Components: Lecture
Attributes: Technical

/apt 102(4) Course ID: 004540
Process Fundamentals
Presents fundamental knowledge necessary for process operations. Develops an understanding of the basic principles of process operations. Covers the fundamental areas of physics, chemistry, and mathematics necessary to understand their complex relationship in industry. Includes topics on fluid behavior, fluid in motion, piping and valves, and the laws and nature of heat. Pre-requisite: Test at MAT126 eligible or MAT 065 or Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

/apt 104(3) Course ID: 004537
Rotating and Reciprocating Equipment
Presents fundamental knowledge necessary for process operations and entry-level maintenance personnel. Develops an understanding of mechanical energy and the way it is put to use in industrial applications. Covers various forms of energy and how this energy can be converted to perform work. Includes topics on operating instructions, basic troubleshooting skills, and basic maintenance skills typically performed by personnel on pumps, compressors, and prime movers. Pre-requisite: Test at MAT126 eligible or MAT 065 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Laboratory: 2.0 credits (120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

/apt 106(2) Course ID: 004538
Process Chemistry
Presents fundamental knowledge of chemistry necessary for process operations. Focuses on the basics of chemistry as they apply to water treatment and hydrocarbon processing. Includes, but are not limited to: basic chemical terminology, molecular formulas, structural formulas, common chemical symbols, and the chemical nature of the operator's job, work environment, and products. Pre-requisite: Test at MAT126 eligible or MAT 065 or Consent of Instructor. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

/apt 108(2) Course ID: 004539
Stationary Equipment
Presents fundamental knowledge in the operation and troubleshooting of stationary equipment. Provides a solid foundation on which to build sound maintenance and operations programs. Covers common equipment designs, operating instructions, troubleshooting aids to help identify malfunctions, guides to handling emergency situations and routine scheduled maintenance tasks. Includes topics on heat exchangers, heat transfer, cooling towers, and refrigeration. Pre-requisite: Test at MAT126 eligible or MAT 065 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

/apt 142(4) Course ID: 004541
Instrumentation
Develops an understanding of how to control and operate control processes. Involves work on real life simulators to insure an understanding of process operations has been achieved. Includes measurement fundamentals and control strategies as applied to unit operations, industrial chemical operations, and operating tactics and strategies. Provides basic instruction in process control instrumentation as it relates to the manufacturing operations and will promote smoother, more efficient control of automated systems. Pre-requisite: APT 108 with a grade of "C" or greater OR Instructor Consent. Lecture/Lab: 4.0 credits (105 contact hours).
Components: Lecture
Attributes: Technical

/apt 144(4) Course ID: 004542
Process Operations
Develops an understanding of modern processing techniques, practical examples of normal and abnormal operating situations, and advanced training in enhancing productivity while cutting operating costs. Provides maintenance personnel and technicians an understanding of the overall process and their roles in maintaining efficient production rates. Involves work on real life simulators to insure an understanding of process operations. Includes unit operations, industrial chemical operations, and a variety of equipment used in industrial processes. Pre-requisite: APT 108 with a grade of C or greater or Permission of Instructor. Lecture: 2 credits (30 contact hours). Laboratory: 2 credits (120 contact hours/0.1 ratio).
Components: Laboratory, Lecture
Attributes: Technical

/apt 145(2) Course ID: 004543
Process Applications
Develops an understanding of how to control and operate processes. Involves work on real life simulators to insure an understanding of process operations. Includes a study of interactive control strategies in unit operations, industrial chemical operations, and compressor operations and applications. Pre-requisite: APT 108 with a grade of C or greater or Permission of Instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

/apt 148(2) Course ID: 004544
Process Operation Safety
Develops an understanding of how to safely start-up, shutdown, control and operate industrial processes. Includes safe operating tactics and strategies, and procedures as they apply to unit operations and industrial chemical operations. Pre-requisite: APT 108 with a grade of C or greater or Permission of Instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

/apt 154(6) Course ID: 005336
Power Plant Practice
Develops an understanding of power plant basics, systems, and equipment and how they are utilized to safely start-up, shutdown, control, and operate a power generation unit. Includes safe operating tactics, strategies, and procedures as they apply to normal and abnormal unit operations. Applies various safety and protection equipment and procedures to unit operations. Pre-requisite: APT 108 with a grade of C or greater. Lecture: 4 credits (60 contact hours). Laboratory: 2 credits (120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

/apt 158(3) Course ID: 005510
Lineman Technology I
Trains the student in the use of and/or assembly of materials, tools, and equipment common to the electric utility industry. Provides an overview of the energy delivery system, personal responsibility in regard to safety and job requirements, qualifies the student to climb poles, and trains the student to perform tasks typically required of entry-level apprentices. Pre-requisite: APT 108 or Consent of Instructor. Co-requisite: APT 159, EET 150, EET 151. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

/apt 159(4) Course ID: 005511
Lineman Technology I Lab
Provides hands on experience in the use of and/or assembly of materials, tools, and equipment common to the electric utility industry. Provides an opportunity for the student to climb poles and perform tasks typically required of entry-level apprentices. Pre-requisite: APT 108 or Consent of Instructor. Co-requisite: APT 158, EET 150, EET 151. Laboratory: 4 credits (240 contact hours).
Components: Laboratory
Attributes: Technical
APT 202(3) Course ID: 004545
Federally Mandated Training
Provides a fundamental knowledge of OSHA, EPA and DOT regulations as concerned with hazardous waste generators and the fundamental knowledge necessary for process operations to qualify for hazardous response to incidents. Covers the required skills to qualify them for HAZWOPER Operations level response. Includes, but are not limited to: Hazcom, HAZWOPER Operations level, personal protective equipment, working at elevated heights, respirators, SCBAs, and specific hazardous materials. Pre-requisite: Consent of Instructor. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

APT 290(1 - 6) Course ID: 001039
Instructor Consent Required
Cooperative Education Program
For students approaching the major career transition from college to work as a co-op student. Provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Co-op Education program receive compensation for their work. Pre-requisite: Consent of Instructor. Co-Op: 1 - 6 credits (75-450 contact hours).
Components: Co-Op
Attributes: Technical

ART 103(3) Course ID: 003861
Developmental Writing
This course is designed to assist students who have demonstrated specific needs in the area of writing. Students are provided individualized or small group instruction. This course includes, but is not limited to, reviewing punctuation skills, reviewing grammar skills, and/or writing short paragraphs. This course may be repeated one time. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: Remedial - English

ART 100(5) Course ID: 000049
Introduction to Art
Provides a basic overview of the study, language, history and cultural relevance of visual art and is designed primarily for non-art majors. Utilizes visually-enhanced lectures and may include optional introductory studio experiences. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: Remedial - Mathematics

ART 108(3) Course ID: 007380
Introduction to World Art
Provides a basic overview of the study, language, history and relevance of the visual art from world cultures and designed primarily for non-art majors. Utilizes visually-enhanced lectures and may include optional introductory visual experiences. Pre-requisite: RDG 185, ENC 091. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

ART 110(3) Course ID: 004110
Drawing I
Introduction to basic drawing skills and concepts. Projects in line, value, space and composition are among the topics that will be explored in a variety of media. Lecture/Lab: 3 credits (90 contact hours)
Components: Lecture
Attributes: Other

ART 112(3) Course ID: 004111
2-Dimensional Design
Investigates design principles of balance, unity and variety, emphasis, and rhythm, and their application to the elements of art, including line, shape, value and color. Uses a variety of media. Lecture/Lab: 3 credits (90 contact hours)
Components: Lecture
Attributes: Other

ART 113(3) Course ID: 004112
3-Dimensional Design
Investigates three-dimensional form and spatial design, including line, plane, mass, surface and structure. Includes the study of various materials, tools, and sculptural techniques. Lecture/Lab: 3 credits (90 contact hours)
Components: Lecture
Attributes: Other

ART 121(3) Course ID: 004015
School Art
Introduction to art and to the teaching of art in the lower (1-3) elementary grades.
Components: Laboratory, Lecture

ART 201(3) Course ID: 000621
Ancient Art History
Examines the art and architecture of the ancient Mediterranean, focusing on one or more of the cultures of Greece, Rome, Egypt, and the Near East. Pre-requisite: (English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s)) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities

ART 203(3) Course ID: 000457
Medieval Art History
Examines the architecture, sculpture, painting, and related arts from the rise of Christianity to the beginnings of the Renaissance. Pre-requisite: (English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s)) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities

ART 205(3) Course ID: 000186
Renaissance Art History
Examines the art in Europe from the 14th to 18th centuries, with emphasis on the major styles, artists, and developments from the early Renaissance through the age of the Baroque. Pre-requisite: (English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s)) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities
ART 204(3) Course ID: 000086
Modern Art History
Examines the visual arts from the 18th through the 20th centuries, with primary emphasis on Europe and the United States. Pre-requisite: (English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities
ART 205(3) Course ID: 015848
African American Art
Provides an introduction to African American Art. Examines the creation of the painting, sculpture, graphic arts, photography, and performance art from the early settlements of the United States to the present. Pre-requisite: Current placement scores for college level-reading established by KCTCS, or completion of RDG 030 or RDG185, and ENC 091. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities
ART 208(3) Course ID: 000017
Introduction to Art Education
Investigates the theoretical, historical, psychological, and sociological foundations of art education in a lecture-lab format. Provides a critical examination of individual and group activities currently offered in the elementary school art program and includes lectures, curriculum design, evaluation of processes and techniques. Exploration and analysis of design, media, and concepts, with special attention to classroom application. ART 208 satisfies the state art requirement for general elementary teacher requirement certification (4 hours of field work required). Lecture: 1 hour; Laboratory: 2 hours.
Components: Laboratory, Lecture
Attributes: Other
ART 210(3) Course ID: 004114
Drawing II
Advanced studio investigation of drawing techniques and concepts. Projects in line, value, composition and space will be investigated through individual development of style and expression, with extensive use of figure models. Pre-requisite: ART 110. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 211(3) Course ID: 004113
Life Drawing
Introduces basic life drawing skills and concepts. Explores topics such as projects in line, value, space, and composition in a variety of media with the human form as the subject matter. Includes drawings in class from a nude human model. Pre-requisite: ART 110. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 220(3) Course ID: 004115
Painting I
Studio investigation of the technical and formal concerns of painting, including an understanding of color theory, materials, paint application, and image making. Pre-requisite: ART 110 or Consent of Instructor. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 221(3) Course ID: 004116
Painting II
Includes advanced studio investigation of the technical and formal concerns of painting. Continues the development of individual style and expression. Pre-requisite: ART 220. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 231(3) Course ID: 007075
Jewelry/Metals I
Introduces the aesthetic and technical issues relating to basic metalsmithing techniques such as sawing, filing, piercing, forging, forming, soldering, and finishing. Emphasis is on demonstrations and hands-on work to present the concepts of metal manipulation. Emphasizes instructor-led critiques. Provides an introduction to historical and contemporary metal work. Lecture/Lab: 3.0 credit (90 contact hours).
Components: Lecture
ART 232(3) Course ID: 007076
Jewelry/Metals II
Continues the development of techniques introduced in Jewelry/Metals I. Emphasizes problem-solving skills and the development of personal creativity. Stresses the aesthetic and technical issues relating to raising, enameling, forging, casting, and more advanced sculptural processes. Includes discussion and critique as integral parts of the coursework. Pre-requisite: ART 231 or Consent of Instructor. Lecture/Lab: 3.0 credit hours (90 contact hours).
Components: Lecture
ART 240(3) Course ID: 004117
Ceramics I
Introduces a variety of forming and finishing techniques used in working with clay and glaze. Hand building, wheel throwing, surface alteration and glazing will be investigated, along with a brief overview of ceramic history, aesthetics and studio safety. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 241(3) Course ID: 004118
Ceramics II
Continues studio investigation of ceramic techniques in hand-building and/or wheel throwing, glazing, surface decoration, glazing and firing. Continued development of individual style and personal expression. Pre-requisite: ART 240. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 251(3) Course ID: 016141
Graphic Communication I
Provides an introduction to graphic design principles and methods and techniques used to incorporate type and image. Applies the elements and principles of design and basic color theories for design concepts. Pre-requisite or Co-requisite: ART 110 & ART 112, OR consent of instructor. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 252(3) Course ID: 016142
Typography
Introduces core principles of typographic through a series of progressively complex studio assignments supported by readings, lectures, and software tutorials. Pre-requisite: ART 250 OR consent of instructor. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 253(3) Course ID: 016143
Graphic Communication II
Expands proficiency in all aspects of the design process by continuing the development of graphic design principles, methods, and techniques introduced in Graphic Communication I. Incorporates industry-standard page layout, illustration, and image editing software. Includes discussion and critique as integral parts of the coursework. Pre-requisite: ART 251 OR consent of instructor. Lab/ Lecture: 3.0 credit hours (90 contact hours).
Components: Lecture
Attributes: Other
ART 254(3) Course ID: 016144
Design Process and Presentation
Continues investigation of design principles, process, vocabulary, methods, and presentation. Transitions from theoretical to applied problems with a focus on portfolio preparation and professionalism in communication. Pre-requisite: ART 251 OR consent of instructor. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
ART 260(3) Course ID: 004119
Sculpture I
Studio investigation of the technical and formal concerns of three-dimensional expression. Basic sculptural methods of modeling, casting, carving and assembling will be explored in a variety of media. Pre-requisite: ART 110, ART110. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 261(3) Course ID: 006207
Sculpture II
Continues the development of sculptural techniques started in Sculpture I. Exploration of subject matter and personal creativity will be emphasized. Students will develop and utilize problem solving skills. Pre-requisite: ART 260 or consent of instructor. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 270(3) Course ID: 006208
Printmaking
Introduces the possibilities and potential of the printmaking media for generating fine art ideas and images. Explores traditional and contemporary printmaking processes of monotype and monoprint, relief, lithography, intaglio, and stencil. Covers black and white and multiple color printing methods. Introduces printmaking vocabulary and aesthetics. Pre-requisite: (ART 110 and ART 120) or consent of instructor. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 271(3) Course ID: 006209
Printmaking II
Explores concepts and techniques in intaglio, lithography, screen-print and/or relief printing with an introduction to contemporary computer/digital aided printmaking processes. Stresses individual expression by creating original imagery while continuing to learn about printmaking as a process. Emphasizes two-dimensional design and color theory concepts and drawing skills. Pre-requisite: ART 270 or permission of instructor. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 280(3) Course ID: 006210
Beginning Film Photography
Introduces black and white film photographic processes including the use of a camera and the darkroom. Stresses technical and compositional aspects of photography as an art medium. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 281(3) Course ID: 006211
Digital Photography I
Introduction to the skills, techniques and applications needed to create and manipulate digital photographs and to develop an understanding of photography as a fine art medium. Instruction will include the use of the digital camera and its controls to compose and capture photographs, scanning, printing and using Adobe Photoshop as a “digital darkroom”. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 282(3) Course ID: 006212
Digital Photography II
Emphasizes the creation of fine art photographs that reflect the intent and vision of the photographer. Stresses the technical and aesthetic issues relating to image capture, manipulation, printing and presentation. Explores visual and conceptual skills, professional workflow and photographic history. Pre-requisite: ART 281 or permission of instructor. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Other
ART 290(3)  Course ID: 006213  Survival Skills for Artists
Introduces skills needed to attain a higher level of education and/or a career in the visual arts. Explores the wording and formatting of credentials and statements. Covers the critical language of art, digital and printed portfolios, exhibiting artwork, marketing, career opportunities, the hazards of art materials and setting up an art studio. Pre-requisite: 9 credits of ART 100 / 200 level classes or permission of instructor. Lecture: 2 credits (30 contact hours), Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture

ART 299 (1-3)  Course ID: 006214  Instructor Consent Required
Directed Studies in Art: (Topic) Provides an opportunity to cover topics outside the normal range of studio classes or further investigation of topics and techniques covered in studio classes. Pre-requisite: Consent of instructor. Laboratory: 1-3 credits (30-90 contact hours).
Components: Laboratory
Attributes: Other

ART 1001(1)  Course ID: 007381  Art Theory and Design
Provides a basic overview of art theory, philosophy, elements, and principles of design. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

ART 1002(1)  Course ID: 007382  Art Media and Critique
Introduces students to different forms of art, the media to create art, and the analysis and critique of art using terminology and vocabulary specific to the visual arts. Pre-requisite: ART 1001. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

ART 1003(1)  Course ID: 007383  Introduction to Art History
Introduces students to the developments in art from the prehistoric through contemporary eras. Pre-requisite: 1001. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

ASC Animal Sciences
ASC 106(3)  Course ID: 000056  Agricultural Animal Science
Relationships of food production and consumption to income of humans throughout the world; major livestock (beef and dairy cattle, sheep, swine, poultry, and horses) production areas of the world; relationships between live animal merit and yield of retail cuts of meat; identification of skeletal components; identification and functions of reproductive and digestive tract components; characteristics of breeds of beef and dairy cattle, sheep, swine, poultry, and horses. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: Other

ASL American Sign Language
ASL 101(3)  Course ID: 005753  American Sign Language I
A functional-notional approach to learning beginning American Sign Language (ASL). Development of basic knowledge of and understanding of conversational ASL and cultural features of the language and community. Lecture: 3 credits (45 contact hours), Laboratory: 0 credits (15 contact hours).
Components: Laboratory, Lecture
Attributes: University Course (Eastern Kentucky University), Foreign Language

ASL 102(3)  Course ID: 005754  American Sign Language II
Continued development of basic knowledge of and understanding of conversational ASL and cultural features of the language and community. Pre-requisite: ASL 101 with a minimum grade of C or permission of instructor.
Lecture: 3 credits (45 contact hours), Laboratory: 0 credit (15 contact hours).
Components: Laboratory, Lecture
Attributes: University Course (Eastern Kentucky University), Foreign Language

AST Astronomy
AST 101(3)  Course ID: 000058  Frontiers of Astronomy
Covers the life histories of stars, the nature of black holes and quasars, the origin of the universe, planets of the solar system, and the possibilities for extraterrestrial life. Includes observation-based activities. A one-semester introductory course for non-science majors. Credit is not given to students who have received credit for AST 191 or AST 192. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science

AST 155(3)  Course ID: 006341  Astrobiology
Examines topics related to the origins of planets, the requirements for life, the search for life away from Earth, the societal implications of discovering other forms of life, and the future of life on Earth and in space from a multidisciplinary perspective. Credit not available for both BIO 155 and AST 155. Pre-requisite: MT005 and ENC091or equivalent as determined by KCTCS placement examination. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: BIO 155
Attributes: SN - Science

AST 191(3)  Course ID: 000060  The Solar System
Emphasizes the nature, origin, and evolution of planets, satellites, and other objects in the Solar System. Includes historical astronomy, the naked eye phenomena of the sky, and modern solar system discoveries made by spacecraft. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science

AST 192(3)  Course ID: 000062  Stars, Galaxies and the Universe
Emphasizes the Sun and the universe outside the Solar System. Has a principal theme of the origin and evolution of stars, galaxies and the universe at large. Includes topics of black holes, quasars, and the big bang model of the universe. Pre-requisite: (MT120 or MT122 ) or a minimum ACT math score of 18. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science

AST 195(1)  Course ID: 000065  Introductory Astronomy Laboratory
Involves performance of exercises in both planerar and stellar astronomy, including Kepler’s Laws of Planetary Motion and Newton’s Laws of Motion. Examines the functions and limitations of different types of telescopes and mounts. Includes observation of the sun, moon, planets, binaries, galaxies, and nebulae. Pre-requisite or Co-requisite: AST101 or AST191 or AST192; MT 120 or two years of high school algebra; or consent of the instructor.
Components: Laboratory
Attributes: SL - Science Laboratory

ATE Aviation/Airway Management
ATE 100(1)  Course ID: 007113  Aviation Math
Covers mathematics related to the aerodynamic and physical forces acting on an aircraft in flight. Pre-requisite: Computer Literacy or Consent of Instructor. Lecture/Lab: 1.0 credit (45 contact hours).
Components: Lecture
Attributes: Technical

ATE 102(3)  Course ID: 007114  Introduction to Aircraft Maintenance I
Teaches knowledge and skills necessary in measuring, calculating, and documenting aircraft weight and balance. Provides instruction in the identification, cause, prevention, removal and treatment of corrosion. Includes interior and exterior cleaning of the aircraft. Pre-requisite: Computer Literacy or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).
Components: Lecture
Attributes: Technical

ATE 104(3)  Course ID: 007115  Introduction to Aircraft Maintenance II
Provides instruction on the aerodynamic and physical forces acting on an aircraft in flight, basic electricity theory, concepts, components, physics, meter operation and use, battery construction and servicing, and basic principles of physics as related to aviation maintenance. Pre-requisite: Computer Literacy or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).
Components: Lecture
Attributes: Technical

ATE 106(3)  Course ID: 007116  Introduction to Aircraft Maintenance III
Provides instruction in reading and interpretation of basic industrial and aircraft blue prints, basic hand tools and ground service techniques of the aircraft, the use of maintenance publications, aircraft mechanic privileges and limitations, and the use and completion of required forms and records. Pre-requisite: Computer Literacy or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).
Components: Lecture
Attributes: Technical

ATE 202(3)  Course ID: 007118  Aircraft Structures I
Covers the principles of sheet metal layout, bending, and rivet installation. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).
Components: Lecture
Attributes: Technical

ATE 204(3)  Course ID: 007119  Aircraft Structures II
Provides instruction in the inspection, service and repair of welded aircraft assemblies and structures, metal and composite aircraft structures, including laminated and honeycomb structures, plastic materials, interior furnishings and access openings. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/ Lab: 3.0 credits (96 contact hours)
Components: Lecture
Attributes: Technical
Components: Lecture
Attributes: Technical

ATE 206(3) Course ID: 007120
Aircraft Structures III
Includes inspection of airframes to determine airworthiness. Covers the methods and techniques used in the assembly of subunits and major components of the airframe, and the rigging of primary, secondary and auxiliary control surfaces. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 208(3) Course ID: 007121
Aircraft Structures IV
Provides instruction in the repair of wood structures, the inspection, testing, repair, selection, and installation of aircraft fabric covering; and the identification, application and inspection of aircraft finishing materials. Pre-requisite: ((ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 222(3) Course ID: 007122
Aircraft Systems I
Covers the repair of hydraulic and pneumatic power systems components. Includes the inspection, check, service, and repair of landing gear, retraction systems, shock struts, brakes, wheels, tires, and steering system. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 224(3) Course ID: 007123
Aircraft Systems II
Covers inspection, checking, troubleshooting and repair of aircraft electrical system and system components. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 226(3) Course ID: 007124
Aircraft Systems III
Covers checking, inspection, servicing, repair and troubleshooting of fuel systems and components, heating, cooling, air conditioning, pressurization, and oxygen systems; and the inspection and repair of engine components. Covers various types of fuels used in various aircraft and a discussion of the problems associated with fueling and fuel systems. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 228(3) Course ID: 007125
Aircraft Systems IV
Includes inspection, selection, inspection of navigational and communication systems, fire detection and extinguishing systems. Covers the inspection, troubleshooting and repair of heading, speed, altitude, time, attitude, temperature, pressure and position indicating systems and installation of instruments. Provides for the inspection, checking and servicing of speed and take-off warning systems, electrical brake controls, antiskid systems, and autopilot systems; and the pitot-static system, floating compass system and the gyros used for flight instruments. Includes the role of mechanics when working with precision instruments. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 242(3) Course ID: 007126
Aircraft Powerplants I
Covers theory and development of the aircraft internal combustion engine as well as instruction in the use of engine construction and repair. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 244(3) Course ID: 007127
Aircraft Powerplants II
Covers inspection, checking, servicing and the repair of opposed and radial engines and reciprocating engine installation. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 246(3) Course ID: 007128
Aircraft Powerplants III
Includes construction, repair and overhaul of turbine engines. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 252(3) Course ID: 007130
Aircraft Powerplants System I
Includes the purpose, use, and selection of lubricants; repair of engine lubrication system components; and the inspection, checking, servicing, troubleshooting and repairing of engine lubrication systems, propeller synchronizing and ice control systems, fixed-pitch, constant-speed, and feathering propellers, and propeller governing systems. Provides for the identification and selection of propeller lubricants, balance propellers, and repair of propeller control system components. Covers the installation, troubleshooting and the removal of propellers. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 254(3) Course ID: 007131
Aircraft Powerplants System II
Covers troubleshooting, servicing and repair of fluid flow indicating systems and repair of engine temperature, pressure, and rpm indicating systems. Includes the operation and overhaul of magnetos and ignition harness; repair of engine ignition system components; and the inspection, check, service, troubleshooting, and repair of reciprocating and turbine engine ignition systems. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 256(3) Course ID: 007132
Aircraft Powerplants System III
Includes the inspection, checking, troubleshooting, servicing and repair of engine ice and rain control systems, heat exchangers, supercharger, carburetor air intake and induction manifolds. Covers the repair of engine electrical system components, and the maintenance, checking, and servicing of engine electrical wiring, controls, switches, indicators, and protective devices. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 258(3) Course ID: 007133
Aircraft Powerplant Systems IV
Covers the operation, inspection and repair of fuel systems and components of aircraft fuel systems and fuel metering systems. Includes the inspection and repair of engine cooling system components, engine exhaust system components, and engine fire detection and extinguishing systems. Pre-requisite: (ATE 100 and ATE 102 and ATE 104 and ATE 106 and ATE 108) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 3.0 credits (96 contact hours).

Components: Lecture
Attributes: Technical

ATE 292(3) Course ID: 006783
Introduction to Aviation Electronics
Provides instruction in basic to intermediate electronics and specifically how they relate to aviation maintenance technology. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Pilot Course, Technical

ATE 293(3) Course ID: 006784
GROL+Radar Exam Prep
Provides instruction and preparation for the FCC General Radio Operators License and Radar endorsement exams. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Pilot Course, Technical

ATE 298(1 - 6) Instructor Consent Required
Selected Topics in Aviation Maintenance Technology: (Topic)
Various aviation maintenance topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of six credit hours. Lecture: varies. Laboratory: varies. Pre-requisite: Consent of Instructor.

Components: Laboratory, Lecture
Attributes: Technical

AUT Automotive Technology

AUT 110(3) Course ID: 001050
Brake Systems
Involves the operational theory and application of hydraulic and anti-lock brake systems; discusses disc and drum brakes. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

AUT 111(2) Course ID: 001051
Brake Systems Lab
Develops skills in the diagnosis and repair of hydraulic and anti-lock brake systems, covering both disc and drum type braking systems. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or co-requisite: AUT 110. Lab: 2.0 credits (90 contact hours).

Components: Laboratory
Attributes: Technical

AUT 130(3) Course ID: 001052
Manual Drive Train and Axles
Involves an in-depth study of principles of operation, construction, and service of manual transmissions and related drive train components (differentials, clutches, u-joints, rear wheel drive and 4-wheel drive). Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical
AUT 131(2)  Course ID: 001053
Manual Drive Train and Axles Lab
Develop skills in the diagnosis and repair of manual transmissions and related drive train components (differentials, clutches, u-joints, rear wheel drive, and 4-wheel drive). The student may be provided a work experience alternating between periods of off campus work and in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 130. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 140(3)  Course ID: 001054
Basic Fuel and Ignition Systems Lab
Includes the theory, component identification, application, operation, service and repair of the basic automotive ignition, fuel, and emission systems, including related components. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AUT 141(2)  Course ID: 001055
Basic Fuel and Ignition Systems Lab
Provides skills necessary to diagnose and repair the automotive basic ignition, fuel, and emission systems and related components are developed. The student may be provided a unique work experience alternating between periods of work on-site and work in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 140. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 142(3)  Course ID: 001056
Emission Systems Lab
Introduces the theory, component identification, application, operation, service and repair of advanced automotive ignition, fuel, and emission systems, including related components. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AUT 143(2)  Course ID: 001057
Emission Systems Lab
Introduces skills necessary to diagnose, service and repair automotive advanced ignition, fuel, and emission systems, including related components are developed. The student may be provided a work-study experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 142. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 160(3)  Course ID: 001058
Suspension and Steering
Presents the automotive suspension system, the diagnosing of suspension problems, identifying components, recognizing tire wear problems, wheel balancing and the use of alignment. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AUT 161(2)  Course ID: 001059
Suspension and Steering Lab
Introduces skills necessary in the diagnosis and repair of automotive suspension systems, wheel alignment, and wheel balancing. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 160. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 181(2)  Course ID: 001061
Automatic Transmission/Transaxle Lab
Develops diagnostic and repair skills related to the operation of rear and front wheel automatic transmissions and transaxles. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 180. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 198(1)  Course ID: 001062
Instructor Consent Required
Practicum
The Practicum provides supervised on-the-job work experience related to the student's educational objectives. Students who participate in the practicum do not receive compensation. Pre-requisite: Permission of the Instructor
Components: Practicum
Attributes: Technical

AUT 240(3)  Course ID: 001064
Computer Control Systems and Diagnosis
Presents the comprehensive diagnostics of on-board computer control systems, including distributorless ignition systems. Presents the problem solving process including flowchart reading. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AUT 241(2)  Course ID: 001065
Computer Control Systems and Diagnosis Lab
Introduces the skills necessary to diagnose and repair drivability problems associated with on-board computer control systems. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite or Co-requisite: AUT 240. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 275(5)  Course ID: 006889
Hybrid and Electric Vehicle Technology
Focuses on the theories, principles, and diagnosis relating to hybrid automobiles. Pre-requisite: ADX 120 and ADX 121 and ADX 150 and ADX 151 and AUT 140 and AUT 141 and AUT 142 and AUT 143. Co-requisite: AUT 276. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AUT 276(2)  Course ID: 006890
Hybrid and Electric Vehicle Technology Lab
Focuses on the theories, principles, and diagnosis relating to hybrid automobiles. Pre-requisite: ADX 120/121, ADX 150/151, AUT 140/141, AUT 142/143. Co-requisite: AUT 275. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

AUT 290(1)  Course ID: 001066
Instructor Consent Required
Special Problems I
A course designed for the student who has demonstrated specific needs for additional training. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite: Permission of Instructor.
Components: Laboratory
Attributes: Technical

AUT 291(2)  Course ID: 001067
Instructor Consent Required
Special Problems II
A course designed for the student who has demonstrated specific needs for additional training. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite: Permission of Instructor.
Components: Laboratory
Attributes: Technical

AUT 292(3)  Course ID: 001068
Instructor Consent Required
Special Problems III
A course designed for the student who has demonstrated specific needs for additional training. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Pre-requisite: Permission of Instructor.
Components: Laboratory
Attributes: Technical

BAM 100(6)  Course ID: 001071
Introduction to Building & Apartment Maintenance
This course covers required safety practices in the shop and workplace; identification and use of hand tools used in the construction trades; identification of construction materials; interpretation of blueprints and/or drawings; and exposure to various mechanical and structural systems in a residential structure.
Components: Lecture
Attributes: Technical

BAM 110(3)  Course ID: 001072
Residential Maintenance Carpentry
This course covers the basic aspects of framing, roofing, window, door, and stair maintenance. The student will receive training in the proper use of ladders and in the handling and storage of building materials. Pre-requisite: BAM 100
Components: Lecture
Attributes: Technical

BAM 120(3)  Course ID: 001074
Residential Interior Maintenance
This course covers the basic aspects of drywall hanging, finishing, and repair; painting; window, door, and floor moldings; laying composition and vinyl flooring; and maintaining ceramic tile. Pre-requisite: BAM 100
Components: Lecture
Attributes: Technical

BAM 140(3)  Course ID: 001078
Residential Maintenance Wiring
This course covers the basic aspects of electric theory, wire and cables, fixtures and devices, and troubleshooting and maintenance wiring. Pre-requisite: BAM 100
Components: Lecture
Attributes: Technical
### Course Descriptions

**BAS 120(3) Course ID: 000095**  
**Personal Finance**  
Provides information needed to make intelligent choices and to take effective action in the management of personal resources. Applies financial planning, buying, borrowing, saving, budgeting, investing, insurance, and taxes to personal finances. Pre-requisite: Completion of or concurrent enrollment in MAT 65 or higher level math or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 155(3) Course ID: 000100**  
**Personal Selling**  
Introduces the professional selling process involving a series of interrelated activities with emphasis on planning and delivery of sales presentations and simulation and role playing of sales techniques. Examines the six selling steps including—prospecting, qualifying, presenting, answering objections, closing, and the after-sale service. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  
**BAS 160(3) Course ID: 000101**  
**Introduction to Business**  
Introduces business careers, terminology, and the interrelationships of business topics. Presents the complexities of business and the impact on communities and their economies. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 170(3) Course ID: 005244**  
**Entrepreneurship**  
Prepares students to translate a concept into a viable business and to create a business plan for practical business decisions. Demonstrates use of entrepreneurship skills to identify and develop the supervisor’s role and responsibilities. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 200(3) Course ID: 000104**  
**Small Business Management**  
Introduces the facets of establishing and operating and/or owning a small business, including legal forms of business organization, finance, accounting, insurance, governmental regulations and assistance, economics, marketing, and management principles. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
**Course Equivalents: MGT 200** Attributes: Course Also Offered in Modules, Technical

**BAS 212(3) Course ID: 000105**  
**Introduction to Financial Management**  
Introduces the basic concepts of managing financial resources and techniques of financial analysis used for practical business decisions. Demonstrates use of financial ratios to evaluate the past performance of the firm, financial planning techniques, the effect of leverage on profitability and risk, the time value of money, and contemporary approaches to working capital management and capital budgeting. Computes financial ratios, constructs pro forma financial statements, conducts break-even analysis, and computes present and future values of funds. Pre-requisite: MAT 105 or MAT 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 250(1) Course ID: 000106**  
**Business Employability Seminar**  
Creates an error-free portfolio of business employment documents, using computer technology to assist with composition, proofreading, and formatting. Demonstrate proper interviewing skills through mock interviews. Course is offered on a Pass/Fail basis. Pre-requisite: (CIT 105 Introduction to Computers, Sophomore Standing, and Business Administration Program Students only) or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture  
Attributes: Technical

**BAS 256(3) Course ID: 002280**  
**International Business**  
Identifies the business and managerial processes in a global context. Examines the importance and impact of the economic, cultural, and political environment on business functions. Determines the effect of management functions as they apply across various cultures. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules

**BAS 260(2) Course ID: 004432**  
**Professional Development and Protocol**  
Prepares students approaching the major career transition from college to work either as a graduating student or as a cooperative education student. Focuses on acceptable business protocol and how to project a professional image. Pre-requisite: BAS 250 or Consent of Instructor. Lecture: 2.0 credits (30 contact hours).  
Components: Lecture  
Attributes: Technical

**BAS 267(3) Course ID: 000107**  
**Introduction to Business Law**  
Introduces the state and federal court systems, tort and criminal law, law of contracts, partnership, sale of goods, government regulations, bailment, negotiable instruments, methods of research, and the judicial system (discovery, trial, and appellate processes). Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules

**BAS 274(3) Course ID: 000108**  
**Human Resource Management**  
Examines the function of human resource management and practices of operations management. Introduces and emphasizes human relations skills while recognizing the behavioral factors of individuals and groups in the work environment. Applies conceptual knowledge base and skills to identify and develop the supervisor’s role and responsibilities. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

**BAS 280(1 - 4) Course ID: 004474**  
**Business Internship**  
Provides an opportunity for a work experience related to the student’s educational objective and concepts learned in courses required for credential. (One hour of credit, up to a maximum of four credit hours, awarded for every 40 hours of approved work experience, not to exceed 160 hours). Pre-requisite: Sophomore Standing or Consent of Instructor. Practicum/Internship: 1.0 - 4.0 credits  
Components: Practicum  
Attributes: Technical

**BAS 282(3) Course ID: 000112**  
**Applied Management Skills**  
Examines management theories and techniques with emphasis on the action-skills that managers need for success. Examination of various course topics in this capstone course include: delegating, motivating employees, team building, conflict management, coaching, and managing change. Pre-requisite: (BAS 160 and BAS 283) or prior supervisory experience. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 283(3) Course ID: 000113**  
**Problems in Marketing and Management**  
Examines the business leadership-government-society relationship. Includes business leadership, ethics, decision-making, social costs, corporate responsibility, governance, global trends and the role of government in business. Pre-requisite: BAS 283 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 284(3) Course ID: 000112**  
**Problems in Marketing and Management**  
Examines the business leadership-government-society relationship. Includes business leadership, ethics, decision-making, social costs, corporate responsibility, governance, global trends and the role of government in business. Pre-requisite: BAS 283 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 286(3) Course ID: 000109**  
**Principles of Marketing**  
Examines marketing concepts as they apply to various types of business organizations with attention to the marketing concept, including the marketing mix of product, price, promotion, and distribution decisions; international marketing; and social responsibility. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 287(3) Course ID: 000108**  
**Introduction to Business Law**  
Introduces the state and federal court systems, tort and criminal law, law of contracts, partnership, sale of goods, government regulations, bailment, negotiable instruments, methods of research, and the judicial system (discovery, trial, and appellate processes). Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

**BAS 288(3) Course ID: 000115**  
**Personal and Organizational Leadership**  
Examines the functional framework of planning, organizing, leading, and controlling as it is utilized to introduce the management process. Introduces the interdisciplinary nature of management with the inclusion of relevant aspects of human behavior and rational decision making. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

**BAS 289(3) Course ID: 005975**  
**Retail Management**  
Examines retail structure, merchandising, promotions, store control, and decision. Identifies fundamental principles of store organization, consumer behavior, and customer service. Includes retailing trends, opportunities, and problems. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

**BAS 290(3) Course ID: 005579**  
**Management, Ethics and Society**  
Examines the business leadership-government-society relationship. Includes business leadership, ethics, decision-making, social costs, corporate responsibility, governance, global trends and the role of government in business. Pre-requisite: BAS 283 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical
BAS 293(3) Course ID: 005249
Principles of Finance
Explains fundamentals of financial concepts and valuation, corporate decisions (with emphasis in financial instruments), the banking system, financial planning, money and interest rates, and capital structure and investments. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

BAS 294(3) Course ID: 005250
Money and Financial Institutions
Presents financial intermediaries and their markets from an economic standpoint. Emphasizes analysis of financial institutions and their relationship with the money market, capital market, Federal Reserve System, monetary policy, fiscal policy, regulatory environment, international financial influences, and contemporary trends. Pre-requisite: BAS 212 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

BAS 295(3) Course ID: 005251
International Finance
Covers international finance and financial institutions, including foreign exchange, collections, credit, international financing agencies, and international financial markets. Places emphasis on role of the central bank, international and monetary trade theory, and the theory of exchange rate determination. Discusses role of the International Monetary Fund and the World Bank in financial globalization. Pre-requisite: BAS 212 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

BAS 299(1 - 3) Course ID: 000119
Instructor Consent Required
Selected Topics in Business Management: (Option Topic)
Interprets technological developments, new business issues, and/or business topics as they relate to the student's chosen field. Pre-requisite: Consent of Instructor. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture
Attributes: Technical

BAS 1201(0.8) Course ID: 005810
The Financial Planning Process
Introduces the student to basic financial planning concepts. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

BAS 1202(0.7) Course ID: 005811
Managing Your Money
Presents basic concepts related to financial institutions, consumer borrowing, and purchasing decisions. Pre-requisite: BAS 1201, or consent of instructor. Lecture: 0.7 credits (10.5 contact hours).
Components: Lecture

BAS 1203(1) Course ID: 005812
Managing Investments
Presents the fundamentals of personal investments. Pre-requisite: BAS 1202, or consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

BAS 1204(0.5) Course ID: 005813
Protecting Your Resources
Presents the basic concepts of asset protection using insurance and estate planning. Pre-requisite: BAS 1203, or consent of instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 1601(0.6) Course ID: 005145
The Foundations of Business
Examines the essential components of business on a national and global scale. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 1602(0.6) Course ID: 005146
Business Ownership, Money, and Quality
Examine business ownership, monetary systems, and quality principles. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 1603(0.6) Course ID: 005147
Introduction to Management
Identifies management functions and proper management techniques. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 1604(0.6) Course ID: 005148
Introduction to Marketing
Examines marketing functions and effective marketing techniques. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 1605(0.6) Course ID: 005149
Business Decision Making Tools
Identify decision making tools and their specific applications to business. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 1701(0.5) Course ID: 005245
Product Development
Examines essential information regarding the product development process for a small business. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 1702(0.5) Course ID: 005246
Entrepreneurial Finance
Identifies current and essential strategies for financing small businesses. Pre-requisite: BAS 1701 or Consent of Instructor. Lecture: 0.5 credits (7.6 contact hours).
Components: Lecture

BAS 1703(0.5) Course ID: 005252
Preparing the Business Plan
Examines current and essential strategies for financing small businesses. Pre-requisite: BAS 1702 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 1704(0.5) Course ID: 005247
Small Business Taxes
Examines federal, state and local tax requirements for a small business. Pre-requisite: BAS 1703 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 1705(0.5) Course ID: 005248
The Small Business Law Environment
Examines business and consumer laws for the small business. Pre-requisite: BAS 1704 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 1706(0.5) Course ID: 006221
Current Small Business Managerial Issues
Examines essential information regarding business and consumer laws for the small business. Pre-requisite: BAS 1706 or instructor consent. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2001(0.5) Course ID: 005284
Small Business Organization
Examines essential information regarding business and consumer laws for the small business. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2002(0.5) Course ID: 005285
Essential Small Business Finance
Identifies essential information to finance a small business. Pre-requisite: BAS 2001 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2003(0.5) Course ID: 005286
Essentials of a Small Business Plan
Identifies the essential information to prepare and maintain a small business plan. Pre-requisite: BAS 2002 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

BAS 2004(0.5) Course ID: 005287
Small Business Accounting and Financial Records
Examines essential information regarding accounting and financial records for a small business. Pre-requisite: BAS 2003 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2005(0.5) Course ID: 005294
Small Business Marketing
Examines essential information to market a small business. Pre-requisite: BAS 2004 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2060(0.5) Course ID: 005295
Managing Growth in the Small Business
Identifies information essential to managing growth in a small business. Pre-requisite: BAS 2005 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

BAS 2121(1) Course ID: 006106
Financial Statement Analysis
Examines financial ratios and pro forma financial statements. Pre-requisite: MAT 105 or MAT 110 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2122(1) Course ID: 006107
Break-Even Analysis
Introduces break-even analysis and the effects of leverage. Pre-requisite: MAT 105 or MAT 110 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2123(1) Course ID: 006108
Time Value of Money, Capital Budgeting, and Applications
Introduces the time value of money to compute present and future values of funds in the budgeting and managing of working capital. Pre-requisite: MAT 105 or MAT 110 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2561(1) Course ID: 015764
International Culture & Trade
Examines the importance and impact of the economic, cultural, and political environments on global business functions and managerial processes. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2562(1) Course ID: 013765
Global Trade & Foreign Investment
Examines the global trading system, its importance, and the impact of economic, cultural, and political environment on trade and foreign direct investment. Pre-requisite: BAS 2561 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Laboratory

BAS 2563(1) Course ID: 015766
Global Marketing
Examines global marketing and product development strategies and how political, economic, and cultural differences impact them. Pre-requisite: BAS 2562 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2671(0.5) Course ID: 005814
Foundation Principles of Business Law
Introduces students to the state and federal court systems, the judicial system (discovery, trial, and appellate processes), along with business organization/formation and how the law affects each separate entity as it applies to state and federal regulations. Integrates basic legal terminology. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture
Course Descriptions

BAS 2672(0.5)  Course ID: 005815  
Laws and Protection  
Introduces students to tort and criminal law, liability, and consumer awareness and protection. Pre-requisite: BAS 2671. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture

BAS 2673(1)  Course ID: 005816  
Contracts  
Introduces law of contracts. Pre-requisite: BAS 2672. Lecture: 1.0 credit (15 contact hours). Components: Lecture

BAS 2674(0.5)  Course ID: 005817  
Property Law  
Introduces bailment, ownership of personal property, and real property. Pre-requisite: BAS 2673. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture

BAS 2675(0.5)  Course ID: 005818  
Research and Negotiable Instruments  
Introduces negotiable instruments, government regulations, and methods of legal research. Pre-requisite: BAS 2674. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture

BAS 2674(0.6)  Course ID: 005150  
The Environment of Human Resource Management  
Examines the value of human resource management, individual management responsibilities, and the legal environment. Pre-requisite: (BAS 160 and BAS 263) or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2742(0.6)  Course ID: 005151  
Bringing Employees Into the Organization  
Identifies the operational requirements of the employee intake function, including HR planning, job analysis, employee recruitment, and employee selection. Pre-requisite: BAS 2741 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2743(0.6)  Course ID: 005152  
Developing and Evaluating Employees  
Examines training and development methods, career planning tools, and performance appraisal methods and techniques. Pre-requisite: BAS 2742 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2744(0.6)  Course ID: 005153  
Compensating Employees  
Identifies compensation design, pay for performance systems, benefits, and employee services. Pre-requisites: BAS 2743 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2745(0.6)  Course ID: 005154  
Employee Relations  
Recognizes occupational safety and health adherence, collective bargaining issues, and establishing effective working relationships. Pre-requisite: BAS 2744 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2821(0.5)  Course ID: 005288  
Introduction to Entrepreneurial Marketing  
Introduces small business marketing. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2822(0.5)  Course ID: 005289  
Environmental Market Strategy Planning  
Identifies essential information for an environmental and SWOT analysis in developing marketing objectives for a small business marketing plan. Pre-requisite: BAS 2821 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2823(0.5)  Course ID: 005290  
Product and Market Strategies  
Examines essential information to develop product and marketing strategies for the small business marketing plan. Pre-requisite: BAS 2822 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2824(0.5)  Course ID: 005291  
Market Distribution and Promotion  
Identifies information to develop small business distribution and promotion strategies. Pre-requisite: BAS 2823 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2825(0.5)  Course ID: 005292  
Pricing Strategies  
Identifies pricing strategies for developing small businesses. Pre-requisite: BAS 2824 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2826(0.5)  Course ID: 005293  
Market Implementation, Evaluation and Control  
Examines the different aspects of the principles and techniques. Pre-requisite: BAS 2825 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2831(0.5)  Course ID: 005819  
Introduction to Management  
Provides an overview and introduction to management and the evolution of management thought. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2832(0.5)  Course ID: 005820  
Planning and Decision Making  
Examines the planning function as it relates to other management functions and creative problem solving and decision making. Pre-requisite: BAS 2831 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2833(0.5)  Course ID: 005821  
The Process of Organizing  
Examines organization as a process as it applies to formal and informal organizations. Pre-requisite: BAS 2832 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2834(0.5)  Course ID: 005822  
Leading and Staffing  
Develops the concept of leadership and managing change. Examines managing human resources and communication and motivation. Pre-requisite: BAS 2833 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2835(0.5)  Course ID: 005823  
Controlling  
Examines the different aspects of the principles and theories of control as it relates to management information and decision support systems. Pre-requisite: BAS 2834 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Components: Lecture  

BAS 2836(0.5)  Course ID: 005824  
Special Concerns in Management  
Examines international management and succeeding in one's career. Pre-requisite: BAS 2835 or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours). Components: Lecture  

BAS 2841(0.6)  Course ID: 005825  
Effective Decision Making & Delegation  
Examines the theories of delegation and people skills and the power of delegation. Pre-requisite: (BAS 160 and BAS 283) or prior supervisory experience. Lecture: 0.6 credit (9 contact hours). Components: Lecture  

BAS 2842(0.6)  Course ID: 005826  
Empowerment and Motivation  
Examines the theories of motivation and strengthens the manager's ability to guide institutions and followers through periods of change. Pre-requisite: BAS 2841. Lecture: 0.6 credit (9 contact hours). Components: Lecture  

BAS 2843(0.6)  Course ID: 005827  
Effective Coaching and Mentoring  
Examines techniques for coaching and mentoring to provide constructive feedback to employees. Pre-requisite: BAS 2842. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2844(0.6)  Course ID: 005828  
Communication and Teamwork  
Examines communication techniques that allow for effective conflict resolution and encourages strong group outcomes. Pre-requisite: BAS 2843. Lecture: 0.6 credit (9 contact hours). Components: Lecture  

BAS 2845(0.6)  Course ID: 005829  
Effective Meetings and Quality Processes  
Examines effective techniques for conducting meetings and applying theories of quality management. Pre-requisite: BAS 2844. Lecture: 0.6 credit (9 contact hours). Components: Lecture  

BAS 2871(0.6)  Course ID: 005155  
The Role of the Team Leader  
Examines the new responsibilities of the global leader with emphasis on complexities, planning, and controlling the work environment. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2872(0.6)  Course ID: 005156  
Organizing and Developing Your Team  
Recognizes the fundamentals of organizing a work environment, appraising performance, acquiring training, and developing team members. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2873(0.6)  Course ID: 005157  
The Leadership Reins  
Examines the attributes of motivation and communication in various leadership styles appropriate for different managerial environments. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2874(0.6)  Course ID: 005158  
Managing the Team Through Conflict and Change  
Examines guiding workgroups through constantly changing and challenging work environments in order to achieve organizational priorities. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2875(0.6)  Course ID: 005159  
Decision Making and Problem Solving in a Quality Culture  
Examines principles of decision making and problem solving with emphasis on enhancing quality workplace cultures. Lecture: 0.6 credits (9 contact hours). Components: Lecture  

BAS 2881(0.6)  Course ID: 005160  
Become a Great Leader  
Examines leadership philosophies, values, characteristics, and the specific role the leader plays in directing the strategic planning process. Lecture: 0.6 credits (9 contact hours). Components: Lecture
BAS 2883(0.6) Course ID: 005162
Effective Delegation and Empowerment
Identifies strategies of delegation and empowerment that facilitate high levels of organizational effectiveness. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 2884(0.6) Course ID: 005163
Communicating for Interdependence
Identifies the use of effective communication techniques that increase interdependence in workgroups. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 2885(0.6) Course ID: 005164
Teamwork and Synergy
Emphasizes the roles of synergy and the implementation of effective team environments. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 2891(0.75) Course ID: 015767
Operations & Productivity
Introduces basic operations management concepts including productivity and global operations management challenges. Pre-requisite: BAS 2861 or Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

BAS 2892(0.75) Course ID: 015768
Product Design & Quality
Introduces the concepts of quality management and product/process design, including total quality management, just-in-time, facility layout, and the product life cycle. Pre-requisite: BAS 2861 or Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

BAS 2893(0.75) Course ID: 015769
Planning and Scheduling
Examines the importance of planning to organizational success with regards to inventory levels and scheduling. Pre-requisite: BAS 2892 or Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

BAS 2894(0.75) Course ID: 015770
Lean Operations & Supply Chain
Demonstrates the use of lean operations techniques, effective project management processes, and the elements of supply chain management to improve efficiency and effectiveness. Pre-requisite: BAS 2893 or Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

BAS 2901(1) Course ID: 006103
Moral Philosophy and Business
Examines the nature of morality and the ethical philosophy and nature of business leadership and decision making. Pre-requisite: BAS 283 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2902(1) Course ID: 006104
American Business
Examines the nature of capitalism, the social-government relationship, including the business leadership-government-society relationship. Recognizes the importance of decision making, social cost, corporate responsibility, governance, and the role of government in business. Pre-requisite: BAS 2901 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BAS 2903(1) Course ID: 006105
The Organization and Its People
Examines the business leadership-government-society relationship, including the challenges and issues in today's workplace environment with an emphasis on moral choices faced by employees. Pre-requisite: BAS 2902 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

BEX 100(3) Course ID: 001118
Basic Electricity
Introduces basic electrical concepts, including the physics of electricity, safety, electrical symbols, Ohm's law, electrical units, and the use of electrical tools. Co-requisite: BEX 101.
Components: Lecture

BEX 101(2) Course ID: 001119
Basic Electricity Lab for Non-Majors
This course introduces non-majors to the basic physics of electricity. Students apply Ohm's law, measure resistance, voltage, ohms, watts and amps; construct various types of electrical circuits; select wire and fuse sizes; and learn to troubleshoot an electric motor and coil. Co-requisite: BEX 100.
Components: Laboratory

BIO 112(3) Course ID: 000127
Introduction to Biology
Basic study of structure, function and interactions of living organisms including cell theory, genetics, energetics, evolution and ecology. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 113(1) Course ID: 000128
Introduction to Biology Lab
Emphasizes basic laboratory studies of structure, function and interactions of living organisms including cell theory, genetics, energetics, evolution, and ecology. Co-requisite: BIO 112. Lecture: 1 credit (30 contact hours).
Components: Laboratory

BIO 114(3) Course ID: 000167
Biology I
Examiners basic biological concepts such as cell structure and function, metabolism, the chemical basis of biology, protein synthesis, genetics, and evolution with emphasis placed on the cellular level. Co-requisite: BIO 115. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

BIO 115(1) Course ID: 000165
Biology Laboratory I
A two-hour laboratory to be offered concurrently with BIO 114. Designed to acquaint the student with the use of analytical techniques in biology, theory, and methods involved in experimentation, in order to facilitate a greater understanding of concepts presented in lecture and the way in which information is gathered in science. Laboratory: 1 credit (30 contact hours). Co-requisite: BIO 114.
Components: Laboratory

BIO 116(3) Course ID: 000168
Biology II
Examines basic biological concepts such as ecology, biological diversity (to include the kingdoms of life), reproduction, growth, and development, with emphasis placed on multicellular systems. Co-requisite: BIO 117. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

BIO 117(1) Course ID: 000166
Biological Laboratory II
A two-hour laboratory to be offered concurrently with BIO 116. Designed to acquaint the student with the use of analytical techniques in biology, theory, and methods involved in experimentation in order to facilitate a greater understanding of concepts presented in lecture and the way in which information is gathered in science. Laboratory: 1 credit (30 contact hours). Co-requisite: BIO 116.
Components: Laboratory

BIO 121(1) Course ID: 005191
Introduction to Ecology Laboratory
Basic laboratory studies of interactions among living organisms and their environment including biogeochemical cycling, trophic structures, sustainability and environmental impacts by humans. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 122(3) Course ID: 000175
Introduction to Conservation Biology
Historical and current perspectives on species extinction and global loss of biological diversity is presented. Methods used to conserve plant and animal life in the United States and around the world are surveyed, and conservation activities and needs are discussed in societal, cultural, economic, and political contexts. Pre-requisite: High school biology recommended. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 124(3) Course ID: 000177
Principles of Ecology
Study of the principles and interrelationships between organisms and their environment with emphasis on the analytical and statistical methods of ecology. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 132(2) Course ID: 006819
Foundations of Cell Biology
Creates a foundation of biology and chemistry as preparation for higher level biology courses. Pre-requisite or Co-requisite: Placement above or concurrent enrollment in RDG 30 and (placement above or concurrent enrollment in ENC 91) and (placement above or concurrent enrollment in MAT 65) or consent of instructor. Lecture: 2.0 credits (30 contact hours).
Components: Lecture

BIO 133(2) Course ID: 006819
Aspects of Human Biology
Aspects of human biology will be introduced from the molecular level to the integrated whole. Attention will be given to the biological bases of various health and wellness issues. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 140(3) Course ID: 000170
Foundations of Cell Biology
Examines basic biological concepts such as ecology, biological diversity (to include the kingdoms of life), reproduction, growth, and development, with emphasis placed on multicellular systems. Co-requisite: BIO 117. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

BIO 141(3) Course ID: 000171
Principles of Ecology
Study of the principles and interrelationships between organisms and their environment with emphasis on the analytical and statistical methods of ecology. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 142(3) Course ID: 000172
Aspects of Human Biology
Aspects of human biology will be introduced from the molecular level to the integrated whole. Attention will be given to the biological bases of various health and wellness issues. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 143(3) Course ID: 000173
Foundations of Cell Biology
Examines basic biological concepts such as ecology, biological diversity (to include the kingdoms of life), reproduction, growth, and development, with emphasis placed on multicellular systems. Co-requisite: BIO 117. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

BIO 144(3) Course ID: 000174
Principles of Ecology
Study of the principles and interrelationships between organisms and their environment with emphasis on the analytical and statistical methods of ecology. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 145(3) Course ID: 000175
Aspects of Human Biology
Aspects of human biology will be introduced from the molecular level to the integrated whole. Attention will be given to the biological bases of various health and wellness issues. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 146(3) Course ID: 000176
Foundations of Cell Biology
Examines basic biological concepts such as ecology, biological diversity (to include the kingdoms of life), reproduction, growth, and development, with emphasis placed on multicellular systems. Co-requisite: BIO 117. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

BIO 147(3) Course ID: 000177
Principles of Ecology
Study of the principles and interrelationships between organisms and their environment with emphasis on the analytical and statistical methods of ecology. Lecture: 3 credits (45 contact hours).
Components: Lecture

BIO 148(3) Course ID: 000178
Aspects of Human Biology
Aspects of human biology will be introduced from the molecular level to the integrated whole. Attention will be given to the biological bases of various health and wellness issues. Lecture: 3 credits (45 contact hours).
Components: Lecture
BIO 135(4)  
Course ID: 000169  
Basic Anatomy and Physiology with Laboratory  
Pre-requisite: Reading and English assessment exam scores above the KCTCS developmental level and a mathematics placement score above the score range for MAT 065 or successful completion of the prescribed developmental course(s) or consent of the instructor. Lecture: 3.0 credits (45 contact hours); Laboratory: 1.0 credit (30 contact hours).  
Components: Laboratory, Lecture  
Attributes: SL - Science Laboratory, SN - Science

BIO 137(4)  
Course ID: 000172  
Human Anatomy and Physiology I  
The interrelationship of structure and function of each body system will be presented in two semesters. The first semester will include basic chemistry, cell structure, cell physiology, metabolism, tissues, and integumentary, skeletal, muscular, and nervous systems. Pre-requisite: Reading and English assessment exam scores above the KCTCS developmental level and a mathematics placement score above the score range for MAT 065 or successful completion of the prescribed developmental course(s) or consent of the instructor. Lecture: 3.0 credits (45 contact hours); Laboratory: 1.0 credit (30 contact hours).  
Components: Laboratory, Lecture  
Attributes: SL - Science Laboratory, SN - Science, Course Also Offered in Modules

BIO 139(4)  
Course ID: 000174  
Human Anatomy and Physiology II  
The second semester continues the study of the interrelationships of organ systems, including the endocrine, reproductive, cardiovascular, lymphatic, digestive, respiratory, and urinary systems. Pre-requisite: BIO 137. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours).  
Components: Laboratory, Lecture  
Attributes: SL - Science Laboratory, SN - Science, Course Also Offered in Modules

BIO 140(3)  
Course ID: 000130  
Botany  
The anatomy, physiology, and biodiversity of plants emphasizing life processes, the cell, development, heredity, plant systems, evolution, taxonomy, phylogeny and ecology. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: SN - Science

BIO 141(4)  
Course ID: 000178  
Botany with Laboratory  
The anatomy, physiology, and biodiversity of plants emphasizing life processes, the cell, development, heredity, plant systems, evolution, taxonomy, phylogeny and ecology. Includes laboratory studies of the morphology, physiology, and reproduction of plants with emphasis on flowering plants. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours).  
Components: Laboratory, Lecture  
Attributes: SL - Science Laboratory, SN - Science

BIO 142(3)  
Course ID: 000128  
Zoology  
The anatomy, physiology, and biodiversity of animals emphasizing life processes, the cell, development, heredity, body systems, evolution, taxonomy, phylogeny and ecology. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: SN - Science

BIO 143(4)  
Course ID: 000180  
Zoology with Laboratory  
The anatomy, physiology, and biodiversity of animals emphasizing life processes, the cell, development, heredity, body systems, evolution, taxonomy, phylogeny and ecology. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours).  
Components: Laboratoy, Lecture  
Attributes: SL - Science Laboratory, SN - Science

BIO 144(3)  
Course ID: 002215  
Insect Biology  
Pre-requisite: BIO 112 or consent of the instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: SN - Science

BIO 150(3)  
Course ID: 000135  
Principles of Biology I  
Pre-requisite: BIO 150 or Concurrent enrollment. Lecture: 3 credits (45 contact hours). Pre-requisite: CHE 170 or concurrent enrollment) or consent of instructor.  
Components: Lecture  
Attributes: SN - Science

BIO 151(2)  
Course ID: 000136  
Principles of Biology Laboratory I  
Includes studies of cellular and molecular biology. Laboratory: 2 credits (60 contact hours). Pre-requisite: BIO 150 or Concurrent enrollment.  
Components: Laboratory  
Attributes: SL - Science Laboratory

BIO 152(3)  
Course ID: 000137  
Principles of Biology II  
Pre-requisite: BIO 150 or consent of instructor. Lecture: 3 credits (45 contact hours). Pre-requisite: CHE 170 or Concurrent enrollment.  
Components: Lecture  
Attributes: SN - Science

BIO 153(2)  
Course ID: 000138  
Principles of Biology Laboratory II  
Includes organismal, population and community biology. Laboratory: 2 credits (60 contact hours). Pre-requisite: BIO 152 or Concurrent enrollment.  
Components: Laboratory  
Attributes: SL - Science Laboratory

BIO 155  
Course ID: 016428  
Introductory Biology Laboratory  
Pre-requisite: Math ACT of 23 or above or MA 109, past or concurrent. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
Attributes: SL - Science Laboratory

BIO 156  
Course ID: 006342  
Astrobiology  
Pre-requisite: BI 155 and AST 155. Pre-requisite: MT 0056 and ENC091 or equivalent as determined by KCTCS placement examination. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Equivalents: AST 155

BIO 200(2)  
Course ID: 000142  
Introductory Microbiology Laboratory  
Laboratory exercises in general microbiology. Laboratory: 4 hours. Pre-requisite: One unit of chemistry or consent of instructor. BIO 200/226 should be taken concurrently.  
Components: Laboratory  
Attributes: SL - Science Laboratory

BIO 216(4)  
Course ID: 006807  
Biological Inquiry and Analysis  
An inquiry-based introduction to concepts in biology. Research-oriented activities will emphasize the skills and attitudes necessary for understanding and conducting scientific inquiry. Lecture: 3.0 credits (45 contact hours).  
Components: Laboratory, Lecture  
Attributes: University Course (Murray State University)

BIO 220(3)  
Course ID: 000139  
The Genetic Perspective  
Covers introductory genetics for non-science majors examining how heredity affects humans and the remainder of the living world and providing some insights into other fields of science from the geneticists’ perspective. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: SN - Science

BIO 225(4)  
Course ID: 000182  
Medical Microbiology  
The characteristics of microorganisms and their relation to health and disease are studied. Pre-requisite: BIO 137 and BIO 139 or equivalent. Lecture: 2 credits (30 contact hours); Laboratory: 2 credits (60 contact hours).  
Components: Laboratory, Lecture  
Attributes: SN - Science, Course Also Offered in Modules

BIO 226(3)  
Course ID: 000140  
Principles of Microbiology  
Introduction to fundamental microbial biological principles and techniques emphasizing structural functional, ecological, and evolutionary relationships among microorganisms. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: SN - Science

BIO 227(5)  
Course ID: 004989  
Principles of Microbiology with Laboratory  
Introduction to fundamental microbiological principles and techniques emphasizing structural functional, ecological, and evolutionary relationships among microorganisms. Includes laboratory exercises in general microbiology. Pre-requisite: BIO 112 or consent of instructor. Lecture: 3 credits (45 contact hours); Laboratory: 2 credit (60 contact hours).  
Components: Laboratory, Lecture  
Attributes: SL - Science Laboratory

BIO 285(1 - 3)  
Course ID: 000195  
Instructor Consent Required  
Independent Investigation in Biology  
Investigates specific topics or problems in the field of the biological sciences. May be repeated for a maximum of six credits. Laboratory varies with credit. Pre-requisite: Permission of Instructor. Laboratory: Varies with credit.  
Components: Independent Study, Lecture

BIO 299(1 - 3)  
Course ID: 000197  
Instructor Consent Required  
Selected Topics in Biology: (Topic)  
Addresses recent trends and discoveries in selected areas of biology in a seminar format. Emphasizes discussion and critical thinking. May be repeated with different subtitle for a maximum of six credits. Pre-requisite: Permission of Instructor. Lecture: Varies with credit.  
Components: Lecture  
Attributes: Other

BIO 1121(0.75)  
Course ID: 006122  
Science, Biochemistry, and Hierarchy of Life  
Covers basic studies of the Scientific method, the molecules of life and the hierarchy of life. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture
### Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Attributes</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRX 110(2)</td>
<td>Blueprint Reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRX 112(4)</td>
<td>Blueprint Reading for Machinist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRX 120(3)</td>
<td>Basic Blueprint Reading</td>
<td>Technical</td>
<td></td>
</tr>
<tr>
<td>BRX 210(2)</td>
<td>Mechanical Blueprint Reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRX 220(3)</td>
<td>Blueprint Reading for Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTN 101(1)</td>
<td>Introduction to Biotechnology</td>
<td>Technical</td>
<td></td>
</tr>
<tr>
<td>BTN 110(4)</td>
<td>Nucleic Acid Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTN 115(4)</td>
<td>Biomanufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTN 120(4)</td>
<td>Biofuels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTN 125(2)</td>
<td>Bioinformatics I</td>
<td>Technical</td>
<td></td>
</tr>
<tr>
<td>BTN 128(2)</td>
<td>Bioinformatics II</td>
<td>Technical</td>
<td></td>
</tr>
<tr>
<td>BTN 160(4)</td>
<td>Introduction to Agricultural Biotechnology</td>
<td>Technical</td>
<td></td>
</tr>
</tbody>
</table>
BTN 201(4)  Course ID: 005620  Biotechnology Techniques I
Introduces theory and techniques for media and solution preparations, use of analytical equipment, and laboratory safety. Includes various nucleic acid techniques, gene expression and purification, and bioinformatics. Pre-requisite: A semester of college biology with lab or college chemistry with lab or consent of instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

 BTN 202(4)  Course ID: 005621  Biotechnology Techniques II
Covers various protein techniques, extraction and purification, and assays. Pre-requisite: BTN 201. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

 BTN 210(4)  Course ID: 004985  Cell Culture and Function
Covers use of cell culture in modern biotechnological applications with emphasis on laboratory skills in a variety of cell culture techniques. Pre-requisite: (BTN 110 with a grade of C or better) or consent of instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

 BTN 220(4)  Course ID: 004986  Immunological Methods
Covers immunological theory and applications with focus on techniques such as isolation, purification, and labeling of antibody molecules. Pre-requisite: (BTN 110 with a grade of C or better) or consent of instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

 BTN 225(4)  Course ID: 007352  Protein Bioseparation Methods
Introduces the strategies to purify proteins as part of a biotechnology process. Introduces specific methods such as activity assays for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography, and polyacrylamide gel electrophoresis. Pre-requisite: Completion of BTN 201 and BTN 202 with a grade of C or better, or permission of the program coordinator. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

 BTN 295(1 - 3)  Course ID: 007353  Independent Investigation in Biotechnology
Investigates specific topics or problems in the field of the biotechnology under direction of the faculty. May be repeated for a maximum of six credits. Laboratory varies with credit. Pre-requisite: Permission of Instructor. Lab: 1.0 - 3.0 credits (30-90 contact hours).
Components: Laboratory
Attributes: Technical

 BTN 298(1 - 8)  Course ID: 007354  Biotechnology Learning Laboratory
Provides contextual, real-world experience and an opportunity to reinforce previously learned concepts, skills, and critical thinking ability related to business and technical job functions typical of biotechnology companies. Prepares students to conduct mentored activities on various workforce projects assigned by Biotechnology faculty/staff or in collaboration with biotechnology companies at the Learning Laboratory. Emphasizes twenty-first century skills and workforce readiness. May be repeated for a maximum of 8 credits. Pre-requisite or Co-requisite: Completion of BTN 201 and BTN 202 with a C or better, or permission of program coordinator. Practicum: 1.0 - 8.0 credits (60-480 contact hours).
Components: Practicum
Attributes: Technical

 BTN 299(1 - 3)  Course ID: 007355  Selected Topics in Biotechnology
Addresses recent trends and discoveries in selected areas of biotechnology in a seminar format. Emphasizes discussion and critical thinking. May be repeated for a maximum of 12 credits if topics and/or learning outcomes vary. Pre-requisite: Permission of instructor. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture
Attributes: Technical

 BTN 100(1)  Course ID: 007224  Biomedical Technology Systems: A Career Perspective
Offers insight into the profession for which services are provided to Biomedical Technology Systems with regards to career opportunities, job expectations, and professional growth. Pre-requisite: RDG 30 or equivalent based on KCTCS placement exam. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

 BTN 110(1)  Course ID: 007225  Environmental Risks and Precautionary Measures for the BTS Service Professional
Presents potential risks for which those involved with Biomedical Technology Systems will encounter and precautionary measures taken to assure that no harm is done. Focuses on safety awareness and management throughout the entire healthcare setting including identifying risks associated with the use and maintenance of medical technologies. Pre-requisite: RDG 30 or equivalent based on KCTCS placement exam. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

 BTN 120(2)  Course ID: 007226  Essentials of Biomedical Electronics I
Presents basic analog and digital semiconductor devices and their applications within medical products. Addresses how to read electronic schematics and apply basic troubleshooting skills to circuits that utilize both discrete components and integrated circuits. Focuses on such devices as diodes, transistors, thyristors, logic gates and flip-flops, and digital timing devices. Pre-requisite: AIT 1101 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 125(2)  Course ID: 007227  Essentials of Biomedical Electronics II
Continues the presentation of analog and digital semiconductor devices by introducing more complex devices and their applications within medical products than those introduced in BTN 120. Addresses how to read electronic schematics and apply basic troubleshooting skills to circuits that utilize integrated-packaged devices and the systems that comprise them. Focuses on such devices as operational amplifiers, combinational and sequential logic devices, microprocessors, microcontrollers, and programmable logic devices. Emphasis is also given to communication circuits used in medical products. Pre-requisite: BTS 120 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 130(2)  Course ID: 007228  Medical Equipment Management I
Presents medical technology management principles and practices with regard to ongoing training of staff, ongoing medical equipment maintenance, ongoing risk management, and ongoing quality assurance necessary to ensure that equipment is safe and adequately maintained. Focuses on record keeping and compliance with codes, standards, and regulations. Pre-requisite: BTS 130 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 140(1)  Course ID: 007229  Science Principles Employed in Medical Technologies
Presents physical and chemical science principles that are incorporated into medical devices and systems for the purpose of providing greater understanding into the design and operation of such technologies. Focuses on medical technologies that utilize principles involving light, sound, fluid dynamics, heat transfer, and electrochemistry. Pre-requisite: PHY 171. Pre-requisite or Co-requisite: BTS 125. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

 BTN 200(2)  Course ID: 007230  Patient Care Support and Management Systems
Presents systems employed throughout healthcare in support of patient care and patient management efforts with regard to their application, operation, and routine evaluation. Emphasizes systems that influence patient care in an indirect manner rather than directly providing patient care. Focuses on variety of systems including utility power systems, water and medical gas systems, nurse call systems, patient beds, sterilizers, infant abductions systems, and telemedicine. Pre-requisite: BTS 125 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 210(2)  Course ID: 007231  Diagnostic Medical Equipment and Non-Radiographic Imaging Modalities
Presents medical equipment and instrumentation used to assess biological signals and images for diagnostic purposes. Examines such technology in terms of principles of operation and measuring its performance. Focuses on a variety of diagnostic technologies including the electrocardiograph and electroencephalograph machines, the pulmonary function analyzer, video endoscopy systems, ultrasound-generating machines, and magnetic resonance imaging (MRI) systems. Pre-requisite: BIO 135, BTS 110, BTS 125, and BTS 140 (each with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 220(2)  Course ID: 007232  Laboratory Devices, Instruments, and Analyzers
Presents instruments employed in the clinical laboratory setting with regard to purpose, design, maintenance, and management. Focuses on technologies such as centrifuges, microscopes, hematology analyzers, blood gas analyzers, electrolyte analyzers, clinical chemistry analyzers, and tissue processors. Pre-requisite: BIO 135 with a grade of C or better BTS 110 with a grade of C or better BTS 125 with a grade of C or better BTS 140 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

 BTN 230(2)  Course ID: 007233  Medical Equipment Management II
Presents medical technology management principles and practices with regard to ongoing training of staff, ongoing medical equipment maintenance, ongoing risk management, and ongoing quality assurance necessary to ensure that equipment is safe and adequately maintained. Focuses on record keeping and compliance with codes, standards, and regulations. Pre-requisite: BTS 130 with a grade of C or better. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical
BTS 250(2) Course ID: 007234
Introduction to Medical-Based IT Networks and Standards
Presents IT networks employed throughout the healthcare setting that are interconnected to patient care equipment and record management systems. Includes communication standards and risk management standards used by such networks. Pre-requisite: CIT 160. Pre-requisite or Co-requisite: CIT 180. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

BTS 260(2) Course ID: 007235
Radiographic Imaging Modalities
Presents radiographic imaging systems routinely employed in health care settings with regard to the technology, theory of operations, and quality assurance testing. Emphasizes a variety of technologies including both analog and digital radiographic and fluoroscopic machines, mammography units, computed axial tomography (CAT) scanners, and bone densitometers. Pre-requisite: BIO 135, BTS 110, BTS 125, BTS 140 and BTS 230 (each with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 270(2) Course ID: 007236
Therapeutic Equipment Modalities I
Presents therapeutic medical equipment typically utilized within the perioperative and intensive care settings. Focuses on clinical applications, circuit design and circuit operation, operator controls and equipment setup, managing device alarms, addressing maintenance requirements, and meeting performance and safety standards. Emphasizes a variety of medical technologies including IV pumps, electrosurgical units, defibrillators, mechanical ventilators, anesthesia machines, infant incubators, and surgical lasers. Pre-requisite: BIO 135, BTS 125, and BTS 140 (each with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 275(2) Course ID: 007237
Therapeutic Equipment Modalities II
Presents therapeutic medical equipment typically utilized outside the perioperative and intensive care settings primarily towards physical therapy and treatment interventions. Focuses on clinical applications, circuit design and circuit operation, operator controls and equipment setup, managing device alarms, addressing maintenance requirements, and meeting performance and safety standards. Emphasizes a variety of medical technologies including therapeutic ultrasound units, electrical stimulation units, dialysis machines, oxygen concentrators, and hyperbaric chambers. Pre-requisite: BIO 135, BTS 125, and BTS 140 (each with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 280(2) Course ID: 007238
General Care Monitoring and Instrumentation
Presents various physiological parameters measured in low and mid-acuity situations typically encountered in general care settings along with the instrumentation used to obtain such information. Focuses on how the technology works and how to evaluate its performance and safety. Emphasizes a variety of medical technologies including advanced electrocardiograph monitors, invasive pressure monitors, cardiac output monitors, anesthetic gas monitors, and fetal monitors. Pre-requisite: BTS 280 and BTS 290 (both with a grade of C or better). Pre-requisite or Co-requisite: BTS 250. Lecture: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 290(2) Course ID: 007240
Clinical Experience in Biomedical Technology Systems
Provides an opportunity for the student to apply their knowledge and skill regarding various biomedical technology systems and equipment within a real-world environment. Requires the student to complete 120 contact hours of experiential training under the guidance of an assigned clinical supervisor. Pre-requisite: BTS 280, BTS 220, and BTS 230 (each with a grade of C or better). Pre-requisite or Co-requisite: BTS 250, BTS 260, BTS 275, and BTS 285. Clinical: 2.0 credits (120 contact hours).

Components: Clinical
Attributes: Technical

BTS 299(0.5 - 5) Course ID: 007241
Selected Topics of Investigation in Biomedical Technology Systems
Includes selected topics in Biomedical Technology Systems that can be addressed to fulfill an industry need or desire. Covers topics which may vary from semester to semester at the discretion of the instructor. May repeat course with different topics to a maximum of five credit hours. Pre-requisite: Consent of instructor. Lecture/Lab: 0.5 - 5.0 credits (7.5 - 75.0 contact hours).

Components: Lecture
Attributes: Technical

CAD Computer-Aided Design

CAD 100(3) Course ID: 000216
Introduction to Computer Aided Design
Applies fundamental principles and capabilities of CAD, basic drafting conventions, and operations. Provides an in-depth study of computer aided drafting commands, terminology, command utilization, and skill development. Lecture: 1.0 credit (15 contact hours). Laboratory: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

CAD 102(4) Course ID: 004052
DRAFTING FUNDAMENTALS
Explores the fundamentals of drafting in the use of equipment measurement of lines, angles, circles, arcs, and irregular curves; determining line weights; freehand sketching; geometric constructions; orthographic projection; characteristics of lines and planes; lettering; and dimensioning techniques. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

CAD 103(4) Course ID: 015755
CAD FUNDAMENTALS
Provides an introduction to team and project-based study of CAD (Computer Aided Drafting) and its applications in conjunction with current computer technology. Introduces topics that includes computer hardware and software, computer aided drafting conventions and operations, file management, the Internet, e-mail, social media, CAD commands and terminology, digital security, and computer and intellectual property ethics; presents basic applications of CAD skills in 2D/3D technical drawing production, programming, systems, and interconnections with other utility software. Lecture/Lab: 4.0 credits (90 contact hours).

Components: Lecture
Attributes: Digital Literacy

CAD 108(3) Course ID: 005186
Introduction to Surveying
Introduces the elements of surveying including measurements, distance corrections, leveling, angles, area computation, computer calculations, topographic surveying, electronic distance measuring instruments, construction surveying, GPS, and GIS. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

CAD 112(4) Course ID: 004054
ENGINEERING GRAPHICS
Explores lines and planes as they relate to orthographic projection to show the size and shape of objects. Includes application of principles and graphic elements of sectioning; techniques involved in oblique projections, axonometric projections, and perspective drawings; and dimensioning techniques as symbol usage common to all drafting disciplines. Pre-requisite: CAD 102 with a grade of C or better or Approval of Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

CAD 120(4) Course ID: 004067
INTRODUCTION TO ARCHITECTURE
Introduces a practical approach to architectural drafting using board and/or computer aided drafting methods as it relates to residential and commercial architecture, specifications, and structural systems including wood, masonry, concrete, and steel. Pre-requisite: CAD 100 OR CAD 103 with a grade of C or better or approval of the Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

CAD 130(4) Course ID: 004057
DESCRIPTIVE GEOMETRY
Examines the spatial relationships between points, lines, and planes in various orthographic projections with graphical solutions; explores the processes to solve problems using auxiliary view projection methods, revolutions, intersections, and developments. Pre-requisite: CAD 112 with a grade of C or better or Approval of Instructor. Lecture: 4.0 credits (90 contact hours).

Components: Lecture
Attributes: Technical

CAD 150(4) Course ID: 000217
PROGRAMMING IN CAD
Introduces fundamental principles of the computer language(s) that represents and interfaces with the main CAD software. Includes writing subroutines and programs to perform CAD functions not available in the main CAD software. Pre-requisite: CAD 100 OR CAD 103 with a grade of C or better or approval of the Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

CAD 200(4) Course ID: 000218
INTERMEDIATE COMPUTER AIDED DRAFTING
Produce advanced two- and three-dimensional object drawings with CAD software to learn the techniques of drafting, layering, and symbols associated with one or more design applications, and calculate perimeters, areas, and mass associated with the drawings. Pre-requisite: CAD 100 OR CAD 103 with a grade of C or better or approval of the Instructor. Lecture: 4.0 credits (90 contact hours).

Components: Lecture
Attributes: Technical

CAD 201(4) Course ID: 000219
PARAMETRIC MODELING
Introduces parametric modeling and design of a CAD workstation in exploring the techniques associated with drafting and design using parametric modeling software. Introduces creation of parametric models and explores associative function and flexibility of concurrent part design. Lecture: 2.0 credits (30 contact hours). Laboratory: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical
CAD 212(4) Course ID: 004059
Industrial Drafting Processes
Explores weldment design, welding symbols, welding processes, and fabrication techniques, tool and die, and jig and fixture drawings. Includes design specifications, pattern drawings, casting, forming processes, and mechanical drawing principles in relation to the manufacturing industry. Covers screw-thread design and related fastening concepts as they relate to manufactured items and construction. Pre-requisite: CAD 100 OR CAD 103 with a grade of C or better or approval of the Instructor. Lecture: 2.0 credits (30 contact hours), Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 216 Course ID: 016429
Building Information Modeling
Introduces Building Information Modeling (BIM), an intelligent model-based process that provides insight to help plan, design, construct, manage buildings and infrastructure through three dimensional models, and generate construction drawing sheet sets. Creates structures for analytical purposes such as visualization, quality take off, cost estimating, scheduling, coordination and facility management across various fields, including architectural, structural and mechanical, electrical, and plumbing. Using BIM technology enables discovery of potential conflicts between these fields. Lecture/Lab: 4 credits (90 contact hours).

Component: Lecture
Attributes: Technical

CAD 220(4) Course ID: 004068
Architectural Design
Applies the theory of architectural design and presentation techniques. Deals with site selection, use of materials in design, spatial relationships, and aesthetics. Explores traditional and contemporary design, designers, processes, and historical milestones. Uses board and computer techniques to illustrate interiors and exteriors of student designs. Pre-requisite: CAD 120 with a grade of C or better or approval of Instructor. Lecture: 2.0 credits (30 contact hours), Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 222(4) Course ID: 004061
Mechanical Design
Explores the design principles, mechanical adaptation, and drawing practices involved in mechanical working drawings and the design principles in various manufacturing disciplines; gear drawing and design, and cam and follower drawing and design; mechanical assemblies, machine design, power transmission, bearings, and seals in assemblies. Involves shop processes in these mechanical designs. Pre-requisite: CAD 100 with a grade of C or better or approval of Instructor. Lecture: 2.0 credits (30 contact hours), Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 230(4) Course ID: 003996
Construction Techniques
Covers the elements for constructing standard residential and commercial structures; essentials of standard construction details, which illustrate the various construction methods involved in wood frame, solid masonry, masonry veneer, concrete, and steel construction. Includes the development of a portfolio for these techniques. Pre-requisite: CAD 120 with a grade of C or better or approval of Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 240(4) Course ID: 004008
Advanced Dimensioning and Measurement
Presents an in-depth study of advanced industrial dimensioning principles, tolerances, fits, and A.N.S.I. standards. Explores shape and geometric characteristics of parts through geometric dimensioning and tolerancing

through drawing application and study. Pre-requisite: CAD 100 with a grade of C or better or approval of the Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 252(4) Course ID: 004070
Commercial Detailing
Explores commercial drafting building codes, building structure, materials, and structural drawing and detailing. Emphasizes calculations to determine appropriate structural members. Pre-requisite: CAD 120 with a grade of C or better or Approval of the Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 262(4) Course ID: 005185
Working Drawings
Prepare a set of working drawings to be used in a portfolio that shows mastery of the architectural drawing processes and knowledge of building construction techniques. Pre-requisite: CAD 120 with a grade of C or better or approval of the instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 291(2) Course ID: 004063
Special Problems
Allows the student to gain intermediate experience in their perspective fields through projects and tasks assigned by the instructor based on applications the student may one day experience as a professional. Sets the foundation for more in-depth projects that will be included in the student's future portfolio. Focuses on various assignments and curriculum determined by the program instructor. Pre-requisite: Permission of the Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

CAD 292(4)Course ID: 005188 Department Consent Required
Industrial Applications
Emphasizes the development of a portfolio of mechanical drawings specific to the occupational opportunities in specific geographical locations. Focuses on various assignments and curriculum as determined by the program instructor. Pre-requisite: Approval of Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

CAD 293(1 - 4) Course ID: 004064 Department Consent Required
Special Problems
Allows the student to gain intermediate experience in their perspective fields through projects and tasks assigned by the instructor and based on applications the student may one day experience as a professional. Sets the foundation for more in-depth projects that will be included in the student’s future portfolio. Focuses on various assignments and curriculum as determined by the program instructor. Pre-requisite: Approval of Program Coordinator. Lab: 1.0 - 4.0 credits (30-120 contact hours).
Components: Laboratory
Attributes: Technical

CAD 298(1 - 3) Course ID: 004065 Department Consent Required
Practicum
Provides supervised work experiences related to the student’s educational objectives. Students participating in the Practicum do not receive compensation. Pre-requisite: Approval of Program Coordinator. Practicum: 1.0-3.0 credits (45-135 contact hours).
Components: Practicum
Attributes: Technical

CAD 299(1 - 3) Course ID: 004066 Department Consent Required
Cooperative Education
Provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Co-op Education program receive compensation for their work. Pre-requisite: Approval of Program Coordinator. Co-op: 1.0-3.0 credits (45-135 contact hours).
Components: Co-Op
Attributes: Technical

CAR Construction/Carpentry

CARD 126(3)
Intro to Construction
Provides a discussion of the different employment opportunities of carpentry related careers within the construction industry including different construction systems and methods as well as basic management of a construction project. Emphasizes the different building materials and the correct use of hand and power tools. Includes shop and job-site safety. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CARD 127(1)
Intro to Construction - Lab
Permits students to research different employment opportunities of carpentry-related careers. Introduces the student to different construction systems and methods as well as practice basic management methods of a construction project. Permits student to become familiar with common building materials and the correct use of hand and power tools. Implements shop and job-site safety standards. Co-requisite: CAR 126. Laboratory: 1 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

CARD 140(3)
Surveying & Foundations
Provides supervised work experiences related to the student’s educational objectives. Students participating in the Practicum do not receive compensation. Pre-requisite: Approval of Program Coordinator. Lab: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

CARD 141(2)
Surveying & Foundations-Lab
Permits students to research different employment opportunities of carpentry related careers within the construction industry including different construction systems and methods as well as basic management of a construction project. Emphasizes the different building materials and the correct use of hand and power tools. Implements shop and job-site safety standards. Co-requisite: CAR 140. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

CARD 150(3)
Concrete Formwork
Introduces the carpentry student to heavy and commercial concrete form construction methods. Covers information about properties of concrete as a building material, rigging, concrete wall form systems, above grade floor systems, vertical piers and column form systems, on grade curb forms, horizontal beam forms, fire proofing encasement forms, stair forms, bridge and deck forms. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

Attributes: Technical

Attributes: Technical

Attributes: Technical

Attributes: Technical

Attributes: Technical

Attributes: Technical

Attributes: Technical
CAR 151(2) Course ID: 001157
Concrete Formwork-Lab
Introduces the carpentry student to heavy and commercial concrete form construction methods. Provides for the application of information about the properties of concrete, rigging, concrete wall forms, above grade floor systems, vertical piers and column forms, on grade curb forms, horizontal beam forms, fire proofing encasement forms, bridge and deck forms. Familiarizes student with OSHA construction standards on Concrete and Shoring, and Excavations. Co-requisite: CAR 190. Laboratroy: 2 credits (60 contact hours).
Components: Laboratory Attributes: Technical

CAR 190(3) Course ID: 001158
Light Frame Construction I
Emphasizes methods of floor, wall and stair framing, layout and construction. Provides discussion of industry safety standards and building codes. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

CAR 191(3) Course ID: 001159
Light Frame Const. I-Lab
Permits the student to practice floor, wall, and stair framing layout and construction techniques including the implementation of building codes and industry safety standards during lab or job-site practice. Co-requisite: CAR 190. Laboratory: 2 credits (60 contact hours).
Components: Laboratory Attributes: Technical

CAR 196(3) Course ID: 001160
Light Frame Construction II
Covers basic roof design and combination roof designs used in the construction industry including the layout and installation practices that will be used to fabricate and install ceiling and roof framing systems. Provides discussion of job-site safety practice, scaffold and ladder safety that deals with roof construction, and building code requirements for roof construction and material estimating. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

CAR 197(2) Course ID: 001161
Light Frame Const. II-Lab
Covers basic roof design and construction methods used in the construction industry including layout, cut and install ceiling joists, rafters, and roof decking materials. Includes layout and installation practices for roof truss systems, job-site safety practice, scaffold and ladder safety that deals with roof construction and building code requirements for roof construction and material estimating. Co-requisite: CAR 196. Laboratory: 2 credits (60 contact hours).
Components: Laboratory Attributes: Technical

CAR 198(1 - 6) Course ID: 005344
Instructor Consent Required
Includes various Construction Carpentry Technology topics, issues and trends. Topics may vary semester to semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credit hours. Pre-requisite: Consent of Instructor. Lecture: 1-6 credits (15-90 contact hours); Laboratory: 1-6 credits (30-180 contact hours).
Components: Lecture Attributes: Technical

CAR 199(2 - 4) Course ID: 016145
Co-op in Construction I
Refines the techniques and skills taught in the previous carpentry courses. Provides a supervised on-the-job experience related to the student’s educational and career training objectives. Pre-requisite: ISX 100 and/or permission of instructor. Co-Op: 2.0-4.0 credits (150-300 contact hours).
Components: Co-Op Attributes: Technical

CAR 200(3) Course ID: 001162
Light Frame Construction III
Presents the concepts of interior and exterior finish materials and methods of installation. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Course Also Offered in Modules, Technical

CAR 201(2) Course ID: 001163
Light Frame Const. III-Lab
Provides an opportunity for students to perform basic applications of the concepts of interior and exterior finish methods for light frame construction. Co-requisite: CAR 200. Laboratory: 2 credits (60 contact hours).
Components: Laboratory Attributes: Course Also Offered in Modules, Technical

CAR 240(3) Course ID: 001164
Light Frame Construction IV
Covers the concepts that support the planning, construction and installation methods for kitchen and bath cabinetry and countertops. Provides discussion of special finish trim techniques including finish stair construction and specialty millwork. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

CAR 241(2) Course ID: 001165
Light Frame Const. IV-Lab
Allows the student to practice the concepts that support the planning, construction and installation for kitchen and bathroom cabinetry and countertops including special finish trim techniques of finish stair construction and specialty millwork. Co-requisite: CAR 240. Laboratory: 2 credits (60 contact hours).
Components: Laboratory Attributes: Technical

CAR 270(3) Course ID: 007299
Green Building
Introduces the principles of green building technologies and methods of sustainable construction. Emphasizes green materials used in the construction of buildings along with alternative and/or renewable energy systems. Introduces Leadership in Energy and Environmental Design (LEED) and the National Green Building Standard (NGBS) rating systems for the certification process of green buildings. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CAR 290(2) Course ID: 001166
Practicum in Construction
Refines the techniques and skills taught in the previous carpentry courses. Provides supervised on-the-job experience related to the students educational and career training objectives. Practicum can be performed on the college campus with work assignments supervised by your program coordinator. Consists of a minimum of 150 contact hours. Two credit hours will be granted after completion. Students participating in the Practicum do not receive compensation as in the co-op program. Pre-requisite: ISX 100 and/or permission from program Instructor. Practicum: 2 credits (150 contact hours).
Components: Practicum Attributes: Technical

CAR 329(2) Course ID: 001167
Co-op in Construction
Refines the techniques and skills taught in the previous carpentry courses. Provides a supervised on-the-job experience related to the students educational and career training objectives. The program will consist of a minimum of 150 contact hours. 2.0 credit hours will be granted after completion. Pre-requisite: ISX 100 and/or permission from program Instructor. Co-op: 2 credits (150 contact hours).
Components: Co-Op Attributes: Technical

CAR 2001(1) Course ID: 016152
Light Frame Construction III - Interior
Presents the concepts of interior finish materials and methods of installation. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CAR 2002(1) Course ID: 016153
Light Frame Construction III - Exterior
Presents the concepts of exterior finish materials and methods of installation. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CAR 2003(1) Course ID: 016154
Light Frame Construction III - Scheduling
Presents the concepts of interior and exterior finish materials and methods of installation. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CAR 211(1) Course ID: 016155
Light Frame Construction III Lab Interior
Provides an opportunity for students to perform basic applications of the concepts of interior finish methods for light frame construction. Co-requisite: CAR 2001, Pre-requisite OR Co-requisite: CAR 2001. Laboratory: 1.0 credits (30 contact hours).
Components: Laboratory

CAR 212(1) Course ID: 016156
Light Frame Construction III Lab Exterior
Provides an opportunity for students to perform basic applications of the concepts of exterior finish methods for light frame construction. Co-requisite: CAR 2002, Pre-requisite OR Co-requisite: CAR 2002. Laboratory: 1.0 credits (30 contact hours).
Components: Laboratory

CET Civil Engineering Technology

CET 150(3) Course ID: 004703
Civil Engineering Graphics
This course provides the opportunity for the student to learn the basic theory necessary to generate and understand typical civil engineering working drawings. The student will develop graphic communication skills using current industry standard software. Pre-requisite: CAD 100 or ACH 185/195. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CET 200(3) Course ID: 004704
Civil Engineering Materials
The course will provide a practical look at current practice in the use of materials for civil engineering applications. Students will learn test procedures, design considerations, and overall evaluation methods for these materials. The course will include the study of soils, aggregates, concrete, and asphalt cement. Pre-requisite: ACH 160. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CET 210(3) Course ID: 004705
Structural Analysis and Design
The course will cover building structure for civil engineering technology students, including different types of building loads and their effect upon the various materials used by architects, engineers and technologists. The student will be introduced to quality construction techniques utilizing steel, concrete and reinforced concrete. Industry manuals, specifications and computer programs will be utilized to familiarize the student with current technology. Pre-requisite: ACH 225. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

CET 220(4) Course ID: 004706
Intermediate Surveying
The course will include the application of surveying practices for route surveying for highways, construction staking, and topographic surveys. Students will perform deed research and evaluation, convert outdated deeds descriptions into current measurements, and prepare record plats. Pre-requisite: CE 211. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
CHE 120(3) Course ID: 000237
Chemistry in Society
Introduces non-science majors to the main concepts and applications of chemistry in our society. Pre-requisite: (Completion of one developmental math course above Pre-Algebra with a grade of “C” or better) OR (College level math ACT score) OR equivalent. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science, Course Also Offered in Modules
CHE 125(1) Course ID: 006172
Chemistry in Society Laboratory
Reinforces concepts covered in CHE 120 and introduces scientific inquiry through selected experiments. Pre-requisite or Co-requisite: CHE 120. Laboratory: 1 credit (45 contact hours) (45:1 ratio).
Components: Laboratory
Attributes: SN - Science Laboratory
CHE 130(4) Course ID: 000236
Introductory General and Biological Chemistry
Presents the elementary principles of general, organic, and biological chemistry. Pre-requisite: (Applied Mathematics OR Intermediate Algebra or higher) with a grade of “C” or better OR (College level math ACT score). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory, SN - Science
CHE 140(3) Course ID: 000224
Introductory General Chemistry
Introduces topics in general chemistry, including properties of matter, stoichiometry, gases, atomic structure, bonding, acids and bases, oxidation and reduction, and nuclear chemistry. Intended for students interested in a one-semester course in general chemistry and recommended for students seeking careers in allied health fields. Pre-requisite: ([Intermediate Algebra] or [College Algebra or higher] with a grade of “C” or better) OR (College Level math ACT score). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 145(1) Course ID: 000239
Introductory General Chemistry Laboratory
Reinforces concepts covered in CHE 140 and introduces basic laboratory techniques, methods, and instrumentation through selected experiments dealing with chemical and physical properties, quantitative analysis, and qualitative analysis. Pre-requisite or Co-requisite: CHE 140. Laboratory: 1 credit (45 contact hours, 45:1 ratio).
Components: Laboratory
Attributes: SL - Science Laboratory
CHE 150(3) Course ID: 000226
Introduction to Organic and Biological Chemistry
Continues the sequence begun in CHE 140. Introduces topics in organic chemistry and biochemistry. Introduces organic functional groups, their reactions, and the chemistry of proteins, nucleic acids, carbohydrates, and lipids. Pre-requisite: CHE 140 with a grade of C or better. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SL - Science Laboratory, SN - Science
CHE 155(1) Course ID: 006173
Introduction to Organic and Biological Chemistry Laboratory
Reinforces concepts covered in CHE 150 and introduces basic laboratory techniques, methods, and instrumentation through selected experiments dealing with the preparation, characterization, and purification of organic compounds and the reactions of biomolecules. Pre-requisite: CHE 140 and CHE 145. Pre-requisite or Co-requisite: CHE 150. Laboratory: 1 credit (45 contact hours, 45:1 ratio).
Components: Laboratory
Attributes: SL - Science Laboratory
CHE 160(2) Course ID: 000238
Preparation for General College Chemistry
Prepares students for success in CHE 170. Introduces vocabulary and nomenclature and provides students with practice in dimensional analysis, stoichiometry, and other critical skills. Offered on a Pass/Fail basis only. Pre-requisite: (Math ACT 19) OR (Intermediate Algebra with a grade of C or better). Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Other
CHE 170(4) Course ID: 000225
General College Chemistry I
Focuses on major chemical topics, including stoichiometry, atomic structure, properties of matter and the relationship between molecular structure and chemical behavior. Emphasizes solving of mathematical problems which illustrate the principles of chemistry. Designed for students in the sciences, engineering, and pre-professional programs. Pre-requisite: (ACT math score of 21) OR (College Algebra and preliminary and final design will be explored using computer design software. Pre-requisite: CAD 100 or ACH 185/195, MA 109, and CE 211. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical
CHE 170A(3) Course ID: 000231
General College Chemistry Laboratory I
Reinforces concepts covered in CHE 170 and introduces basic laboratory techniques, methods, and instrumentation through selected experiments dealing with chemical and physical properties, quantitative analysis, and qualitative analysis. Pre-requisite or Co-requisite: CHE 170. Laboratory: 1 credit (45 contact hours, 45:1 ratio).
Components: Laboratory
Attributes: SL - Science Laboratory
CHE 175(1) Course ID: 000240
General College Chemistry Laboratory II
Continues CHE 170. Focuses on major chemical topics, including acid-base chemistry, kinetics, thermodynamics, and chemical equilibrium. Emphasizes solving of mathematical problems which illustrate the principles of chemistry. Designed for students in the sciences, engineering, and pre-professional programs. Pre-requisite: (CHE 170 with a grade of “C” or better) and (College Algebra or higher with “C” or better). Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 185(1) Course ID: 000241
General College Chemistry Laboratory II
Reinforces concepts covered in CHE 180 and introduces basic laboratory techniques, methods, and instrumentation through selected experiments. Emphasizes both quantitative and qualitative techniques. Pre-requisite: CHE 175 with a grade of C or better. Pre-requisite or Co-requisite: CHE 180. Laboratory: 1 credit (45 contact hours, 45:1 ratio).
Components: Laboratory
Attributes: SL - Science Laboratory
CHE 190(3) Course ID: 006802
Industrial Chemistry
Introduces topics in basic chemical engineering and chemical processing. Includes organic chemistry, synthetic polymers, energy sources, diffusion, fluid flow, heat transfer, recycling, air and water pollution. Intended for students in the chemical engineering technology program. Pre-requisite: (CHE 140 and CHE 145) or consent of instructor. Co-requisite: CHE 195. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other
CHE 195(1) Course ID: 006803
Industrial Chemistry Laboratory
Reinforces concepts covered in CHE 190. Includes basic laboratory techniques, methods, and selected experiments dealing with chemical engineering technology. Pre-requisite: (CHE 140 and CHE 145) or consent of instructor. Co-requisite: CHE 190. Lab: 1.0 credit hour (45 contact hours).
Components: Laboratory
Attributes: Other
CHE 253(3) Course ID: 006580
Materials Science
The properties of materials as reflected by the atomic and electronic structure of their constituent elements. Mechanical, thermal, electrical, magnetic, optical, and chemical characteristics of metallic, ceramic, polymeric, and composite solids. Pre-requisites: CHE 180. Lecture: 3.0 (45 contact hours).
Components: Lecture
Attributes: University Course (University of Louisville)
CHE 270(3) Course ID: 000230
Organic Chemistry I
Presents the fundamental principles of organic chemistry. Emphasizes the structures and properties of carbon-containing compounds. Introduces organic reactions, their mechanisms, and applications to synthesis. Pre-requisite: CHE 180 with a grade of C or better. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 275(2) Course ID: 000231
Organic Chemistry Laboratory I
Introduces common techniques used in the laboratory for purification, separation, identification, and reactions of organic compounds. Pre-requisite: CHE 185 with a grade of C or better. Pre-requisite or Co-requisite: CHE 270. Laboratory: 2 credit (60 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory
CHE 280(3) Course ID: 000232
Organic Chemistry II
Presents further applications of the principles of organic chemistry. Continues the study of organic reactions, their mechanisms, synthesis and modern spectroscopic techniques. Pre-requisite: CHE 270 with a grade of C or better. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 285(2) Course ID: 000233
Organic Chemistry Laboratory II
Explorers the synthesis, purification, and characterization of organic compounds in the laboratory. Pre-requisite: CHE 275 with a grade of C or better. Pre-requisite or Co-requisite: CHE 280. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

CHE 290(1 - 3) Course ID: 006177
Instructor Consent Required
Selected Topics in Chemistry: (Topic)
Introduces non-science majors to selected topics in chemistry. Topics may vary from semester to semester at the discretion of the instructor. Lecture: 1-3 credits (15-45 contact hours).
Components: Lecture

CHE 295(1 - 3) Course ID: 006176
Instructor Consent Required
Laboratory Research in Chemistry: (Topic)
Introduces non-science majors to selected topics in chemistry. Topics may vary from semester to semester at the discretion of the instructor. Lecture: 1-3 credits (30-90 contact hours).
Components: Laboratory

CHE 1201(0.75) Course ID: 006126
Fundamentals
Introduces science majors to the fundamentals and applications of chemistry in our society. Prerequisite: Completion of one developmental math course above Pre-Algebra with a grade of “C” or better) OR (College level math ACT score OR equivalent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

CHE 1202(0.75) Course ID: 006127
Intro to Organic & Biochem
Introduces non-science majors to the fundamentals and applications of organic and biochemistry in society. Prerequisite: CHE 1201. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

CHE 1203(0.75) Course ID: 006128
Selected Topics in Chemistry and Culture
Introduces non-science majors to selected topics in chemistry and culture. Prerequisite: CHE 1201 or 1202. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

CIS Computer Information Systems
CIS 230(3) Course ID: 000264
Advanced Microcomputer Applications
Students use advanced functions of current software packages (word processing, spreadsheets, database management, presentation developers). Topics include working with complex documents, spreadsheets, and databases. Additionally, students will create sophisticated presentations and prepare data for distribution on the Web. Lecture: 3 hours. Pre-requisite: CIS 130 or consent of instructor.
Components: Lecture
Course Equivalents: CIT 234
Attributes: Course Also Offered in Modules, Technical

CIS 2301(0.9) Course ID: 005848
Word Processing Level 3
Uses advanced functions of word processing. Includes working with complex documents and creating and preparing data for distribution on the Web. Pre-requisite: (CIS 130 or CIS 1301) or consent of instructor. Lecture: 0.9 credit (13.5 contact hours).
Components: Lecture

CIS 2302(0.9) Course ID: 005849
Spreadsheets Level 3
Uses advanced functions of spreadsheets. Includes working with complex spreadsheets and the creation and preparation of data for distribution on the Web. Pre-requisite: (CIS 130 or CIS 1302 or consent of instructor. Lecture: 0.9 credits (13.5 contact hours).
Components: Lecture

CIS 2303(0.9) Course ID: 005850
Databases Level 3
Uses advanced functions of databases. Includes working with complex databases and the creation and preparation of data for distribution on the Web. Pre-requisite: (CIS 130 or CIS 1303 or consent of instructor. Lecture: 0.9 credit (13.5 contact hours).
Components: Lecture

CIT Computer Information Technology
CIT 90(3) Course ID: 007435
Fundamental Computer Skills
Introduces computer skills fundamental to college success. Focuses on computer terminology; rudimentary skills in touch typing; creating simple documents, slides show and spreadsheets; using a course management system; using a search engine to find information on the Internet; initializing and using student email and online student services. This course does not fulfill the Digital Literacy requirement. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 105(3) Course ID: 004712
Introduction to Game Development
Provides an introduction to the computer and the convergence of technology as used in today’s global environment. Introduces topics including computer hardware and software, file management, the Internet, e-mail, the social web, green computing, security and computer ethics. Presents basic use of application, programming, systems, and utility software. Basic keyboarding skills are strongly recommended. Pre-requisite: RDG 20 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 120(3) Course ID: 004713
Computational Thinking
Promotes understanding of computer programming and logic by teaching students to think like a computer. Covers skills needed to develop and design language-independent solutions to solve computer-related problems. Covers development and design basics including use of variables, control and data structures, and principles of command-line and object-oriented languages. Pre-requisite: (CIT 105 OR CIT 105 OR IM 100 AND (MAT 085 OR MAT 126) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 124(3) Course ID: 016259
Introduction to Game Development
Provides an introduction to the computer and the convergence of technology as used in today’s global environment. Introduces topics including computer hardware and software, file management, the Internet, e-mail, the social web, green computing, security and computer ethics. Presents basic use of application, programming, systems, and utility software. Basic keyboarding skills are strongly recommended. Pre-requisite: RDG 20 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
CIT 142(3)  Course ID: 006902
C++ I
Introduces students to fundamental programming concepts using the C++ programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, and file processing. Pre-requisite: CIT 120 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 143(3)  Course ID: 006247
C# I
Introduces students to fundamental programming concepts using the C# programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming. Pre-requisite: CIT 120. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 144(3)  Course ID: 006190
Python I
Introduces students to fundamental programming concepts using the Python programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, object-oriented programming, graphical user interfaces and file processing. Pre-requisite: CIT 120 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 145(3)  Course ID: 004715
Perl I
Provides students with an overview of the PERL scripting language. Includes coding, testing, and debugging PERL programs; using variables, operators, and data types; and using control structures, pattern matching, objects, and application scripts. Pre-requisite: CIT 120 OR Consent of the Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 147(3)  Course ID: 006903
Programming I: Language
Introduces students to fundamental programming concepts using an industry-specific or emerging programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, information and file processing, and uniqueness of the language used in the course. Pre-requisite: CIT 120 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 148(3)  Course ID: 004716
Visual Basic I
Introduces students to fundamental programming concepts using the Visual Basic programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, event-driven programming, graphical user interfaces, and file processing. Pre-requisite: CIT 120 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 149(3)  Course ID: 004717
Java I
Introduces students to fundamental programming concepts using the Java programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming. Pre-requisite: CIT 120 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 150(3)  Course ID: 004718
Internet Technologies
Provides students with a study of traditional and emerging Internet technologies. Covers topics including Internet fundamentals, Internet applications, Internet delivery systems, and Internet client/server computing. Provides a hands-on experience and some rudimentary programming in an Internet environment. Pre-requisite: (CIT 105 AND CIT 120) OR Consent of the Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 151(3)  Course ID: 007390
Social Media I
Introduces students to the study of social media. Covers topics including the uses, basic tools, and impact of social media upon society. Examines the benefits for business to leverage the use of social media as well as employing social media policy. Pre-requisite: Digital Literacy or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 152(3)  Course ID: 007391
Social Media Tools and Technologies
Introduces students to web-based social media tools. Explores and researches online applications, social networks, and web banking. Develops skills to leverage social media applications and niche markets to increase business presence. Pre-requisite: CIT 150 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Laboratory
Attributes: Technical

CIT 153(3)  Course ID: 006904
Web Page Development
Introduces web page design through the use of HTML and CSS. Uses text and/or web editors to create web documents with various formats and page layouts, multimedia, tables and forms. Emphasizes W3C web design and accessibility standards. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 157(3)  Course ID: 006905
Web Site Design and Production
Introduces web site production processes with particular emphasis on design involving layout, navigation, interactivity, and using web production software. Pre-requisite: CIT 120 OR Consent of Instructor. Lecture: Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 160(4)  Course ID: 004719
Intro to Networking Concepts
Introduces technical level concepts of non-vendor specific networking including technologies, media, topologies, devices, management tools, and security. Provides the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure. Pre-requisite: MAT 65 OR Consent of Instructor. Pre-requisite Or Co-requisite: CIT 111 OR Consent of Instructor Lecture: 4.0 credits (60 contact hours).

CIT 161(4)  Course ID: 006906
Introduction to Networks
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. Introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Helps students to be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Pre-requisite: MT 065 OR Consent of Instructor. Pre-requisite or Co-requisite: CIT 111 OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 167(4)  Course ID: 015644
Routing & Switching Essentials
Covers the architecture, components, and operations of routers and switches in a small network. Helps students learn how to configure a router and a switch for basic functionality. Helps students configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Pre-requisite: CIT 161 or Consent of Instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 170(3)  Course ID: 004720
Database Design Fundamentals
Provides an overview of database and database management system concepts, internal design models, normalization, network data models, development tools, and applications. Pre-requisite: (CIT 105 OR OST 105 OR IMD 100) AND (MAT 085 OR MAT 126) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 171(3)  Course ID: 004721
SQL I
Provides students with an extensive introduction to database manipulation techniques. Introduces students to SQL; will create and maintain database objects; and store, retrieve, and manipulate data using SQL. Pre-requisite: (CIT 120 and CIT 170) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 180(3)  Course ID: 006911
Security Fundamentals
Introduces basic computer and network security concepts and methodologies. Covers principles of security: compliance and operational security; threats and vulnerabilities; network security; application, data, and host security; access control and identity management; and cryptography. Helps to prepare students for the COMPTIA Security+ examination. Pre-requisite: (CIT 105 AND CIT 160 OR CIT 161)). OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 182(3)  Course ID: 006911
Perimeter Defense
Presents information and skills required to secure computers and networks from attacks with an emphasis on configuration of firewalls and intrusion-detection systems. Pre-requisite: CIT 180 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 184(3)  Course ID: 006912
Attacks and Exploits
Provides knowledge and skills necessary to understand a variety of attacks and exploits against computers and networks. Teaches effective defensive techniques against real attacks. Pre-requisite: CIT 180 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 201(3)  Course ID: 007295
Information Storage Management
Provides a comprehensive introduction to storage technology. Explores the architectures, features, and benefits of intelligent storage systems, networked storage technologies, long-term archiving solutions, information security, and the emerging field of storage virtualization and cloud technologies. Pre-requisite: (CIT 167 AND (CIT 214 OR CIT 217)) OR Consent of instructor. Lecture: Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
CIT 203(3) Course ID: 007296
Introduction to Virtualization
Provides an introduction to virtualization technologies including the architecture, its applications, and best practices. Utilizes VMware ESXi servers for creation and management of virtual machines, virtual switches and storage architectures including distributed resource scheduling, high availability, and fault tolerance. Satisfies the VMware Certified Professional (VCP) course requirement. Pre-requisite: (CIT 167 AND CIT 214 OR CIT 217) OR Consent of instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

CIT 205(3) Course ID: 007297
Cloud Infrastructure and Services
Provides a comprehensive introduction to cloud computing deployment and service models, cloud infrastructure, and the key considerations in migrating to cloud computing. Examines the required technology essentials across all domains including server, storage, networking, applications, and databases to help develop a strong understanding of virtualization and cloud computing technologies. Pre-requisite: (CIT 201 and CIT 203) or consent of instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

CIT 209(4) Course ID: 015645
Scaling Networks
Covers the architecture, components, and operations of routers and switches in a larger and more complex network. Helps students learn how to configure routers and switches for advanced functionality. Helps students to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Helps students to develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Pre-requisite: CIT 209 OR Consent of instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

CIT 212(4) Course ID: 004723
Connecting Networks
Covers WAN technologies and network services required by converged applications in a complex network. Enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Helps students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Helps students to develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Pre-requisite: CIT 209 OR Consent of instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Course Equivalences: CIT 283
Attributes: Technical

CIT 213(3) Course ID: 006192
Microsoft Client Configuration
Covers installation and configuration of the current Microsoft Windows client operating system. Helps prepare students for exams in the Microsoft certification exam series. Pre-requisite: (CIT 111 AND CIT 160 OR CIT 161) OR Consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CIT 214(3) Course ID: 006914
Microsoft Server Configuration
Provides students with the knowledge and skills to install, configure and administer a network server infrastructure including DNS, DHCP, Hyper-V, including the design and implementation of an Active Directory environment. Covers how to implement and configure secure network access, implement fault tolerant storage technologies, enable network technologies most commonly used with Windows Servers and IP-enabled networks, configure an Active Directory environment, and work with virtual drives and devices. Assists in preparing students for various Microsoft certification exam series. Pre-requisite: (CIT 111 AND CIT 160 OR CIT 161) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical, Course Also Offered in Modules, Technical

CIT 215(3) Course ID: 015661
Microsoft Server Administration
Covers the skills needed to maintain and administer a Windows Server 2012 environment, including user and group management, network access, and data security at an intermediate level. Helps prepare students to implement a core Windows Server infrastructure in an enterprise environment (second in a series of three courses). Pre-requisite: CIT 214. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CIT 216(3) Course ID: 015648
Microsoft Server Advanced Services
Covers the advanced configuration tasks necessary to deploy, manage and maintain a Windows Server environment, including fault tolerance, certificate services, and identity federation. Helps prepare students to implement a core Windows Server 2012 infrastructure in an enterprise environment (third in a series of three courses). Pre-requisite: CIT 214. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CIT 217(3) Course ID: 004724
UNIX/Linux Administration
Developed in 1969, the UNIX operating system shaped the development of the Internet and is used extensively in servers, workstations, and mobile devices. Learn the fundamental skills necessary to install UNIX/Linux and maintain a UNIX/Linux system on a day-to-day basis. Pre-requisite: (CIT 111 AND CIT 160) OR Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours)
Components: Lecture Attributes: Technical, Course Also Offered in Modules, Technical

CIT 218(3) Course ID: 004725
UNIX/Linux Net Infrastructure
Establishing secure networking environments is a key strength of the UNIX/Linux operating system. Explores naming, messaging, file transfer, remote login, routing, address assignment, distributed file systems, web, and email services in a standard UNIX/Linux server environment. Pre-requisite: CIT 217 OR Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours)
Components: Lecture Attributes: Technical

CIT 219(3) Course ID: 006915
Internet Protocols
Provides an in-depth exploration of the components of the TCP/IP protocol suite and the associated underlying technologies required to support them. Includes design, installation, configuration, management, and troubleshooting of TCP/IP networks. Pre-requisite: (CIT 160 OR CIT 161 OR CIT 162) OR Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours)
Components: Lecture
Course Equivalences: CIT 269
Attributes: Technical

CIT 221(3) Course ID: 006916
Computer Graphics
Introduces basic computer graphics with an emphasis on graphics for game design. Instills students in practical aspects of graphics such as color, ray tracing, rasterization, shading, mapping, light, and shadow. Pre-requisite: CIT 105 OR IM 100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalences: IM 221
Attributes: Technical

CIT 222(3) Course ID: 016260
3D Modeling for Video Games
Instills students in the use of industry-standard 3D modeling software specific to the video-game industry. Emphasizes both architectural and character modeling.
Components: Lecture
Course Equivalences: CIS 230
Attributes: Technical

Familiarizes the student with key 3D modeling concepts and methods, workflow, and the creation and preparation of 3D assets for use specifically in a video-game application. Allows students to create a variety of 3D assets. Pre-requisite: CIT/IM 221 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalences: IMM 222
Attributes: Technical

CIT 223(3) Course ID: 006917
Computer Animation
Explores students to the specialized process of animating 3D assets for gaming applications. Familiarizes students with animating both organic and inorganic assets, lighting scenes, rendering and producing cut-scenes, and preparing character assets for in-game motion. Allows students to acquire the necessary skills and techniques to integrate audio with their game animations using basic sound-engineering software and processes. Pre-requisite: CIT/IM 222 AND CIT/IM 272 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalences: IMM 223
Attributes: Technical

CIT 225(3) Course ID: 006918
GIS Software Tools
Explores geographical information system extensions. Introduces and identifies popular advanced extensions used for network analysis, spatial analysis, and 3D analysis. Pre-requisite: CIT 125 AND CIT 170 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CIT 229(3) Course ID: 006919
Selected Topics in GIS
Explores selected topics in geographical information systems such as homeland security, agriculture, government applications, remote sensing, spatial modeling, GPS techniques, or cartography. (Course may be repeated with different topics to a maximum of six credit hours.) Pre-requisite: CIT 125 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CIT 231(3) Course ID: 016140
Management Information Systems
Introduces the sociotechnical aspects of information systems and their implications for organizations, as well as current topics and technologies associated with information systems. Emphasizes the Internet and e-commerce. Introduces other technologies both current and future. Ends with coverage of the combined application of sociotechnological principles and various technologies. Pre-requisite: Digital literacy of instructor permission. Lecture: 3.0 credits (Lab 45).
Components: Lecture
Course Equivalences: CIT 231
Attributes: Technical

CIT 232(3) Course ID: 006193
Help Desk Operations
Introduces a variety of tools and techniques to provide user support in help desk operations. Explores help desk concepts, customer service skills, troubleshooting procedures, writing for end users, help desk operations and software, needs analysis, facilities management, and other topics related to end user support. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalences: Technical

CIT 234(3) Course ID: 004727
Advanced Productivity Software
Uses advanced functions of word processing, presentation, and email software. Includes working with complex documents creating and preparing data distribution on the web. Pre-requisite: CIT 130 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalences: CIS 230
Attributes: Technical
CIT 236(3)  
Course ID: 004728  
Adv Data Organization Software  
Uses advanced functions of databases and spreadsheets. Explores complex databases and spreadsheets for the creation and presentation of data distribution on the Web. Pre-requisite: CIT 130 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 241(3)  
Course ID: 006920  
PHP II  
Explores the dynamic features of PHP and how it can interact to form spontaneous websites and dynamic feature rich content. Pre-requisite: CIT 141 OR Consent of Instructor. Lecture: 3.0 (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 242(3)  
Course ID: 006921  
C++ II  
Introduces students to advanced programming concepts using C++. Includes advanced data structures, concurrency, innovative algorithms, advanced file processing, and topics that are unique to C++. Pre-requisite: CIT 142 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 243(3)  
Course ID: 006248  
C# II  
Provides students with an extensive overview of designing and developing advanced object-oriented applications using the C# programming language. Includes advanced graphical user interfaces, event-driven programming, advanced data types and structures, concurrency, file and data base processing, mobile computing, and other advanced topics. Pre-requisite: CIT 143. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 244(3)  
Course ID: 015649  
Python II  
Provides students with an extensive overview of designing advanced computer applications using the Python programming language. Includes graphical user interfaces, event-driven programming, modular programming, advanced object-oriented programming, advanced data types and structures, input validation, error-handling, database processing, and client/server programming. Pre-requisite: CIT 144 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 246(3)  
Course ID: 006922  
2-D Game Development: Language  
Provides students with an introduction to two-dimensional game creation. Includes the creation of a two-dimensional game using an industry-specific or emerging programming language. This course may be repeated with a different language. Pre-requisite: Level I Programming Language (using the same programming language) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 247(3)  
Course ID: 006923  
Programming II: Language  
Introduces students to advanced programming concepts using an industry-specific or emerging programming language. Includes advanced features of the language studied, such as, advanced data structures, concurrency, innovative algorithms, advanced file processing, and topics that are unique to the language studied. Pre-requisite: CIT 147 (for the same programming language) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 248(3)  
Course ID: 004729  
Visual Basic II  
Develops applications using Visual Basic with an emphasis on application design, record-handling routines, and database engine operations, including working with objects from Microsoft Office, creating ActiveX documents, and building Internet applications with these documents. Pre-requisite: CIT 148 or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 249(3)  
Course ID: 005208  
Java II  
Provides students with an extensive overview of designing and developing advanced object-oriented applications using the Java programming language. Includes input and output streams (file processing), polymorphism, inheritance, multithreading, recursion, and other advanced topics. Pre-requisite: CIT 149 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 251(3)  
Course ID: 007392  
Social Media II  
Provides students with skills, knowledge, and experience to respond to the challenges of a rapidly changing world through the implementation of social media strategies. Examines social media plans for building social profiles, selecting appropriate audiences, and effective communication through identified social media tools. Covers additional trends, case studies, and research on the creation of a virtual website and social media technologies and practices. Pre-requisite: CIT 151 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 253(3)  
Course ID: 005039  
Data Driven Web Pages: Topic  
Provides students with the knowledge and skills to design, implement, and manage a database-driven website. Includes the study of databases and web servers in e-commerce, transaction processing, and client-side and server-side web scripting. Includes the creation of a database-driven website. Pre-requisite: CIT 150 AND CIT 170 OR Approved Level I Programming Language) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 255(3)  
Course ID: 005104  
Web Server Administration  
Provides an in-depth study of the functions required to run a safe and stable web server. Considers multiple web servers on multiple platforms from installation to configuration, availability, and security. Requires hands-on experiences with web services. Pre-requisite: (CIT150 AND CIT214 OR CIT218) AND CIT219 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 257(3)  
Course ID: 006925  
Applied Internet Technologies  
Provides a framework for integrating the content of the Internet Technologies Web Programming track into a complete and functioning web site. Creates a portfolio of a fully functional web site to aid in student employment within the Web Programming field. Pre-requisite: CIT 140 AND CIT 171 AND CIT 253 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 258(3)  
Course ID: 005211  
Internet Technologies Seminar  
Incorporates research, study, and discussion of current and emerging topics, issues, and trends in Internet technologies. Requires participation in class presentations, as well as individual and/or group projects involving Internet technologies. Pre-requisite: CIT 253 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 260(3)  
Course ID: 004730  
Network Hardware Installation and Troubleshooting  
Provides students with the knowledge and skills necessary to install, configure, and troubleshoot common networks, and equipment used to connect a local area network. Pre-requisite: CIT 160 or consent of Instructor. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours).  
Components: Laboratory, Lecture

CIT 262(3)  
Course ID: 005210  
MS Network Infrastructure  
Provides students with the knowledge and skills necessary to install, configure, and manage, and support a network infrastructure using a Microsoft Windows server operating system. Assists in preparing students for exams in the Microsoft certification exam series. Pre-requisite: CIT 213 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 263(1 - 6)  
Course ID: 006246  
Advanced Topics in Microsoft Windows: (Topic)  
Covers concepts and/or skills from special areas of interest in Microsoft Windows operating systems. Focus on specific topics that will vary from semester to semester at the discretion of the instructor. Pre-requisite: CIT 213 or consent of instructor. Lecture: 1-6 credits (15-90 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 265(3)  
Course ID: 006195  
MS Application Servers  
Focuses on the deployment, configuration and management of Microsoft servers that support users and applications, especially web servers, Remote Desktop servers SharePoint servers and file servers. Pre-requisite: CIT 213 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 266(3)  
Course ID: 006196  
MS Enterprise Administration  
Focuses on Windows server administration at the enterprise level. Covers planning networks and services, designing core identity and access management components, implementing a public key infrastructure, planning for restructuring forests and domains, and designing a virtualization strategy. Pre-requisite: CIT 261 AND (CIT 214 OR CIT 262) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

CIT 269(3)  
Course ID: 004731  
Internet Protocols  
Provides students with the knowledge and skills to install, configure, manage and troubleshoot internetworks using TCP/IP and its associated protocols. Pre-requisite: (CIT 111 and CIT 160) or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Course Equivalents: CIT 219

CIT 271(3)  
Course ID: 004732  
SQL II  
Provides an extensive overview of SQL using programming to create, query, manage and maintain databases. Uses advanced features of SQL, including stored procedures and triggers, to design and interface with a database and other applications. Pre-requisite: CIT 171 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

260
CIT 272(3)  Course ID: 016261
Game Design Theory
Introduces students to the experience-oriented standards and techniques of gaming on a digital platform. Includes hands-on conceptualization and writing of a game created by the student. Emphasizes creativity, player experiences and motivations, styles of play, types of games, character creation, world creation, and story-driven narrative within a video game. Offers students the opportunity to complete an industry-standard Game Design Document. Pre-requisite: CIT/IMD 124 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: IMD 212
Attributes: Technical

CIT 273(3)  Course ID: 016262
Game Production
Provides students with the opportunity to produce a fully playable 3D video game using assets and materials created in previous courses. Offers students the opportunity to employ an industry-standard game engine to meld 3D content, audio, narrative, character, and environment into a professional and enjoyable video game experience. Pre-requisite: CIT/IMD 222 AND CIT/IMD 272 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: IMD 273
Attributes: Technical

CIT 274(3)  Course ID: 016263
Seminar in Game Development
Encompasses the three phases of game design and development: conception, creation, and marketing in this project-oriented seminar. Requires participation in class presentations, individual and group projects, development of a game, and creation of a portfolio. Pre-requisite: CIT/IMD 223 AND CIT/IMD 273 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: IMD 274
Attributes: Technical

CIT 276(3)  Course ID: 006926
3-D Game Development: Language
Provides students with an introduction to three-dimensional game creation. Includes the creation of a three-dimensional game development using an industry-specific or emerging programming language. Includes complex features of the language not previously covered in Programming I and Programming II. Comprehensive projects will be developed that model work performed in a corporate environment. Pre-requisite: CIT 246 (using the same programming language) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 277(3)  Course ID: 006927
Programming III: Language
Introduces students to complex programming concepts using an industry-specific or emerging programming language. Includes complex features of the language not previously covered in Programming I and Programming II. Comprehensive projects will be developed that model work performed in a corporate environment. Pre-requisite: CIT 247 (for the same programming language) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 278(3)  Course ID: 006928
Visual Basic III
Provides students with the knowledge and skills to design, develop, and implement distributed and Web client applications using the Visual Basic programming language. Includes advanced application and user interface design, custom libraries, ActiveX Objects, stored procedures, and distributed applications. Pre-requisite: CIT 248 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 281(4)  Course ID: 004736
Routing
Provides students with the skills necessary to understand and apply concepts related to networking hardware. Covers advanced TCP/IP concepts such as IP addressing and subnetting, beginning router configuration, routed and routing protocols. Completes one of a series of four courses that prepares students for the Cisco Certified Network Associate (CCNA) certification exam. Pre-requisite: CIT 160 or consent of instructor. Lecture: 4 credits (60 contact hours).
Components: Lecture

CIT 282(4)  Course ID: 004737
Switching
Provides students with the skills necessary to understand and apply advanced networking concepts. Covers local area network (LAN) switching, virtual local area networks (VLANs), advanced network design concepts, advanced router configuration, and advanced network management projects. Completes one of four courses that prepares students for the Cisco Certified Network Associate (CCNA) certification exam. Pre-requisite: CIT 160 or consent of instructor. Lecture: 4 credits (60 contact hours).
Components: Lecture

CIT 283(4)  Course ID: 004738
Wide Area Network Design and Management
Provides students with the skills necessary to understand and apply advanced principles and applications in deploying networking hardware. Covers WAN design, WAN connectivity protocols such as PPP, ISDN, and Frame Relay, as well as advanced network management projects. Completes the final of four courses that prepare students for the Cisco Certified Network Associate (CCNA) certification exam. Pre-requisite: CIT 281 and CIT 282 or consent of instructor. Lecture: 4 credits (60 contact hours).
Components: Lecture

CIT 284(4)  Course ID: 006930
MS Windows OS Security
Provides students the knowledge and skills necessary to secure the Windows operating system. Pre-requisite: CIT 180 AND CIT 204 OR CIT 262 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 285(3)  Course ID: 006931
UNIX/Linux OS Security
Provides students the knowledge and skills necessary to secure the UNIX/Linux operating system and to utilize the UNIX/Linux operating system for security functions. Emphasizes use of freely available security tools. Pre-requisite: CIT 180 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 287(3)  Course ID: 006932
Cisco OS Security
Provides students with comprehensive understanding of network security concepts. Includes installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. Covers implementation of hosts and perimeter edge device firewalls and defends in-depth prevention systems. Pre-requisite: CIT 165 OR CIT 212 OR Consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 288(3)  Course ID: 006197
Network Security
Provides students with the knowledge and skills necessary to understand and defend against a variety of computer and network attacks. Focusses on both the offensive and defensive techniques used to launch attacks and the defensive techniques required to defend computers and networks. Pre-requisite: CIT 180 AND Level 1 Network Technologies Specialization Sequence OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 290(3)  Course ID: 004733
Instructor Consent Required
Internship
Provides on-the-job experience in computer and information technologies, requiring a minimum of 120 clock hours of appropriate experience approved by the faculty member (40 clock hours per credit); requires a learning contract signed by the student, faculty member, and supervisor. Note: Course is offered on pass-fail basis only. Pre-requisite: Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 291(3)  Course ID: 006198
CIT Capstone
Apply acquired techniques, knowledge, and skills to successfully analyze, design, and plan a CIT project. Develop key project management and system analysis deliverables in a portfolio. Pre-requisite: 36 credit hours of CIT Courses OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

CIT 295(1 - 3)  Course ID: 004741
Independent Problems in CIT: Topic
Explores concepts and/or skills from special areas of interest in Computer & Information Technologies. Topics vary from semester to semester. May be repeated up to two times with different topics to a maximum of 6 credit hours. Pre-requisite: Consent of Instructor. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture

CIT 299(1 - 3)  Course ID: 004742
Special Topics in CIT: Topic
Explores concepts and/or skills from special areas of interest in computer and information systems. May be repeated with different topics to a maximum of 6 credit hours. Pre-requisite: Consent of Instructor. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture

CIT 1051(0.5)  Course ID: 006972
Computer Basics
Introduces fundamentals of computer hardware and software, the social web, green computing, security and computer ethics. Pre-requisite: RDG 20 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1052(0.6)  Course ID: 006973
System and Utility Management
Introduces file management and presents basic use of systems and utility software. Pre-requisite: RDG 20 OR Consent of Instructor. Lecture: 0.6 credits (9.0 contact hours).
Components: Lecture

CIT 1053(0.8)  Course ID: 006974
Internet, Email, and Networks
Introduces the Internet, e-mail, course management systems and networking. Pre-requisite: RDG 20 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1054(0.5)  Course ID: 006975
Globalization and the Cloud
Introduces globalization and impact and use of cloud computing. Pre-requisite: RDG 20 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture
CIT 1055(0.6) Software Basics
Course ID: 006976
Pre-requisite OR Consent of Instructor.
Components: Lecture
0.8 credits (9 contact hours).

CIT 1111(0.8) Computer Hardware Essentials
Course ID: 007091
Provides a practical view of hardware components.
Pre-requisite: CIT 105 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1112(0.8) Computer Maintenance
Course ID: 007092
Provides a practical view of troubleshooting, repair, and maintenance.
Pre-requisite: CIT 1111 or Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1113(1) Operating Systems and Tools
Course ID: 007093
Provides a practical view of operating system interfaces and management tools.
Pre-requisite: CIT 1112 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).

CIT 1114(0.8) Networking and Security
Course ID: 007094
Provides a practical view of networking components and computer security.
Pre-requisite: CIT 1113 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1115(0.8) Operational Procedures
Course ID: 007095
Provides a practical view of operational procedures.
Pre-requisite: CIT 1114 OR Consent of Instructor.
Components: Lecture
0.6 credits (9.0 contact hours).

CIT 1201(1) Basic Program Logic
Course ID: 006977
Introduces an introduction to computer programming and logic including program flow, data types, and variables, and design tools.
Pre-requisite: Digital Literacy AND MAT 085 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).

CIT 1202(1) Control and Data Structures
Course ID: 006978
Introduces fundamental programming concepts using the C++ programming language.
Pre-requisite: CIT 1201 OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1301(0.8) Word Processing Applications
Course ID: 006980
Introduces word processing application software to solve common business problems.
Pre-requisite: CIT 105 OR OST 105 OR IMD 100 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1302(0.8) Spreadsheet Applications
Course ID: 006981
Introduces spreadsheet application software to solve common business problems.
Pre-requisite: Computer Literacy OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1303(0.8) Database Applications
Course ID: 006982
Introduces database application software to solve common business problems.
Pre-requisite: Computer Literacy OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1304(0.6) Presentation Software Apps
Course ID: 006983
Utilizes current presentation software application software to solve common business problems.
Pre-requisite: Computer Literacy OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1401(0.6) JavaScript Basics
Course ID: 006984
Provides an overview of the JavaScript language.
Introduces variables, operators, and data types.
Pre-requisite: CIT 120 AND CIT 150 OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1402(0.8) Input/Output Processes
Course ID: 006985
Introduces input and output statements using JavaScript.
Identifies errors and code efficiency.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1403(0.8) Control Structures/Patterns
Course ID: 006986
Introduces control structures and application scripts using JavaScript.
Identifies errors and code efficiency.
Pre-requisite: CIT 1402 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1404(0.8) JavaScript Objects/Scripts
Course ID: 006987
Introduces objects and application scripts using JavaScript.
Identifies errors and code efficiency.
Pre-requisite: CIT 1403 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1421(0.6) C++ Overview
Course ID: 006988
C++ Control Structures
Introduction to control structures for the C++ language.
Pre-requisite: CIT 120 OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1422(0.8) C++ Functions
Course ID: 006989
C++ Arrays and Pointers
Introduces control structures for the C++ language.
Pre-requisite: CIT 1421 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1423(0.8) C++ Objects
Course ID: 006990
C++ Arrays
Introduces objects and application scripts using JavaScript.
Pre-requisite: CIT 1403 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1424(0.8) C++ Files
Course ID: 006991
C++ Array Processing
Introduces arrays and pointers for the C++ language.
Pre-requisite: CIT 1423 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1481(0.6) Visual Basic Overview
Course ID: 006992
Visual Basic Programming
Introduces fundamental programming concepts using the Visual Basic programming language.
Pre-requisite: CIT 120 OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1482(0.8) VB Control Structures
Course ID: 006993
VB Control Structures
Introduces control structures for theVB language.
Identifies error-handling and code evaluation.
Pre-requisite: CIT 1481 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1483(0.8) VB Arrays
Course ID: 006994
VB Arrays
Introduces arrays and object oriented programming for the VB language.
Identifies error-handling and code evaluation.
Pre-requisite: CIT 1482 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1484(0.8) VB File Processing
Course ID: 006995
VB File Processing
Presents modular programming and file processing for the VB language.
Identifies error-handling and code evaluation.
Pre-requisite: CIT 1483 OR Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1501(0.6) Internet Technologies
Course ID: 006996
Internet Technologies
Presents traditional and emerging Internet technologies including Internet fundamentals and governing organizations for the web.
Pre-requisite: CIT 105 OR Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1502(0.6) Internet Tools
Course ID: 006997
Internet Tools
Provides an overview of Internet Technologies and protocols across the Internet.
Pre-requisite: CIT 1501 or Consent of Instructor.
Components: Lecture
0.6 credits (9 contact hours).

CIT 1503(0.8) eCommerce
Course ID: 006998
ECommerce
Presents practical eCommerce strategies for publishing on the web including core connectivity, naming conventions, and web registration.
Pre-requisite: CIT 1502 or Consent of Instructor.
Components: Lecture
0.8 credits (12 contact hours).

CIT 1504(1) Web Programming
Course ID: 006999
Web Programming
Creates basic web content using HTML and client/server applications to publish to the web.
Pre-requisite: CIT 1503 or Consent of Instructor.
Components: Lecture
1.0 credits (15 contact hours).

CIT 1601(1) Networking Basics
Course ID: 007000
Networking Basics
Introduces non-vendor specific technical level networking concepts.
Pre-requisite: MAT 65 OR Consent of Instructor.
Pre-requisite OR Co-requisite: CIT 111 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).

CIT 1602(1) Network Media and Technologies
Course ID: 007001
Network Media and Technologies
Introduces non-vendor specific network concepts such as the media, technologies, topologies, and devices.
Pre-requisite: CIT 1601 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).

CIT 1603(1) Network Management
Course ID: 007002
Network Management
Presents the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure.
Pre-requisite: CIT 1602 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).

CIT 1604(1) Network Tools and Security
Course ID: 007003
Network Tools and Security
Introduces tools used to troubleshoot and secure networks.
Pre-requisite: CIT 1603 OR Consent of Instructor.
Components: Lecture
1.0 credit (15 contact hours).
CIT 1611(0.3) Course ID: 016318
Network Basics
Introduces students to basic concepts and components of a data network and the Internet, architecture, structure, functions, components, and models. Pre-requisite: MAT 055 OR Consent of Instructor. Pre-requisite OR Co-requisite: CIT 111 OR Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours).
Components: Lecture

CIT 1612(0.4) Course ID: 016319
Protocol Models
Describes the principles of simple LAN development including the OSI and TCP/IP models, the encapsulation process, and data flow between two hosts across a network. Pre-requisite: CIT 1611 OR Consent of Instructor. Lecture: 0.4 credits (6 contact hours).
Components: Lecture

CIT 1613(0.6) Course ID: 016320
OSI Layer Operations
Describes the functions and responsibilities of the various OSI models pertaining to simple LANs. Pre-requisite: CIT 1612 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1614(0.7) Course ID: 016321
Basic IP Addressing
Introduces the format, function, and types of IP addressing used in simple LAN networks. Pre-requisite: CIT 1611 OR Consent of Instructor. Lecture: 0.7 credits (10.5 contact hours).
Components: Lecture

CIT 1615(1) Course ID: 016322
IP Subnetting
Introduces the designing implementation of IP addressing schemes for LANs requiring IPv4 and IPv6. Pre-requisite: CIT 1614 OR Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 1616(0.5) Course ID: 016323
Ethernet Networks
Introduces the fundamental Ethernet concepts including operation and design of an Ethernet network. Pre-requisite: CIT 1613 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1617(0.5) Course ID: 016325
Configuring Switches & Routers
Introduces basic configuration of routers and switches using the command line interface (CLI) including utilities to test and monitor the operation of a simple LAN network. Pre-requisite: CIT 1616 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1621(1) Course ID: 007004
Hardware and Operating Systems
Provides concepts about PC hardware and operating systems. Pre-requisite: MAT 065 OR Consent of instructor. Pre-requisite OR Co-requisite: CIT 111 OR Consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1622(1) Course ID: 007005
Network Connections & Resources
Presents concepts and skills for connecting computer hardware to a network. Provides overview of network addressing, services, and security. Pre-requisite: CIT 1621 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1623(1) Course ID: 007006
Network Troubleshooting
Presents concepts and techniques for troubleshooting errors and issues on a network. Pre-requisite: CIT 1622 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1624(1) Course ID: 007007
Network Planning
Provides skills for planning and implementing a small network. Pre-requisite: CIT 1623 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1631(1) Course ID: 007008
Internet Communications
Provides a basic overview of the Internet, network models, and ISP troubleshooting. Develops skills for computer technicians, network and help desk technicians. Pre-requisite: CIT 162 OR Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 1632(1) Course ID: 007009
Planning/Upgrading Networks
Provides a basic overview of networks including planning and upgrades. Develops skills required for computer technicians, network and help desk technicians. Pre-requisite: CIT 1631 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1633(1) Course ID: 007010
Configuring Networks
Provides a basic overview of routing, remote access, and covers servers that provide e-mail services. Develops skills required for computer technicians, network and help desk technicians. Pre-requisite: CIT 1633 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1634(1) Course ID: 007011
Maintaining Networks
Provides a basic overview of network monitoring, recovery procedures, and troubleshooting. Develops skills required for computer technicians, network and help desk technicians. Pre-requisite: CIT 1633 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1671(0.3) Course ID: 016326
Intro to Switching
Covers basic concepts and operation of switched networks, including the OSI and TCP/IP models, architecture and components. Provides an overview of designing a database model and implementation. Introduces Structured Query Language (SQL). Pre-requisite: CIT 1702 OR Consent of Instructor. Lecture: 0.3 (4.5 contact hours).
Components: Lecture

CIT 1672(0.5) Course ID: 016327
Enhanced Switching
Describes virtual LAN (VLAN) basics and implementation. Pre-requisite: CIT 1671 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1673(0.6) Course ID: 016328
Routing Processes
Covers operations of routers in a small network including addressing, services, and security. Pre-requisite: CIT 1672 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1674(0.6) Course ID: 016329
Inter-VLAN Routing
Describes the operation and configuration of routing between VLANs in a small network. Helps students configure and troubleshoot routers and switches and resolve common issues. Pre-requisite: (CIT 1672 AND CIT 1673) OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1675(0.5) Course ID: 016330
Routing Protocols & RIP
Describes dynamic routing protocols. Covers basic concepts and configuration of RIP v1 and RIP v2. Pre-requisite: CIT 1673 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1676(0.5) Course ID: 016331
OSPF
Describes the operation and basic configuration of single-area OSPF routing in a small network. Pre-requisite: CIT 1675 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1677(0.5) Course ID: 016332
Access Control Lists
Describes standard, extended, and named access control lists (ACLs), for IPv4 and IPv6 in a small network. Pre-requisite: CIT 161 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1678(0.5) Course ID: 016333
DHCP and NAT
Describes operations and configuration of DHCP on routers in a small network. Describes the operation and configuration of static NAT, dynamic NAT, and port address translation (PAT). Pre-requisite: CIT 1677 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1701(0.6) Course ID: 007013
Database Concepts
Provides an overview of database and database management system concepts. Pre-requisite: (CIT 105 OR CST 105 OR IMD 103) AND (MAT 085 OR MAT 126) OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1702(1) Course ID: 007014
Database Modeling and Design
Provides an overview of database internal design models, normalization, and network data models. Pre-requisite: CIT 1701 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1703(0.8) Course ID: 007015
Database Implementation
Provides an overview of designing a database model and implementation. Introduces Structured Query Language (SQL). Pre-requisite: CIT 1702 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1704(0.6) Course ID: 007016
Database Admin and Management
Provides an overview of optimization strategies and methods including administration, performance tuning, backup, and recovery. Pre-requisite: CIT 1703 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1711(1) Course ID: 016334
Database Creation using SQL
Introduces SQL techniques used in database/table creation. Pre-requisite: CIT 120 AND CIT 170, OR consent of instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 1712(1) Course ID: 016335
Basic Data Retrieval using SQL
Examines SQL techniques for data retrieval and organization. Pre-requisite: CIT 1711. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 1713(1) Course ID: 016336
Advanced SQL Techniques
Applies SQL techniques for multiple table queries, functions and subqueries. Pre-requisite: CIT 1712. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 1801(0.8) Course ID: 007017
Security Concepts
Introduces basic security concepts and methodologies. Assist in the preparation of the COMPTIA Security+ examination. Pre-requisite: (CIT 105 OR CST 105) AND (CIT 160 OR CIT 161) OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture
CIT 1002(0.8) Course ID: 007018
Threats and Vulnerabilities
Introduces threats and vulnerabilities in relation to computer and network devices. Pre-requisite: CIT 1801 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1003(0.8) Course ID: 007019
Network Security
Introduces basic network security concepts and methodologies including application, data, and host security, access control, and identity management. Pre-requisite: CIT 1802 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1004(0.6) Course ID: 007020
Cryptography
Introduces cryptography, tools, and management of keys and certificates. Pre-requisite: CIT 1803 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1821(0.8) Course ID: 007021
Security Defense and Protocols
Presents information and skills required to secure computers and networks from attacks. Pre-requisite: CIT 180 OR consent of instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1822(0.8) Course ID: 007022
Firewalls
Presents information and techniques for configuring and using firewalls to secure computers and networks. Pre-requisite: CIT 1821 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1823(0.6) Course ID: 007023
Perimeter Testing
Performs methods and skills for conducting perimeter defense testing against attacks. Pre-requisite: CIT 1822 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1841(0.8) Course ID: 007025
Ethical Hacking concepts
Present concepts about ethical hacking. Pre-requisite: CIT 180 OR consent of instructor. Lecture: 0.6 credits (12 contact hours).
Components: Lecture

CIT 1842(1) Course ID: 007026
Computer/Network Attacks
Presents various types of attacks and exploits against computers and networks. Pre-requisite: CIT 1841 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1843(0.8) Course ID: 007027
Malicious Software and Defense
Presents effective defensive techniques against real attacks. Pre-requisite: CIT 1842 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1844(0.4) Course ID: 007028
Incident Handling
Provides concepts and techniques for proper incident handling and documentation. Pre-requisite: CIT 1843 OR Consent of Instructor. Lecture: 0.4 credits (6 contact hours).
Components: Lecture

CIT 2131(0.6) Course ID: 007029
Window OS Installation & Setup
Provides concepts and skills for installation, setup, and management of the current Microsoft Windows operating system. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 111 AND (CIT 160 OR CIT 161) OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2132(0.6) Course ID: 007030
Network Connectivity
Provides concepts and skills for managing network connections, configuring IP settings, and network settings in the current Microsoft Windows operating system environment. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2131 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2133(0.6) Course ID: 007031
Windows OS Resources
Provides concepts and skills for managing user accounts and access to resources in the current Microsoft Windows operating system environment. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2132 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2134(0.6) Course ID: 007032
Mobility Configurations
Provides concepts and skills for configuring mobility options and security in the current Microsoft Windows operating system environment. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2133 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2135(0.6) Course ID: 007033
Monitoring Windows Systems
Provides concepts and skills for managing updates and local performance monitoring, monitoring system performance and resource usage, configuring backups, system recovery, and troubleshooting the boot process in the current Microsoft Windows operating system environment. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2134 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2141(1) Course ID: 007086
OS Server Concepts
Presents an overview of network concepts such as TCP/IP addressing and sub-netting. Provides concepts and skills to install and setup Windows Server. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: (CIT 111 AND (CIT 160 OR CIT 161)) OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2142(1) Course ID: 007097
Server Management Services
Presents an overview of network concepts such as DNS, Hyper-V, DCHP, and DFS. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2141 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2143(1) Course ID: 007098
Server Role Policy
Presents skills and knowledge to configure and manage server role policy and security compliance. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2142 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2151(0.75) Course ID: 016337
Initial Server Deployment
Introduces skills necessary to install and configure Microsoft® Windows® Server. Covers initial network installation & configuration of a file server including update policy, file and folder access policies and security at an intermediate level. Pre-requisite: CIT 214 OR Consent of instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2152(0.75) Course ID: 016338
Administering the Server
Introduces skills to administer a Windows Server deployment. Covers server infrastructure monitoring, remote access configuration, and network policy implementation in an enterprise environment. Pre-requisite: CIT 2151 OR Consent of instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2153(0.75) Course ID: 016339
Administering the Domain
Provides students with the knowledge and skills to design, develop, and evaluate databases and web servers including an integrated web database application in e-commerce and Web scripting. Covers creation of a database-driven web site. Pre-requisite: CIT 2152 OR Consent of instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2154(0.75) Course ID: 016340
Advanced Administration Topics
Covers skills needed to administer a Windows Server Domain regarding setup and maintenance of Group Policy infrastructure, advanced networking topics, and DNS deployments. Pre-requisite: CIT 2153 OR Consent of instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2171(0.8) Course ID: 007034
Intro to UNIX/Linux
Introduces basic Unix/Linux concepts. Pre-requisite:CIT 111 AND CIT 160 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 2172(0.8) Course ID: 007035
Accounts, Resources, & Editors
Presents Unix/Linux commands to manage accounts, file systems and resources. Introduces editors for creating text files. Pre-requisite: CIT 2171 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 2173(1.4) Course ID: 007036
File Processing and Lab
Introduces commands and scripts for file processing. Pre-requisite: CIT 2172 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2232(1) Course ID: 016341
Help Desk & Customer Service
Explores help desk concepts and customer service skills. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 2322(1) Course ID: 016342
Help Desk Tools & Techniques
Introduces a variety of tools and techniques to provide user support in help desk operations. Explores troubleshooting problems, help desk operations and software, needs analysis, and facilities management. Pre-requisite: CIT 2321. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 2323(1) Course ID: 016433
End User Support
Explores writing for end users, training end users and other topics related to end user support. Pre-requisite: CIT 2322. Lecture: 1 credit (15 contact hours).
Components: Lecture
CIT 2531(1) Course ID: 016344
Web Servers and Applications
Provides students with the knowledge and skills to design and develop client-side and server-side applications for data driven web sites. Includes development of skills related to the installation and configuration of web servers. Pre-requisite: (CIT 150 AND CIT 170 AND Approved Level I Programming Language) OR Consent of Instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 2532(1) Course ID: 016345
Databases and E-Commerce
Includes the study of databases and web servers in e-commerce, transaction processing, and web scripting. Emphasizes designing and developing a functional e-commerce supporting database for a dynamic web site. Pre-requisite: CIT 2531. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 2533(1) Course ID: 016346
Integrated Web Databases
Provides students with the knowledge and skills to design, develop, and evaluate an integrated web database application. Includes the creation of a functional database driven web site. Pre-requisite: CIT 2532. Lecture: 1 credit (15 contact hours).
Components: Lecture

CIT 2611(0.75) Course ID: 007099
Win Directory Services Overview
Provides knowledge and skills to configure and implement directory services, domains, and user accounts. Pre-requisite: CIT 251 OR Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2612(0.75) Course ID: 007100
Directory Objects & Publishing
Focuses on creation and management of directory objects, trees, and objects and publishing resources. Pre-requisite: CIT 2611 OR Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2613(0.75) Course ID: 007101
Dir Services Policy Group
Explains how to configure group policy settings to manage directory services such as users, desktop environment, software, and security settings. Pre-requisite: CIT 2612 OR Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2614(0.75) Course ID: 007102
Directory Management & Services
Explains how to configure and manage operations, restoration, and replication of Directory Services. Pre-requisite: CIT 2613 OR Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

CIT 2641(0.75) Course ID: 007037
Windows Server Deployment
Plan infrastructure deployment and services including server roles, access control, and group policy. Pre-requisite: (CIT 261 AND CIT 214 OR CIT 262) OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

CIT 2642(0.75) Course ID: 007038
Planning Directory Services
Plan application, file, and print services. Pre-requisite: CIT 2641 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

CIT 2643(0.75) Course ID: 007044
Server Management Strategies
Design and manage infrastructure and server strategies. Pre-requisite: CIT 2642 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

CIT 2644(0.75) Course ID: 007039
Windows Server Security
Provides management and monitoring of windows servers including security. Pre-requisite: CIT 2643 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.25 credits (7.5 contact hours).
Components: Lecture

CIT 2841(0.6) Course ID: 007040
Computer Forensics Overview
Provides a computer forensics overview and presents concepts about forensics investigations. Pre-requisite: CIT 180 or consent of instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2842(0.4) Course ID: 007041
Forensics Lab Setup
Provides concepts and skills for setting up a computer forensics lab and data acquisition. Pre-requisite: CIT 2841 OR Consent of Instructor. Lecture: 0.4 credits (6 contact hours).
Components: Lecture

CIT 2843(1) Course ID: 007042
Digital Evidence Procurement
Provides basic knowledge on methods and processes for collection and analyzing digital evidence. Pre-requisite: CIT 2842 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2844(1) Course ID: 007043
Investigations and Reporting
Provides basic knowledge on methods and processes for investigations and reporting. Pre-requisite: CIT 2843 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2881(1) Course ID: 007103
Network Security Basics
Identifies importance of computer ethics in relation to hacking and defending against computer and network threats. Pre-requisite: (CIT 180 AND Level 1 Network Technologies Specialization Sequence) OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2882(1) Course ID: 007104
Network Attacks & Lab
Provides students with the knowledge and skills to defend against a variety of computer and network attacks. Focuses on the offensive techniques used to launch attacks. Pre-requisite: CIT 2881 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.5 credit (15 contact hours).
Components: Laboratory, Lecture

CIT 2883(1) Course ID: 007105
Network Vulnerability & Lab
Provides students with the knowledge and skills necessary to identify and proactively defend against computer and network attacks. Focuses on the defensive techniques required to defend computers and networks. Pre-requisite: CIT 2882 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours). Lab: 0.5 credits (15 contact hours).
Components: Laboratory, Lecture

CLA 131(3) Course ID: 000274
Medical Terminology from Greek and Latin
Latin and Greek roots, prefixes, and suffixes as found in medical terminology. Primarily for pre-medical, pre-dental, pre-nursing, and pre-veterinary students, but others will be admitted for help in vocabulary building. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Other

CMM 110(3) Course ID: 001812
Fundamentals of Machine Tools - A
Provides the basic principles needed for a solid foundation in machine tool technology. Covers shop safety, bench work, drill press, power saw, measurement, and mills. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture Attributes: Technical

CMM 112(4) Course ID: 001813
Fundamentals of Machine Tools - B
Provides the basic principles needed for a solid foundation in machine tool technology. Includes shop safety, bench work, drill press, power saw, measurement, and lathes. Pre-requisite: (CMM 110 with a grade of C or greater) OR Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture Attributes: Technical

CMM 114(7) Course ID: 001814
Fundamentals of Machine Tools
Provides the skills and knowledge that is needed to progress through the machine tool program. Includes safety and bench work. Introduces the basic power equipment and machine tools that are used in the machine trades which includes: drill presses, power saws, measurement instruments, mills and lathes. Lecture: 3.0 credits (45 contact hours). Lab: 4.0 credits (120 contact hours/30:1 ratio).
Components: Laboratory, Lecture Attributes: Technical

CMM 118(2) Course ID: 001815
Metrology/Control Charts
Provides the basic principles in using precision measurement instruments and their application to inspection and quality control. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CMM 120(3) Course ID: 001816
Applied Machining I
Consists of intermediate level skills using machining machines and surface grinders. Includes the selection of grinding wheels. Pre-requisite: (CMM 110 and 112) or (CMM 114 with a grade of C or greater) OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture Attributes: Technical
CMM 122(3) Course ID: 001817
Applied Machining II
Carries the student to higher levels in the operation of machine tools. Pre-requisite: (CMM 120 with a grade of C or greater) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
CMM 124(6) Course ID: 001818
Applied Machining
Allows the student to begin performing skills that will combine the use of different types of machine and begin to give them a complete picture of the machine tool career. Pre-requisite: (CMM 110 and CMM 112) or (CMM 114) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 6.0 credits (165 contact hours).
Components: Lecture
Attributes: Technical
CMM 130(3)
Course ID: 001819
Manual Programming
Introduces the student to CNC codes and programming, set-up and operation of CNC machine tools. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture
Attributes: Technical
CMM 132(3)
Course ID: 001820
CAD/CAM/CNC
Introduces the student to CAD/CAM/CNC systems which includes CAM software. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture
Attributes: Technical
CMM 134(6)
Course ID: 001821
Manual Programming CAD/CAM/CNC
Introduces the student to CAD/CAM/CNC systems, CNC format, the Cartesian Coordinate System, CNC codes and programming, set-up and operation of CNC machine tool. Pre-requisite: (CMM 110 and CMM 112) or (CMM 114) with a grade of C or greater) or Consent of Instructor. Lecture: 2.0 credits (30 contact hours); Laboratory: 4.0 credits (120 contact hours/30:1 ratio).
Components: Laboratory, Lecture
Attributes: Technical
CMM 138(6)
Course ID: 006243
Intro. to Programming & CNC Machines
Introduces CAD/CAM and CNC equipment. Covers program codes and setup operations used on a variety of machine tools including technologies like waterjet. Pre-requisite: (CMM 110 and CMM 112) or (CMM 114) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 6.0 credits (150 contact hours) (30:1 Ratio Lab).
Components: Lecture
Attributes: Technical
CMM 150(2)
Course ID: 005089
Shop Theory
Covers shop theory, processes, and basic concepts of machine tool applications utilized in the tool and die field. Includes areas and machine concepts: safety, measurement, layout work, bench work, saws, drills, drilling machines, mills and lathes. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical
CMM 151(3)
Course ID: 005090
Machinery’s Handbook and Metalurgy
Introduces the Machinery’s Handbook as a reference source for solving manufacturing problems and provides a working knowledge of the principles and concepts contained in the Handbook. Explores processes involved in heat-treating steels to a specific hardness, toughness, wear capability. Covers the identification, classification, application, and processing of Tool Steels. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
CMM 152(3)
Course ID: 005091
Jigs, Fixtures and Gaging
Introduces jigs, fixtures and work holding devices, including separate uses and principles. Applies machining processes to design jigs and fixtures. Uses print knowledge to identify part datums for gaging points. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
CMM 153(3)
Course ID: 005092
Mold Theory
Presents mold-making including thermoplastic and thermosetting materials, compression mold, transfer mold, injection molds and mold components, the heating and cooling of molds and the methods of producing cores and cavities. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
CMM 154(3)
Course ID: 005093
Die Theory
Presents basic die making including die sets, punch press, blanking dies, piercing dies, screw and dowel holes, punch and punch blocks, die life, bending dies, pilots, die block construction, stock strippers, stock guides, progressive dies, stock strips and secondary operations of notch, trim, and shave. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
CMM 155(2)
Course ID: 005527
Jigs, Fixtures and Gaging Lab
Provides practical experience in construction and application of jigs, fixtures and work holding devices. Includes applying metrology equipment to fixtures in part and stamping evaluation. Pre-requisite: CMM 152. Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
CMM 160(4)
Course ID: 005355
Basic Bench and Machine Processes
Provides skills and knowledge needed to progress through the machine tool program. Includes safety and bench work. Applies knowledge to a tool and die environment. Introduces the basic power equipment and machine tools used in a tool and die shop. Lab: 4.0 credits (120 contact hours).
Components: Laboratory
Attributes: Technical
CMM 210(3)
Course ID: 001822
Industrial Machining I
Covers the classification of metals, identification of tool steels and their applications. Requires the student to perform advanced machining operations that simulate industry standards. Pre-requisite: (CMM 122 or 124) with a grade of C or greater) or Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory, Lecture
Attributes: Technical
CMM 212(3)
Course ID: 001823
Industrial Machining II
Permits the student to receive instruction in any area where advanced work is needed or an area where there is student interest. Pre-requisite: (CMM 210 with a grade of C or greater) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
CMM 214(6)
Course ID: 001824
Industrial Machining
Covers the classification of metals, identification of tool steels and their applications. Requires the student to perform advanced milling machine operations that simulate industry standards. Includes special projects in this course so the student will receive instruction in a specific area. Pre-requisite: (CMM 122 or CMM 124) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 6.0 credits (180 contact hours).
Components: Lecture
Attributes: Technical
CMM 218(8)
Course ID: 005530
Advanced Machining Techniques for Manufacturing
Allows for construction of sinker electrodes in the production of die and mold forms. Includes wire electrodischarge machines (edm) machining of die sections, punch retainers, stripper plates, machine forms and use of cylindrical grinder ID and OD and angular grinding on die and mold components. Pre-requisite: CMM 216 with a grade of C or greater. Lecture: 2.0 credits (30 contact hours). Laboratory: 6.5 credits (180 contact hours).
Components: Lecture, Laboratory
CMM 220(4)
Course ID: 001825
Advanced Industrial Machining I
Allows for construction of electrodes and the production of parts by the use of an Electrical Discharge machine. (National Standards require EDM and cylindrical grinder training. Colleges lacking this equipment can only present theory only. KCTCS is presently trying to acquire EDM and cylindrical grinders.) Pre-requisite: (CMM 130 and CMM 132) or (CMM 134 and CMM 212 or CMM 214) with a grade of C or greater) or Consent of Instructor. Laboratory: 4 credits (120 contact hours/30:1 ratio).
Components: Laboratory
Attributes: Technical
CMM 222(2)
Course ID: 001826
Advanced Industrial Machining II
Advances students to a higher level of industrial standards by exposing them to additional tasks using a cylindrical grinder. **National Standards require EDM and cylindrical grinder training. Those programs lacking this equipment can only present theory. KCTCS is presently trying to acquire EDM and cylindrical grinders. Pre-requisite: (CMM 212 or CMM 214 with a Grade of C or greater) or Consent of Instructor. Lab: 2.0 credits (60 contact hours/30:1 ratio).
Components: Laboratory
Attributes: Technical
CMM 224(6)
Course ID: 001827
Advanced Industrial Machining
Designed to allow for the construction of electrodes and the production of parts by the use of an Electric Discharge Machine (EDM), cylindrical grinder, and other type of grinders. **National Standards require EDM and cylindrical grinder training. Colleges lacking this equipment can only present theory. KCTCS is presently trying to acquire EDM and cylindrical grinders. Pre-requisite: (CMM 134 and (CMM 212 or CMM 214) with a grade of C or greater) or Consent of Instructor. Laboratory: 6.0 credits (180 contact hours or 270 Clinical Contact).
Components: Laboratory
Attributes: Technical
CMM 230(6)
Course ID: 001828
Instructor Consent Required
Introduces the student to conversational programming of CNC machine tools. Pre-requisite: Consent of Instructor. Lecture/Lab: 6.0 credits (150 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
CMM 234(6)
Course ID: 006244
CNC Machines & Coding Practices
Introduces the student to conversational programming of CNC machine tools to include conversational setup and run options found on a CNC water jet machine. Pre-requisite: (CMM 130 and CMM 132) or (CMM 134 or CMM 138) with a grade of C or greater) or Consent of Instructor. Lecture/Lab: 6.0 credits (150 contact hours), (30:1 Ratio Lab).
Components: Lecture
Attributes: Technical
CMM 240(6)
Course ID: 001829
Introduction to 3-D Programming
Introduces 3-D Programming using CAM systems to effect engineering changes that enhance productivity. Uses CAM system to create and produce complex 3-D parts. Pre-requisite: (CMM 130 and CMM 132) (or CMM 134 or CMM 138) with a grade of C or greater) or Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Lab: 4.0 credits (120 contact hours or 180 clinical contact).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
CMM 244(6)  
Course ID: 006245  
**Advance Programming/Setup Practices**
Uses CAM systems to effect engineering changes that enhance productivity to create and produce complex shapes on the CNC mill, lathe, EDM and water jet machines.  
Pre-requisite: (CMM 2301 and CMM 2302) or (CMM 230) with a grade of C or greater) or consent of instructor. Lecture/Lab: 6 credits (150 contact hours).

Components: Lecture  
Attributes: Technical

CMM 298(1)  
Course ID: 001830  
**Instructor Consent Required**
Practicum: Provides supervised on-the-job work experience related to the student’s educational objectives. (Students participating in the Practicum do not receive compensation.)  
Pre-requisite: Permission of the Instructor. Practicum: 1.0 credit (75 contact hours).

Components: Practicum  
Attributes: Technical

CMM 299(1)  
Course ID: 001831  
**Instructor Consent Required**
Cooperative Education Program: Provides supervised on-the-job work experience related to the student’s educational objectives. (Students participating in the coop do receive compensation.)  
Pre-requisite: Permission of Instructor. Co-Op: 1.0 credit (75 contact hours).

Components: Co-Op  
Attributes: Technical

CMM 301(3)  
Course ID: 005085  
**Instructor Consent Required**
Introduction to Conversational Programming: Introduces students to conversational programming guidelines which will include program preparation, conversational input, and minor editing.  
Pre-requisite: Consent of Instructor. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (60 contact hours).

Components: Lecture  

CMM 230(2)  
Course ID: 005086  
**Conversational Editing and Subroutines**
Introduces students to performing editing routines, to subroutines, and to programs that contain loops. Requires students to interpret error messages from the control.  
Pre-requisite: CMM 230 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (60 contact hours).

Components: Lecture  

CMM 240(3)  
Course ID: 005088  
**Introduction to 3D Code Sequencing and Tool Path Production**
Introduces students to creation of 3-D models and allows use of those models to be used in creation of tool paths for CNC machine tools. Pre-requisite: (CMM 130 and CMM 132) or (CMM 134 with a grade of C or greater) or Consent of Instructor. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (60 contact hours).

Components: Lecture  

CMM 105(3)  
Course ID: 000292  
**Multimedia Production and Applications I**
Students are introduced to the technologies and applications of multimedia systems including production, presentation, and transmission of video, voice, and data.  
Lecture: 2 hours; Laboratory: 2 hours.

Components: Laboratory, Lecture  
Attributes: Technical

CMM 120(1)  
Course ID: 000293  
**Employability Skills Seminar**
This course will focus on those skills necessary for job securedment such as self-assessment, resume writing, interview techniques, job search, job marketing strategies, and desired attributes for on-the-job success. Lecture: 1 hour. Offered on a Pass/Fail basis only.

Components: Lecture  
Attributes: Other

CMM 142(1 - 4)  
Course ID: 000295  
**Communications Practicum**
Student works a minimum of two hours each week with the college newspaper. Practicum: 1-4 credit hours (30-120 contact hours). Course may be repeated for a total of 4 credit hours.

Components: Practicum  
Attributes: Other

CMM 155(3)  
Course ID: 006257  
**Introduction to Broadcasting**
Introduces the history of the broadcast media in the United States and to current operating practices including Internet distribution. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: Other

CMM 266(3)  
Course ID: 006258  
**Basic Television Production**
Introduces the principles and techniques of field and studio video production and provides practical application in general broadcast station operations. Lecture: 2.0 credits (30 contact hours), Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture  
Attributes: Other

**COED Cooperative Education**

COED 199(1 - 8)  
Course ID: 000309  
**Cooperative Education: (Associate in Applied Science Degree, Diplomas, and Certificate Programs)**
Cooperative Education is a planned and evaluated work experience related to the student’s educational objective for which the student receives both financial remuneration and academic credit. One credit hour is awarded for completion of additional required activities. While the maximum amount of credit granted for cooperative education experience varies by curriculum, the amount may never exceed eight hours in an Associate in Applied Science Degree, diploma or certificate program. This course is available only to students enrolled in Associate in Applied Science Degree, diploma and certificate program that list Cooperative Education as an approved course. Co-op: 1-8 hours. Pre-requisite: Completion of at least 12 credit hours in the Associate in Applied Science Degree, diploma or certificate program of study and/or marketable skills in the area in which the student in enrolled, and minimum cumulative grade point average (GPA) of 2.0.

Components: Co-Op  
Attributes: Technical

COED 198(1 - 9)  
Course ID: 005285  
**Instructor Consent Required**
Practicum: Provides a planned and evaluated work experience related to the student’s educational objective for which the student receives academic credit but no financial remuneration. Practicum: 1-9 credits (45-405 contact hours).  
Pre-requisite: Consent of Instructor.

Components: Practicum  
Attributes: Technical

COED 199(3)  
Course ID: 001203  
**Cooperative Education I**
Cooperative Education I is a planned and evaluated work experience related to the students educational objective. The student receives both financial and remuneration and academic credit for this class. One credit hour is awarded for successful completion of 60 hours of approved work experience. Pre-requisite:Co-requisite: Permission of instructor.

Components: Co-Op  
Attributes: Technical

**COM Communications**

COM 101(3)  
Course ID: 000310  
**Introduction to Communications**
Introduces the process of communication as a critical element in human interaction and in society. Enhances effective communication and informed use of the mass media.  
Pre-requisite Or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: SB - Social Behavior Science

COM 181(2)  
Course ID: 000311  
**Basic Public Speaking**
Applies the basic principles and techniques in research, organization, and delivery of speeches for informative and persuasive speaking purposes. Provides practical platform experience in developing speaking abilities to enable the student to communicate orally in clear, coherent language appropriate to the purpose, occasion, and audience.  
Pre-requisite: Current KCTCS placement scores for college level reading and writing OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: OC - Oral Communication, Course Also Offered in Modules

COM 184(1)  
Course ID: 000313  
**Intercollegiate Debating**
Preparation for and participation in intercollegiate debating. May be repeated to a maximum of two credits.

Components: Lecture  
Attributes: Other

COM 205(3)  
Course ID: 016093  
**Business and Professional Communication**
Provides opportunity to examine and develop oral communication strategies appropriate to business and professional environments. Includes oral presentations, interpersonal communication strategies, intercultural communication, interviewing, communicating in teams, leadership communication and conflict resolution skills. Does not substitute for COM 181 for Business transfer students.  
Pre-requisite: Current KCTCS placement scores for College level reading and writing OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: OC - Oral Communication

COM 249(3)  
Course ID: 000314  
**Mass Media and Mass Culture**
Examines the interplay between the technology and content of the mass communications media and culture.  
Pre-requisite: COM 101 or SOC 101. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Course Equivalents: SOC 249  
Attributes: SB - Social Behavior Science

COM 252(3)  
Course ID: 000315  
**Introduction to Interpersonal Communication**
Examines basic verbal and nonverbal concepts affecting the communication process in various interpersonal contexts. Requires participation in written and oral activities designed to develop and improve interpersonal skills. Includes perspective-taking, relationship and conversation management, effective listening, conflict management, communication climate, communication anxiety, and cultural/gender differences in interpersonal communication.  
Pre-requisite Or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: OC - Oral Communication, Course Also Offered in Modules
COM 254(3)  Course ID: 004552
Introduction to Intercultural Communication
Introduces intercultural communication with an emphasis on the relationships between culture and communication, social/psychological variables, verbal/nonverbal language systems, intercultural communication perceptions, and conflict resolution. Includes the practical application of contemporary issues in cross-cultural interaction, media representation, and daily social interactions to intercultural communication concepts. Pre-requisite or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, SB - Social Behavior Science

COMM 281(3)  Course ID: 000316
Communication in Small Group
Examines communication processes in small group situations including conflict, leadership, and decision making. Includes participation in group discussion and the development of skills in analyzing group performance. Pre-requisite Or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

COMM 287(3)  Course ID: 000317
Persuasive Speaking
Examines the processes involved in attitude change, with emphasis on the preparation and delivery of persuasive messages. Pre-requisite: COM 181. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: OC - Oral Communication

COMM 288(3)  Course ID: 000318
Oral Interpretation
Analyzes prose and poetry for oral interpretation. Helpful to those who wish to teach in literature. Pre-requisite Or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

COMM 289(3)  Course ID: 004257
Special Topics in Communication
A sophomore level study of a selected topic in communication. Pre-requisite: COM 181 or COM 252 or consent of instructor. Lecture: 3 hours.
Components: Lecture
Attributes: Other

COMM 181(1)  Course ID: 015806
Public Speaking Essentials
Applies the basic principles and techniques in research, organization and delivery of speeches appropriate to the purpose, occasion, and audience. Pre-requisite: Current KCTCS placement scores for college level reading and writing OR Consent of Instructor. Lecture: 1.0 credit (15.0 contact hours).
Components: Lecture

COMM 181(1)  Course ID: 015807
Basic Informative Speaking
Provides practical platform experience in developing speaking abilities to enable the student to communicate orally in clear, coherent language appropriate to the presentation of informative speeches. Pre-requisite: COM 1811. Lecture: 1.0 credit (15.0 contact hours)
Components: Lecture

COMM 181(1)  Course ID: 015808
Basic Persuasive Speaking
Provides practical platform experience in developing speaking abilities to enable the student to communicate orally in clear, coherent language appropriate for the presentation of persuasive speeches. Pre-requisite: COM 1812. Lecture: 1.0 credit (15.0 contact hours).
Components: Lecture

COMM 205(1)  Course ID: 016231
Communication Foundations
Demonstrates the role of oral communication in culturally diverse business and professional settings and develops an understanding of self-concept and perception-impression management. Pre-requisite: Current KCTCS placement scores for college level Reading and Writing or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

COMM 2052(1)  Course ID: 016232
Communication In A Job Search
Provides experience in communication developing communication skills for use in technology-based job exploration with an emphasis on ethics, interviewing, active listening, and verbal and nonverbal communication for use in culturally diverse business and professional settings. Pre-requisite: COM 2051. Lecture: 1 credit (15 contact hours).
Components: Lecture

COMM 2053(1)  Course ID: 016233
Communication In Organizations
Provides experience in developing communication competence in leadership roles, conflict management, and effective, informative, and persuasive communication skills for use in culturally diverse business and professional settings. Pre-requisite: COM 2052. Lecture: 1 credit (15 contact hours).
Components: Lecture

COMM 2521(1)  Course ID: 005800
Looking In
Examines basic verbal and nonverbal concepts affecting the interpersonal process. Includes both verbal and nonverbal elements affecting communication between individuals in settings ranging from the family, peer groups, and work contexts. Pre-requisite Or Co-requisite: Current KCTCS placement scores for college level reading and writing, or consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

COMM 2522(1)  Course ID: 005801
Communicating and Responding
Examines basic verbal and nonverbal concepts affecting the communication process in various interpersonal contexts. Topics include both verbal and nonverbal elements affecting communication between individuals in setting ranging from the family, peer groups, and work contexts. Pre-requisite: COM 2521. Lecture: 1 credit (15 contact hours).
Components: Lecture

COMM 2523(1)  Course ID: 005802
Looking at Relational Dynamics
Examines basic verbal and nonverbal concepts affecting the communication process in various interpersonal contexts. Includes the basic needs in developing interpersonal relationship with emphasis on the types of relations and the components involved in such relationships including compliance-gaining and conflict resolution. Pre-requisite: COM 2522. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 105(14)  Course ID: 005534
Esthetician I
Covers the history of esthetics, today’s career opportunities, and professional image.Includes Kentucky Statutes and Regulations, analysis of skin types for facial products, massage techniques, and hair removal. Provides guidelines that prevent the contamination of products, implements, and equipment for the prevention of disease. Includes the study of structure, composition, and function of the skin. Pre-requisite: (High school diploma or equivalent) and admission to esthetician program. Lecture/ Lab: 14.0 credit hours (360 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

COS 114(14)  Course ID: 001213
Cosmetology I, 1-1
This course is designed to cultivate proper attitude and behavior patterns needed to create a successful Cosmetologist. Kentucky Statutes and regulations, safety, bacteriology, sanitation, infection control, first aid treatment, structure and disorders of the nail are studied. An introduction to the basic fundamentals of hair, skin and nail care, hair styling and shaping, manicures and pedicures, chemical and thermal services, and wigs. The student in developing manipulative skills and practicing procedures utilizes mannequins and classmates. After 300 hours student begin to apply procedures on clients under the direct supervision of the instructor.
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

COS 116(14)  Course ID: 001214
Cosmetology II, 8-2
A study of basic chemistry with emphasis placed on the physical and chemical properties of cosmetic materials. Electricity and light therapy are discussed and an in-depth study of anatomical structures affected bycosmetological services including disorders of the skin, scalp, hair, and nails. The instructor gives the students progressively more difficult assignments with close supervision.
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

COS 133(1-8)  Course ID: 001223
Instructor Consent Required
Individual Requirements I
Provides additional lecture/laboratory time to meet licensure requirements of 1800 clock hours. Pre-requisite: Consent of Instructor. Lecture: 1.0 - 8.0 credit hours (15 -120 contact hours). Laboratory: 1.0 - 8.0 credit hours (30 - 240 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 150(13)  Course ID: 001224
Basic Nail Tech
Provides knowledge of the art and science of nail technology including the rules and regulations of the State Board of Cosmetology as they apply to the salon. Includes bacteriology and infection control through the practice of sanitation procedures, the study of the cells, structure of the hand, arm, nail and their diseases and disorders, and the study of beauty salon management including the practice of interacting with clients, co-workers, and supervisors. (Students practice on classmates and progress to work on clients.) Lecture: 5 credits (75 contact hours), Laboratory: 8 credits (240 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 152(13)  Course ID: 001225
Applied Nail Technology
Continues the study of nail technology. Includes a comprehensive written and practical exam in preparation for state board licensure. Pre-requisite: COS 150. Lecture: 5 credits (75 contact hours), Laboratory: 8 credits (240 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 205(14)  Course ID: 005540
Esthetician II
Covers organic/inorganic chemistry and cosmetic ingredients. Focuses on facial enhancements through the use of make-up artistry and application including hair removal procedures and applications. Includes the study of skin conditions, disorders and diseases, and those treatable by the esthetician. Explains treatments related to skin and skin disorders. Pre-requisite: COS 105 or Consent of Instructor. Lecture/Lab: 14.0 credit hours (360 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
COS 210(13)  Course ID: 001233
Student Teaching I
Introduces teaching methods used in training cosmology and nail technology students. Inclusive of theory, class methods of lecture, media use and testing methods. Introduces methods used to teach the practical application of skills. Pre-requisite: Cosmetologist's License; One year work experience, apprentice cosmologist instructor’s license. Lecture: 3 credits (45 contact hours). Laboratory: 10 credits (300 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 212(13)  Course ID: 001234
Student Teaching II
Expands the apprentice instructor’s ability to apply various methods used to train cosmology and nail technology students. Pre-requisite: COS 210. Lecture: 3 credits (45 contact hours). Laboratory: 10 credits (300 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 214(13)  Course ID: 001235
Student Teaching III
Provides preparatory work to prepare the apprentice instructor for the Kentucky Board of Hairdressers instructor exam. Pre-requisite: COS 212. Lecture: 3 credits (45 contact hours). Laboratory: 10 credits (300 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 216(20)  Course ID: 015567
Teaching I
Introduces teaching methods used in training cosmology, esthetics, and nail technology students. Demonstrates teaching methods of theory, media use, and testing methods. Develops and applies the methods used to teach the practical application of skills. Pre-requisite: Cosmetologist’s License, one year work experience, and Apprentice Cosmetologist instructor license. Lecture: 6.0 credits (90 contact hours). Lab: 14.0 credits (420 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 217(20)  Course ID: 015568
Teaching II
Expands teaching methods used in training cosmology, esthetics, and nail technology students. Demonstrates advanced teaching methods of theory, media use, and testing methods. Develops and applies methods used to teach the practical application of skills. Provides preparatory work to prepare the apprentice instructor for the Kentucky Board of Hairdressers and Cosmetologist’s instructor examination. Pre-requisite: COS 216. Lecture: 6.0 credits (90 contact hours). Lab: 14.0 contacts (420 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 218(14)  Course ID: 001215
Cosmetology III, 6-3
Provides knowledge of the structure and function of the human body, including the interaction of all the body systems in maintaining homeostasis. All phases of beauty salon management are studied, including interacting with clients, co-workers, and supervisors. Laboratory experience is advanced with performance expectations set at a higher level.
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

COS 220(12)  Course ID: 001216
Cosmetology IV, 6-4
This course is designed for a total review of the cosmology curriculum. A comprehensive written and practical exam is given in preparation for the State Board licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision.
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical
CRI 107(1) Course ID: 004194
Introduction to Firearms
Provides a working knowledge of the use, care, and safety of firearms. The course is of nomenclature design and it will be at the discretion of each individual college whether live ammunition will be utilized by the students as faculty to demonstrate the firing of weapons and marksmanship practice. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 1.0 credit (15 contact hours).
Components: Lecture Attributes: Technical

CRI 108(4) Course ID: 007357
Advanced Firearms and Less Than Lethal Weapons
Provides an advanced working knowledge of the use, care, safety, and legal application of firearms and less than lethal weapons. Includes live fire with the use of pistol, shotgun/ rifle, and less than lethal weapons. Pre-requisite: CRJ 107 and (Current placement scores for RDG 030 or higher or completion of RDG 020) and (Current placement for ENC 091 or higher or completion of ENC 090). Lecture: 2.0 credits (30 contact hours); Lab: 2.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

CRI 110(3) Course ID: 004195
Principles of Asset Protection
Provides an introductory understanding of private security procedures. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRI 201(3) Course ID: 008089
Introduction to Criminalistics
Provides a basic knowledge of crime scene protection, collection, preservation, and identification of evidence, including proper search, dusting latent prints, casting fingerprint classification, and use of crime laboratory in crime detection and prosecution. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRI 202(3) Course ID: 004196
Issues and Ethics in Criminal Justice
Provides an understanding of the issues and ethical dilemmas confronting practitioners within the criminal justice system. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRI 203(3) Course ID: 004197
Community Corrections: Probations & Parole
Provides an in-depth study of the history and current processes and procedures of probation, parole, and intermediate sanctions that makes up community corrections. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRI 204(3) Course ID: 004198
Criminal Investigations
Provides the fundamentals of crime scene investigations, which includes searching and recording of the scene, collection and preservation of physical evidence, interviews and interrogation of victims, witnesses, and suspects. Components: Lecture Attributes: Technical
CRJ 218(3) Course ID: 004193
Police Supervision
Provides an overview of the administrative, supervisory, and leadership roles that are required within a law enforcement agency. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090) AND CRJ 100 or CRJ 215 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 219(4) Course ID: 007358
Police Recruit Defensive Tactics
Provides the proper methods of police defensive tactics, emphasizes necessary skills, and establishes an understanding of use of force policies and legal implications. Pre-requisite: CRJ 215 and (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement for ENC 091 or higher or completion of ENC 090). Lecture: 1.0 credit (15 contact hours). Lab: 3.0 credits (91.5 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRJ 220(3) Course ID: 005220
Introduction to Computer Forensics for Criminal Justice
Introduces the study of cybercrime with an emphasis on planning, detection, and response with the goals of countering and overcoming hacker attacks and computer-related offenses. Materials includes will be logged and forensic tools will be used to gather court-admissible evidence. Pre-requisite: Completion of an approved Computer Literacy Course with a grade of C or greater, or computer literacy demonstrated by competency exam; AND (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 222(3) Course ID: 004205
Prison & Jail Administration
Introduces the correctional procedures and administration of jails and prisons by focusing on historical and current perspectives of penology, administrative responsibilities of correctional leaders, and correctional staff responsibilities. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 224(4) Course ID: 007359
Basic Traffic Collision Investigation
Introduces basic vehicle collision investigation, from a law enforcement perspective, and entails evidence and investigation techniques and mathematical calculations. Pre-requisite: CRJ 204 and MAT 110 and (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement for ENC 091 or higher or completion of ENC 090). Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRJ 225(4) Course ID: 007360
Driving and Traffic Enforcement for Law Enforcement
Provides an understanding of vehicle offenses, tactical police driving, and traffic stops, in a scenario-based environment that demonstrates applied skills. Pre-requisite: CRJ 215 and (Current placement scores for RDG 030 or higher or completion of RDG 020) and (Current placement for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRJ 230(3) Course ID: 006233
Criminal Justice Courtroom Procedures
Covers research, study, and discussion of current and emerging topics, issues, and trends in courtroom procedures. Includes basic courtroom procedures and the roles of the key personnel within the courtroom setting. Includes practical preparation procedures for witness presentation of testimony. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 231(3) Course ID: 006234
Legal Aspects of Corrections
Provides an introduction to the understanding of criminal justice, terrorist organizations. Introduces the student to the diverse definitions of terrorism and the social and political consequences of varying definitions, behavioral aspects of terrorist and the various justifications for terrorist activities. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090).
Components: Lecture Attributes: Technical

CRJ 240(3) Course ID: 006102
Introduction to Corporate & Industrial Security
Includes research, study, and discussion of current and emerging topics, issues, and trends in corporate and industrial security. Covers basic corporate and industrial security procedures and the roles of the key personnel within the private security area. Pre-requisite: (Current placement scores for RDG 030 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 245(3) Course ID: 006232
Introduction to Business and Industrial Fraud
Introduces research, study, and discussion of current and emerging topics, issues and trends in business and industrial fraud. Covers basic concepts of occupational fraud and abuse and the roles of the key personnel within the criminal justice system. Includes practical procedures for detecting, identifying, and investigating business and industrial fraud. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.5 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 277(3) Course ID: 006804
Introduction to Criminology
Provides an introduction to the understanding of criminal behavior by focusing on crime trends and patterns, the amount of crime, and the theories of crime. Theories of crime will include the biological, psychological, sociological, and integrated explanations of behavior. Theories of crime will be utilized to address the procedures and administration of criminal justice in society. Pre-requisite: If yes, list current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 278(3) Course ID: 005781
Terrorism and Political Violence
Provides an introduction to the study of terrorism and terrorist organizations. Introduces the student to the diverse definitions of terrorism and the social and political consequences of varying definitions, behavioral aspects of terrorist and the various justifications for terrorist activities. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090).
Components: Lecture Attributes: Technical

Lecture: 3.0 credits (45 contact hours).

CRJ 290(3) Course ID: 004206
Internship in Criminal Justice
Allows the criminal justice student the opportunity to broaden their educational experience through observation and work assignments at a recognized criminal justice agency. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090) AND Sophomore Standing and completion of at least 12 semester hours of Criminal Justice work. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 295(1) Course ID: 015650
Criminal Justice Capstone
Serves as the capstone course for the Criminal Justice degree program. Integrates prior learning outcomes into a single integrated learning experience. Includes preparation for and completion of the post exit exam that all program graduates must complete. Pre-requisite: (CRJ 100 and CRJ 202 and CRJ 204 and CRJ 216 and CRJ 217) AND OR consent of Program Coordinator. Lecture: 1.0 credit (15 contact hours).
Components: Lecture Attributes: Technical

CRJ 299(1 - 3) Course ID: 004207
Instructor Consent Required
Selected Topics in Criminal Justice
Introduces specialized topics in the field of criminal justice to meet current trends and investigations of contemporary topics in the discipline. The topics of the course and the number of credit hours determined are at the discretion of the instructor and college providing the course. This course may be repeated to a maximum of 6 credit hours. Pre-requisite: (Current placement scores for RDG 30 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 1.0 - 3.0 credits (15 - 45 contact hours).
Components: Lecture Attributes: Technical

CRT Auto Body Repair

CRT 100(2) Course ID: 000928
Introduction to Collision Repair
Introduces the student to safety, sanding, grinding, pulling, roughing and filling; the use of tools and equipment; and preparing and priming automotive panels through lectures and demonstration. Lecture: 2.0 (30 contact hours).
Components: Lecture Attributes: Technical

CRT 130(6) Course ID: 000929
Non-Structural Analysis and Damage Repair
Provides instruction in the replacement and alignment of bolts on automotive parts such as doors, hood, and fenders; as well as instruction on the repair and replacement of non-structural weld-on automotive panels by aligning, welding, cutting and drilling through demonstrations and lectures. Includes instruction on how to repair plastic, fiberglass, SMC and flexible automobile parts. Lecture: 6.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

CRT 131(6) Course ID: 002345
Non-Structural Analysis and Damage Repair Lab
Provides practical experience in the replacement and alignment of bolts on automotive parts such as doors, hood, and fenders; as well as instruction on the repair and replacement of non-structural weld-on automotive panels by aligning, welding, cutting and drilling. Includes instruction on how to repair plastic, fiberglass, SMC and flexible automobile parts. Requires skills that are most effectively taught and practiced on live work; the exact content will be influenced by the live work available. Pre-requisite Or Co-requisite: CRT 130. Lab: 6.0 credits (180 - 270 contact hours).
Components: Laboratory Attributes: Technical
CRT 150(6) Course ID: 000931
Painting and Refinishing
Provides instruction in the use of lacquer, acrylic enamel and base coat/clear coat refinishing products, masking procedures, preparations and paint problems. Lecture: 6.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CRT 151(6) Course ID: 000932
Painting and Refinishing Lab
Provides instruction in the use of lacquer, acrylic enamel and base coat/clear coat refinishing products, masking procedures, preparations and paint problems. The auto and/or autos being used for live work will determine exact content.) Pre-requisite Or Co-requisite: CRT 150. Lab: 6.0 credits (180 - 270 contact hours).
Components: Laboratory
Attributes: Technical

CRT 198(1 - 8) Course ID: 000934
Instructor Consent Required
Practicum
Provides supervised on-the-job work experience related to the students' educational objectives. (Students participating in the practicum do not receive compensation. May be taken for 1-8 credits.) Pre-requisite: Consent of Instructor. Practicum: 1.0 - 8.0 credit hours.
Components: Co-Op
Attributes: Technical

CRT 230(6) Course ID: 000936
Structural Analysis and Damage Repair
Presents instruction on the analysis, repair and replacement of structural panels on unibody automobiles and body and frame alignment on unibody and frame cars. Lecture: 6.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CRT 231(6) Course ID: 000937
Structural Analysis and Damage Repair Lab
Presents instruction on the analysis, repair and replacement of structural panels on unibody automobiles and body and frame alignment on unibody and frame cars. Pre-requisite Or Co-requisite: CRT 230. Lab: 6.0 credits (180 - 270 contact hours).
Components: Laboratory
Attributes: Technical

CRT 250(6) Course ID: 000938
Mechanical and Electrical Components
Provides instruction in the diagnosis, repair, and/or replacement of suspension, steering, electrical, brake, drive train, fuel, exhaust, and restraint systems. Includes theories and concepts of heating and air conditioning systems. Lecture: 6.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CRT 251(6) Course ID: 000939
Mechanical and Electrical Components Lab
Provides practical experience in the diagnosis, repair, and/or replacement of suspension, steering, electrical, brake, drive train, fuel, exhaust, and restraint systems. Includes demonstration of theories and concepts of heating and air conditioning systems. Involves live work on automobiles. Pre-requisite Or Co-requisite: CRT 250. Lab: 6.0 credits (180 - 270 contact hours).
Components: Laboratory
Attributes: Technical

CRT 291(1) Course ID: 000940
Special Projects I
Designed for students to satisfactorily complete collision repair tasks or to enhance their skills in the occupational area. Pre-requisite: Consent of Instructor. Lab: 1.0 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

CRT 293(2) Course ID: 000941
Special Projects II
Designed for students to satisfactorily complete collision repair tasks or to enhance their skills in the occupational area. Pre-requisite: Consent of Instructor. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

CRT 295(3) Course ID: 000942
Special Projects III
Designed for students to satisfactorily complete collision repair tasks or to enhance their skills in the occupational area. Pre-requisite: Consent of Instructor. Lab: 3.0 credits (135 contact hours).
Components: Laboratory
Attributes: Technical

CRT 298(2) Course ID: 000944
Instructor Consent Required
Advanced Practicum
Provides supervised on-the-job work experience related to the students' educational objectives. (Students participating in the Co-op Education program receive compensation for their work. May be taken for 1 - 8 credits.) Pre-requisite: Consent of Instructor. Co-Op: 1.0 - 8.0 credit hours.
Components: Co-Op
Attributes: Technical

CRT 199(1 - 8) Course ID: 000933
Instructor Consent Required
Cooperative Education
Provides supervised on-the-job work experience related to the students' educational objectives. (Students participating in the Co-op Education program receive compensation for their work.) Pre-requisite: Consent of Instructor. Independent Study: 2.0 credits (150 contact hours).
Components: Independent Study
Attributes: Technical

CS 115(3) Course ID: 000321
Introduction to Computer Programming
This course teaches introductory skills in computer programming using a high-level programming language. There is an emphasis on both the principle and practice of computer programming. Covers principles of problem solving by computer and requires completion of a number of programming assignments. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CS 216(3) Course ID: 007199
Introduction to Software Engineering
Software engineering topics include: life cycles, metrics, requirements specifications, design methodologies, validation and verification, testing, reliability and project planning. Implementation of large programming projects using object-oriented design techniques and software tools in a modern development environment will be stressed. Pre-requisites: CS215. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: University Course (University of Kentucky)

CS 221(2) Course ID: 000325
First Course in Computer Science for Engineers
Characteristics of a procedure-oriented language; description of a computer as to internal structure and the representation of information; introduction to algorithms. Emphasis will be placed on the solution of characteristic problems arising in engineering. Pre-requisite: Not open for students who have received credit for CS115. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: University Course (University of Kentucky)

CS 261(3) Course ID: 016137
Social Networks: Methods and Tools
The complex connectedness of the modern society is a multifaceted phenomenon resulting from the growing density of the human population, the advent of fast global mass transportation infrastructure, the emergence of global companies and markets, and spurred by the Internet and its applications such as the Web, Facebook and Twitter. In this course, we learn about graph theory, game theory and computational tools required to model and analyze social networks, matching markets, web search, network externalities, tipping points, information cascades, epidemics, small worlds, and voting schemes. The course requires no programming background and has no university-level Pre-requisites. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: University Course (University of Kentucky)

CS 275(4) Course ID: 007200
Discrete Mathematics
Components: Lecture
Attributes: University Course (University of Kentucky)

CUL 100(2) Course ID: 004209
Introduction to Culinary Arts
Provides an introduction to several aspects of the food industry. Includes an overview of the history of the profession and current career opportunities and trends. Introduces proper terminology for various types of equipment and cooking methods. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

CUL 105(2) Course ID: 004210
Applied Introduction to Culinary Arts
Provides an applied introduction to several aspects of the food industry. Includes an overview of the history of the profession and current career opportunities and trends. Introduces proper terminology for various types of equipment and cooking methods in a laboratory setting. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
CUL 111(4) Course ID: 004211
Garde Manger
This course includes the production of hot and cold sandwiches, hors d’oeuvre, canapés and salads. Garnishing techniques along with cold food production are discussed. Decorative skills as related to buffets and exhibits are explored. Co-requisite: CUL 100 or Consent of Instructor. Components: Laboratory, Lecture Attributes: Technical

CUL 200(2) Course ID: 004212
Sanitation and Safety
Develops an understanding of the basic principles of sanitation and safety and applies them in the food service operations. Reinforces personal hygiene habits and food handling practices that protect the health of the consumer. Lecture 2 credits (30 contact hours) Components: Lecture Attributes: Technical

CUL 211(4) Course ID: 004213
Basic Food Production
This course provides a study of the basic principles of food selection, storage, and preparation, identification and classification of fruits and vegetables; preparation of stocks, soups and sauces; basic principles of cooking; baking; kitchen operations; and a study of breakfast food. Pre-requisite or Co-requisite: (CUL 100 and CUL 200) or consent of instructor. Components: Laboratory, Lecture Attributes: Technical

CUL 215(4) Course ID: 004214
Basic Baking
Applies fundamentals of baking science to preparation of a variety of products and to learn use and care of equipment in bake shop and/or baking area. Pre-requisite or Co-requisite: CUL 100 or CUL 200 or consent of instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours). Components: Laboratory, Lecture Attributes: Technical

CUL 220(4) Course ID: 004215
Advanced Baking & Pastry Arts
Applies fundamentals of baking science to the preparation of a variety of baked products including choux paste, frozen desserts, and creams, custards, and related sauces. Emphasis will be placed on nutritional aspects of baked products and finishing techniques. Pre-requisite: CUL 215. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours). Components: Laboratory, Lecture Attributes: Technical

CUL 225(4) Course ID: 005137
Professional Confection and Pastry Arts
Finishing techniques for confections and pastries, creating decorative centerpieces, sugar artistry, and cake decorating. Fundamentals of baking science along with advanced finishing techniques. Pre-requisite: CUL 215. Lecture: 2 credits (30 contact hours); Laboratory: 2 credits (60 contact hours). Components: Laboratory, Lecture Attributes: Technical

CUL 230(3) Course ID: 004216
Basic Nutrition
Describes the characteristics, functions, and food sources of the major nutrients and how to maximize nutrient retention in food preparation and storage. Applies the principles of nutrient needs throughout the life cycle through menu planning and preparation for specialty diets. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: Technical

CUL 240(4) Course ID: 004217
Meats, Seafood, & Poultry
This course focuses on the identification of various cooking techniques for and the preparation of meats, seafood, and poultry. Pre-requisite: CUL 100 and CUL 200. Pre-requisite or Co-requisite: CUL 211 or consent of the instructor. Lecture/Lab: 4 credits (90 contact hours). Components: Laboratory, Lecture Attributes: Technical

CUL 250(4) Course ID: 004218
International & Classical Cuisine
This course focuses on the study and preparation of international and classical cuisine. Pre-requisite: CUL 100 and CUL 200. Pre-requisite or Co-requisite: (CUL 111 and CUL 211 and CUL 215 and CUL 240) or consent of instructor. Lecture/Lab: 4 credits (90 contact hours). Components: Laboratory, Lecture Attributes: Technical

CUL 270(3) Course ID: 004219
Human Relations Management
This course provides information necessary for the transition from student to a supervisory role in the Food and Beverage industry. Styles of leadership and skill development in human relations and personnel management are also covered. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: Technical

CUL 280(3) Course ID: 004221
Cost and Control
Provides students with the opportunity to perform business and math skills using mathematical functions related to food service operations in the areas of cost, control, purchasing and receiving. Pre-requisite: A mathematics placement score above the score range for MAT 065 or successful completion of the prescribed developmental course(s) or consent of the instructor. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

CUL 285(3) Course ID: 004222
Front of the House
Focuses on the operations in front of the house management including service techniques and dining room service, beverage service (non-alcoholic and alcoholic beverages), POS systems, and menu planning. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

CUL 290(4) Course ID: 004223
Front of the House-Catering
Focuses on the operations in front of the house management including service techniques and dining room service, beverage service (non-alcoholic and alcoholic beverages), POS systems, and menu planning. Pre-requisite: (CUL 100 and CUL 111 and CUL 200 and CUL 211 and CUL 215 and CUL 240) or consent of the instructor. Lecture/Laboratory: 4.0 credits (90 contact hours). Components: Lecture Attributes: Technical

CUL 295(3) Course ID: 005138
Doing Business as a Personal Chef
A general overview of the business aspects of starting and operating a personal chef service. Pre-requisite: All Technical Core Courses as outlined in the current Culinary Arts Curriculum. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: Technical

CUL 297(1 - 6) Course ID: 004224
Selected Topics in Culinary Arts
Various culinary arts topics, issues, and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructor(s); courses may be repeated with different topics to a maximum of six credits. Lecture: varies by topic, Lab: varies by topic. Pre-requisite: Consent of instructor. Components: Laboratory, Lecture Attributes: Technical

CUL 298(2 - 3) Course ID: 004225
Culinary Arts Practicum Experience
Practicum enhances the student’s transition from class to the work of work by providing unpaid work experience in a simulated or on-campus setting that utilizes the skills required to achieve the student’s occupational goal. Pre-requisite: Consent of instructor. Practicum: 2.0 - 3.0 credits (120 -180 contact hours). Components: Practicum Attributes: Technical

CUL 299(2 - 3) Course ID: 004226
Culinary Arts Cooperative Education Experience
Enhances the student’s transition from class to the workforce by providing a paid work experience in a setting that utilizes the skills required to achieve the student’s occupational goal. Pre-requisite: Consent of instructor. Practicum: 2.0 - 3.0 credits (120 -180 contact hours). Components: Practicum Attributes: Technical

CUL 1001(1) Course ID: 016347
Culinary Industry Trends
Provides an introduction to several aspects of the food industry. Includes an overview of the history of the profession and current career opportunities and trends. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 1002(1) Course ID: 016348
Culinary Arts Terminology
Provides an introduction to several aspects of the food industry. Introduces proper terminology for various types of equipment and cooking methods. Pre-requisite: CUL 1001. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2001(1) Course ID: 016349
Food Handling Practices
Reinforce personal hygiene habits and food handling practices that protect the health of the consumer. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2002(1) Course ID: 016350
Food Service Sanitation/Safety
Develops an understanding of the basic principles of sanitation and safety and applies them in the food service operations. Pre-requisite: CUL 2001. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2301(1) Course ID: 016351
Food and Nutrient Sources
Describes the characteristics, functions, and food sources of the major nutrients. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2302(1) Course ID: 016352
Menu Planning and Preparation
Describes how to maximize nutrient retention in food preparation and storage. Pre-requisite: CUL 2301. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2303(1) Course ID: 016353
Menus for Specialty Diets
Applies the principles of nutrient needs throughout the life cycle through menu planning and preparation for specialty diets. Pre-requisite: CUL 2302. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2801(1) Course ID: 016354
Food Service Operating Cost
Provides students with the opportunity to perform business and math skills using mathematical functions related to food service operations in the area of cost. Pre-requisite: A mathematics placement score above the score range for MAT 065 or successful completion of the prescribed developmental course(s) or consent of the instructor. Lecture: 1 credit (15 contact hours). Components: Lecture

CUL 2802(1) Course ID: 016355
Food Service Control Costs
Provides students with the opportunity to perform business and math skills using mathematical functions related to food service operations in the area of control. Pre-requisite: CUL 2801. Lecture: 1 credit (15 contact hours) Components: Lecture
<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Attributes</th>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL 2803(1)</td>
<td><strong>Food Service Financial Aspects</strong></td>
<td></td>
<td></td>
<td>Provides students with the opportunity to perform business and math skills using mathematical functions related to food service operations in the areas of purchasing and receiving. Pre-requisite: CUL 2802. Lecture: 1 credit (15 contact hours).</td>
</tr>
<tr>
<td><strong>DAH Dental Hygiene</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAH 101(2)</td>
<td><strong>Infection Control &amp; Medical Emergencies</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Examines current regulatory mandates, specific step-by-step procedures related to infection control, management of hazardous materials in the dental office, management of emergency situations and basic concepts of pharmacology. Pre-requisite: Admission into the Integrated Dental Assisting or Dental Hygiene Program. Lecture: 1.5 credits (22.5 contact hours). Lab: 0.5 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAH 121(3)</td>
<td><strong>Dental Sciences</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Introduces dental history and anatomy, and tooth morphology as applicable to the practice of dental assisting and dental hygiene. Pre-requisite: Admission to the Integrated Dental Assisting or Dental Hygiene Program. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DAH 124(2)</td>
<td><strong>Materials in Dentistry</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Examines the physical and chemical properties of dental materials with an emphasis on composition and application. Pre-requisite: Admission to the Integrated Dental Assisting or Dental Hygiene Program. Lecture: 1.5 credits (22.5 contact hours). Lab: 0.5 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAH 130(3)</td>
<td><strong>Oral Pathology</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Introduces the disciplines of general pathology and oral pathology as related to dental auxiliary function. Pre-requisite: Dental Assisting: Minimum grade of “C” in DAH 101, DAH 121, DAH 124, DAH 135, DAH 135, DAH 135, DAH 135, and DAH 135: Dental Hygiene: Minimum grade of “C” in DAH 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DAH 135(2)</td>
<td><strong>Oral Radiology</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Examines theory and clinical practice of oral radiographic methods. Presents history and development of x-ray radiation; properties and uses of x-ray radiation; exposure, processing and mounting of intraoral and extraoral films; and identification of radiographic anatomical landmarks. Pre-requisite: Admission into the Integrated Dental Assisting or Dental Hygiene Program. Lecture: 1.5 credits (22.5 contact hours). Lab: 0.5 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAH 235(1)</td>
<td><strong>Practice Management</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Examines legal, ethical, and managerial aspects of the dental practice. Pre-requisite: Dental Assisting: Minimum grade of “C” in DAH 101, DAH 121, DAH 135, DAH 124, DAH 125, and DAH 130; Dental Hygiene: Minimum grade of “C” in DHG 220 and DHG 226. Lecture: 1.0 credit (15 contact hours).</td>
</tr>
<tr>
<td>DAS Dental Assisting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS 125(6)</td>
<td><strong>Dental Assisting</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Introduces the profession of dental assisting, history of dentistry, chairside dental assisting, dental equipment, operative dentistry and dental specialties. Emphasizes essential dental assisting skills to prepare the student for clinical setting. Pre-requisite: Admission into the Dental Assisting Integrated Program. Lecture: 2.0 (30 contact hours). Lab: 4.0 credits (120 contact hours).</td>
</tr>
<tr>
<td>DAS 130(2)</td>
<td><strong>Seminar I</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Examines leadership, management, clinical decision-making, judgment skills and professional values to facilitate the transition of the student to a professional dental assistant. Provides the opportunity for the application of critical thinking skills in the care of a diverse patient population in the dental setting. Pre-requisite: Admission into the Dental Assisting Integrated program. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAS 225(2)</td>
<td><strong>Dental Assisting II</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Continues DAS 120 concepts. Introduces student to remaining dental specialties and expanded dental assisting functions. Pre-requisite: Dental Assisting: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, DAH 125, and DAH 130. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAS 245(2)</td>
<td><strong>Preventive Dentistry</strong></td>
<td>Technical</td>
<td>Laboratory, Lecture</td>
<td>Introduces dental biofilm and its role in dental disease. Emphasizes the role nutrition plays regarding disease initiation and progression and the methods and preventive agents utilized by the auxiliary to prevent oral disease. Pre-requisite: Dental Assisting: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, DAH 125, and DAH 130. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).</td>
</tr>
<tr>
<td>DAS 250(5)</td>
<td><strong>Clinical Externship</strong></td>
<td>Technical</td>
<td>Practicum</td>
<td>Apply and practice principles and skills acquired in the areas of chairside assisting, operative procedures, specialty procedures, laboratory procedures, business office procedures and dental radiology. Consists of observation and practice in a dental office setting with emphasis on chairside activities. Pre-requisite: Dental Assisting: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, DAH 125, and DAH 130. Practicum: 5.0 credits (320 contact hours).</td>
</tr>
<tr>
<td>DGD Digital Game and Simulation Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGD 131(3)</td>
<td><strong>3D Texturing and Lighting I</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces the techniques for creating textures and lighting for 3D games and simulations. Pre-requisite: Computer Literacy course or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 132(3)</td>
<td><strong>Introduction to 3D Graphics</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Emphasizes creating 3D graphics using one or more state-of-the-art software packages. Pre-requisite: Computer literacy course or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 231(3)</td>
<td><strong>3D Texturing and Lighting II</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces advanced texturing and lighting techniques to enhance depth perception and realism within 3D environments. Pre-requisite: DGD 131 and DGD 132; or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 233(3)</td>
<td><strong>3D Character Rigging</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces basic techniques to rig a digital character with a skeleton that can be manipulated to produce artistic or realistic movement. Pre-requisite: DGD 232 or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 234(3)</td>
<td><strong>3D Animation</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces basic techniques to animate 3D characters and objects using constraints, manipulation, pivot point rotation, motion scripting, and motion flow. Pre-requisite: DGD 132 or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 235(3)</td>
<td><strong>3D Special Effects</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces digital 3D special effects including the four fundamental elements of air, fire, earth, and water. Pre-requisite: DGD 231 or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 236(3)</td>
<td><strong>Game Engines I</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Introduces students to configuring and using a multiformat game engine to build 3D games and simulations. Pre-requisite: DGD 132 or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
<tr>
<td>DGD 237(3)</td>
<td><strong>Game Engines II</strong></td>
<td>Technical</td>
<td>Lecture, Technical</td>
<td>Use a game engine to build an interactive, 3D graphics-based application that incorporates scripting, collision detection, optimized real-time rendering, and export/ deployment support across multiple platforms. Pre-requisite: DGD 236 or consent of instructor. Lecture: 3.0 credits (45 contact hours).</td>
</tr>
</tbody>
</table>
DHG Dental Hygiene

DHG 120(3) Course ID: 000337

Pre-Clinical Dental Hygiene
Stresses basic assessment and clinical skills, related theory, and professional role and responsibilities of the dental hygienist as a member of the dental health team.
Pre-requisite: Admission into the Dental Hygiene Integrated Program. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DHG 130(3) Course ID: 000338

Clinical Dental Hygiene I
Focuses on preparing the student to provide patient treatment that includes preventive and therapeutic procedures to maintain oral health and assist the patient in achieving oral health goals. Pre-requisite: Minimum grade of C in DHG 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 1.5 credits (22.5 contact hours). Lab: 0.5 credits (60 contact hours). Clinical: 1.0 credit (120 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

DHG 132(2) Course ID: 004331

Pharmacology
Examines the disciplines of pharmacology and therapeutics as related to dental hygiene. Pre-requisite: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

DHG 134(2) Course ID: 006811

Dental Nutrition
Presents basic principles of nutrition with emphasis on nutritional counseling in relationship to dental health, determination of patient nutritional status, and application to oral health and effects of nutritional deficiencies. Pre-requisite: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

DHG 136(1) Course ID: 000340

Periodontology
Focuses on the clinical, histological, and radiographic differences between healthy and unhealthy periodontal tissues. Pre-requisite: Minimum grade of C in DAH 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

DHG 220(4) Course ID: 000341

Clinical Dental Hygiene II
Focuses on providing comprehensive dental hygiene care in a clinical setting while emphasizing the treatment of periodontal and special needs patients. Pre-requisite: Minimum grade of C in DAH 131, DHG 130, DHG 132, DHG 134, and DHG 136. Lecture: 2.0 credits (30 contact hours). Clinical: 2.0 credits (240 contact hours).
Components: Clinical, Lecture
Attributes: Technical

DHG 221(2) Course ID: 004778

Local Anesthesia and Nitrous Oxide Sedation
Presents a conceptual framework and clinical skills necessary to administer local dental anesthetics and nitrous oxide sedation in accordance with state dental practice acts. Pre-requisite: Minimum grade of C in DAH 131, DHG 130, DHG 132, DHG 134, DHG 136, and current enrollment in the Dental Hygiene Integrated Program. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DHG 226(2) Course ID: 000342

Advanced Periodontology
Focuses on the role of the dental hygienist in the prevention, diagnosis and treatment of periodontal diseases. Pre-requisite: Minimum grade of C in DAH 131, DHG 130, DHG 132, DHG 134, and DHG 136. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

DHG 230(3) Course ID: 000343

Clinical Dental Hygiene III
Focuses on mastery of dental hygiene clinical skills for patient care and preparation for written and clinical board examinations. Pre-requisite: Minimum grade of C in DHG 220 and DHG 226. Lecture: 1.0 credit (15 contact hours). Clinical: 2.0 credits (240 contact hours).
Components: Clinical, Lecture
Attributes: Technical

DHG 238(2) Course ID: 000344

Community Dental Health Issues
Examines basic concepts in assessing community dental health needs and planning, implementing, evaluating, and presenting dental health programs to various community groups. Pre-requisite: Minimum grade of C in DHG 220 and DHG 226. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

DHP Dental Hygiene

DHP 120(4) Course ID: 004859

Dental Hygiene I
Includes basic assessment and clinical skills, related theory, professional role and responsibilities of the dental hygienist as a member of the dental health team. Pre-requisite: Acceptance into the Dental Hygiene Program; Computer Literacy or equivalency; and CPR certification. BIO 137 and BIO 139 or equivalent, with a grade of “C” or better. Lecture: 2.5 credits (37.5 contact hours); Clinical: 1.5 hours (180 contact hours).
Components: Clinical, Lecture
Attributes: Technical

DHP 121(3) Course ID: 004860

Oral Biology I
Includes oral histology and embryology, regional head and neck anatomy, and dental anatomy applicable to the practice of dental hygiene. Pre-requisite: Acceptance into the Dental Hygiene Program; Computer Literacy or equivalency; and CPR certification. BIO 137 and BIO 139 or equivalent, with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours); Laboratory: 1.0 credit (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DHP 122(2) Course ID: 006832

Dental Nutrition
Presents basic principles of nutrition with emphasis on nutritional counseling in relationship to dental health, determination of patient nutritional status, and application to oral health and effects of nutritional deficiencies. Pre-requisite: (DHP 130 and DHP 131 and DHP 135 and DHP 136) all with a grade of “C” or better. Lecture: 2.5 credits (37.5 contact hours).
Components: Lecture
Attributes: Technical

DHP 220(3) Course ID: 004865

Dental Hygiene III
Emphasizes the continued treatment of clinical patients. Prepares student for treatment and management of dental patients with special needs and emphasizes appropriate changes in dental treatment in response to a patient’s medical condition. Pre-requisite: (DHP 130 and DHP 131 and DHP 135 and DHP 136) all with a grade of “C” or better. Clinical: 2.0 credits (240 contact hours); Discussion: 1.0 credit (15 contact hours).
Components: Lecture, Clinical, Discussion
Attributes: Technical

DHP 222(3) Course ID: 005040

Special Needs Patients
Focuses on the specific oral health care needs of persons with a variety of medical, disabling or mental conditions and provides for discussion of innovative approaches to serving populations with special oral health care needs. Emphasizes special pharmacological considerations and treatment modifications. Pre-requisite: (DHP 130 and DHP 131 and DHP 135 and DHP 136) with a grade of “C” or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DHP 224(2) Course ID: 004866

Dental Materials
Introduces the physical and chemical properties of dental materials and their application. Pre-requisite: (DHP 130 and DHP 131 and DHP 133and DHP 136) with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical
DHP 226(2) Course ID: 004867
Periodontics II
Provides for the continuation and expansion of the content of Periodontics I. Emphasizes the role of the dental hygienist in the recognition of systemic implications related to periodontal diseases and current advancements in the management of patients with periodontal disease. Introduces current surgical therapies with discussion of supportive periodontal therapy. Pre-requisite: DIT 130 and DHP 131 and DHP 154 and DHP 156 with a grade of “C” or better. Lecture: 1.5 credits (22.5 contact hours). Laboratory: 0.5 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DHP 229(2) Course ID: 004850
Local Anesthesia
Includes common oral local anesthesia injection techniques and the related background information are addressed in this course. Subjects include: anatomic considerations, armamentarium, basic injection techniques, record keeping neuropsychology, related pharmacology, patient evaluation, complications and contraindications. The pharmacology, administration and contraindications of Nitrous Oxides are also included. This elective course satisfies the Kentucky State Dental Practice Act regarding “delegation of block and infiltration anesthesia and nitrous oxide analgesia to dental hygienists.” Pre-requisite: DHP 130 and DHP 131 and DHP 133 and DHP 136 with a grade of “C” or better. Lecture: 1.25 credits (18.75 contact hours). Lab: 0.75 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DHP 230(3) Course ID: 004868
Dental Hygiene IV
Focuses on the mastery of all dental hygiene clinical skills utilized in treating all types of patients. Requires the completion and presentation during seminar time of a case study on a clinical patient. Pre-requisite: DIT 220 and DHP 222 and DHP 224 and DHP 226 with a grade of “C” or better. Clinical: 2.0 credits (240 contact hours). Discussion: 1.0 credit (15 contact hours).
Components: Clinical, Discussion
Attributes: Technical

DIT 110(3) Course ID: 0001274
Introduction To Diesel Engines
Covers fundamental concepts of the operation of two- and four-stroke diesel and gasoline engines. Includes basic engine components and their functions, engine performance terminology, two- and four-stroke operation, combustion principles, and engine disassembly with basic hand tools. Co-requisite: DIT 111, Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT 111(2) Course ID: 0001275
Introduction To Diesel Engines Lab
Includes the hands-on concepts covered in DIT 110. Covers the inspection, diagnosis and repair strategies for the basic repair of internal combustion diesel engines. Co-requisite: DIT 110, Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 112(3) Course ID: 0001276
Diesel Engine Repair
Includes how to take a disassembled engine and evaluate the condition of each component. Includes the identification and use or function of each component of the engine. Covers cylinder block and components, cylinder heads and valve train components, cylinder heads and valve train components, and engine lubrication systems. Pre-requisite: DIT 110 or ADX 150. Co-requisite: DIT 113, Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT 113(2) Course ID: 0001277
Diesel Engine Repair Lab
Includes the hands-on concepts covered in DIT 112. Covers the inspection, diagnosis and repair strategies of internal combustion late model diesel engines. Pre-requisite: DIT 111 or ADX 151. Co-requisite: DIT 112. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 120(3) Course ID: 0001278
Introduction to Maintenance Welding
This course provides training in the identification, inspection and maintenance of welding electrodes. Training will be given in the principles and processes of welding plates and pipes. Instruction will be given in lab safety and basic oxy fuel cutting. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT 121(3) Course ID: 0001279
Introduction to Maintenance Welding Lab
Provides laboratory experiences in which students acquire the manipulative skills needed to weld surface, fillet, and groove welds in flat and horizontal positions. The students will perform oxy fuel cutting operations. Lab: 3 credits (135 contact hours).
Components: Laboratory
Attributes: Technical

DIT 122(3) Course ID: 0001280
Undercarriage
Students learn the theory and operation of undercarriage systems and their components. These components include endless track, roller track, roller frames, idlers, roller supports, and mainframes. Co-requisite: DIT 123
Components: Lecture
Attributes: Technical

DIT 123(3) Course ID: 0001281
Undercarriage Lab
Provides opportunities to troubleshoot and repair some parts of undercarriage systems and their components. These components include endless track, roller track, roller frames, idlers, roller supports, and mainframes. Lab: 3.0 credits (135 contact hours).
Components: Laboratory
Attributes: Technical

DIT 140(3) Course ID: 0001282
Hydraulics
Covers the theory and operation of a hydraulic system including pumps, filters, reservoirs, valves and actuators. Co-requisite: DIT 141. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT 141(2) Course ID: 0001283
Hydraulics Lab
Includes the hands-on concepts covered in DIT 140. Covers the inspection, diagnosis and repair strategies of hydraulic systems. Co-requisite: DIT 140. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 150(3) Course ID: 0001284
Power Trains
Covers the theory and operation of the power train systems on medium and heavy duty trucks. Covers the diagnosis and repair techniques of the power train system. Co-requisite: DIT 151. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT 151(2) Course ID: 0001285
Power Trains Lab
Provides for practical application of concepts taught in DIT 150. Covers topics covered that will include clutches, transmission, and drive axles on medium and heavy duty trucks. Co-requisite: DIT 150. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 152(3) Course ID: 0001286
Powertrain for Construction Equipment
Students learn the theory and principles of the operation of power transmissions. They learn to diagnose and repair power train units including torque connectors, standard and automatic transmissions. Lecture: 3 credits 45 contact hours)
Components: Lecture
Attributes: Technical

DIT 153(2) Course ID: 0001287
Powertrain for Construction Equipment Lab
Students troubleshoot, disassemble, evaluate parts and reusable components of a power train system, such as torque connectors, standard and automatic transmissions, and drive lines. Lecture: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 160(3) Course ID: 0001288
Steering and Suspension
Covers the theory, operation and diagnosis of the steering and suspension system on medium and heavy duty trucks. Co-requisite: DIT 161. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DIT Diesel Technology

DIT 103(2)
Preventive Maintenance Lab
Instruction on preventive maintenance practices, scheduled procedures, documents, and D.O.T. required record system and on determining the needs for repair. Laboratory: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

DIT 105(1)
Mechanical Principles
Provides opportunities to practice hands on skills of measuring with precision measurement tools such as micrometers, dial indicator sand caliper. This class also provides opportunities for the student to practice drilling and tapping. Proper rigging techniques are illustrated and practice to ensure that the student will know how to safely lift large and awkward items. Laboratory: 1.0 credit (45 contact hours).
Components: Laboratory
Attributes: Technical
DIT 161(2) Course ID: 001289
Steering and Suspension Lab
Provides for practical application of concepts taught in DIT 160. Introduces skills necessary in the diagnosis and repair of truck suspension systems, wheel alignment, and wheel balancing. Pre-requisite: DIT 160. Laboratory: 2 credits (90 contact hours).
Components: Laboratory Attributes: Technical

DIT 180(3) Course ID: 001290
Brakes
Covers the operational theory and application of air brakes, hydraulic brakes and anti-lock brake systems. Covers the function and repair of disc brakes and drums brakes. Co-requisite: DIT 181. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

DIT 181(2) Course ID: 001291
Brakes Lab
Provides hands-on activities related to the concepts covered in DIT 180. Includes the inspection, diagnosis and performing repairs on air powered and hydraulic powered braking systems found on medium and heavy duty trucks. Co-requisite: DIT 180. Laboratory: 2 credits (90 contact hours).
Components: Laboratory Attributes: Technical

DIT 190(3) Course ID: 001292
Electrical Systems for Diesel Equipment
Covers the operation and diagnosis of the truck electrical system including the battery, starter, alternator, lighting and accessories. Co-requisite: DIT 191. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

DIT 191(2) Course ID: 001293
Electrical Systems for Diesel Equipment Lab
Provides hands-on activities related to the concepts covered in DIT 190. Covers inspection, diagnosis and performing repairs on batteries, starters, alternators and accessory systems found on medium and heavy duty trucks. Co-requisite: DIT 190. Laboratory: 2 credits (90 contact hours).
Components: Laboratory Attributes: Technical

DIT 198(2) Course ID: 001298
Cooperative Education
The cooperative education program provides supervised on-the-job work experience related to the students education objectives. Students participating in the Practicum do not receive compensation. Pre-requisite: Permission of Instructor. Practicum: 2 credits (150 contact hours).
Components: Practicum Attributes: Technical

DLC 100(3) Course ID: 007298
Digital Literacy
Introduces students to main components of digital literacy including computer fundamentals, key applications, and living online. This course closely mirrors the KCTCS Digital Literacy Standards. Lecture: 3.0 credits (45 contact hours)
Components: Lecture Attributes: Digital Literacy

DLC 1001(1) Course ID: 007393
Computer Fundamentals
Introduces students to main components of digital literacy regarding Computer Fundamentals. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

DLC 1002(1) Course ID: 007394
Key Applications
Introduces students to main components of digital literacy regarding Key Applications. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

DLC 1003(1) Course ID: 007395
Living Online
Introduces students to main components of digital literacy regarding Living Online. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

DLT 101(2) Course ID: 004871
Dental Morphology
The anatomical characteristics and dental terminology of the permanent human dentition are detailed. Other topics include dento-osseous structures, oral musculature, and the development of teeth. Waxing exercises of selected teeth are performed in the laboratory as a means of understanding tooth form and the development of manual dexterity. Pre-requisite: Admission into the DLT Program or consent of instructor. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 111(2) Course ID: 004872
Dental Materials I
The major content of this course includes an introduction to the study of dental materials including basic concepts in chemistry. Emphasis is placed on the chemical and physical properties of gypsum, resin, and wax used in dentistry. Basic manipulation of these materials is included in order to prepare the student for future use in the dental laboratory. Pre-requisite: Admission into the DLT Program or consent of instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

DLT 112(2) Course ID: 004874
Dental Materials II
This course emphasizes the metallurgy of dental alloys including the mechanism of crystallization, strain hardening and the chemical process of corrosion. Materials associated with fabricating metal prostheses are studied and include impression materials, cast alloys and wrought alloys. Hazard and infection control procedures in the dental laboratory are presented as well as basic study of applicable physics and unit conversion. Pre-requisite: DLT 111 or consent of instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

DLT 121(2) Course ID: 004875
Complete Dentures I
The basic principles of complete denture prosthodontics is presented including the fundamentals of arranging and contouring artificial dentures. Identification of oral landmarks and changes that occur in the edentulous patient are discussed. Emphasis is placed on identifying the purpose and use of custom trays, baseplates and occlusion rims. Laboratory procedures include fabricating custom trays, baseplates, occlusion rims, and a complete set of dentures. Pre-requisite: Admission into the DLT Program. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 122(2) Course ID: 004876
Complete Dentures II
Advanced principles of complete denture prosthodontics are presented including balanced, monolype and linguolabial occlusion. Emphasis is also placed on the considerations in the oral cavity that effect the success of removable prosthodontic treatment. Laboratory procedures include denture repairs, selective grinding and fabricating complete dentures. Pre-requisite: DLT 121. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 131(2) Course ID: 004877
Removable Partial Dentures I
The basic principles of removable partial dentures is presented with emphasis on design principles. Detailed information about direct retainers, indirect retainers, rests and bases is discussed. Laboratory procedures involve fabricating three removable partial dentures including the attachment of artificial denture teeth. Pre-requisite: Admission into the DLT Program. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 132(2) Course ID: 004878
Removable Partial Dentures II
Advanced principles of removable partial dentures is presented with emphasis on design principles. Detailed information about direct retainers, indirect retainers, rests and bases is discussed. Laboratory procedures involve fabricating three removable partial dentures including the attachment of artificial denture teeth. Pre-requisite: DLT 131. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 142(2) Course ID: 004879
Occlusion
Theories of occlusion; interarch and intrarch associations; the temporomandibular joint and its movements; articulars, interocclusal records, and face-bow transfer; occlusal schemes; and restorative considerations in occlusal therapy are discussed and/or put to practical application in this course. Pre-requisite: Admission into the Dental Laboratory Program. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLT 151(2) Course ID: 004880
Fixed Prosthodontics I
The basic principles of crown and bridge fixed prosthodontics are presented including the fabrication of both single and multi-unit full metal restorations. Emphasis is placed on preparing and evaluating working casts, waxing anatomical tooth patterns, spraying, investing, burnout, casting, and polishing. Additional laboratory procedures include fabricating restorations on various types of articulators, developing functional occlusion, and soldering. Pre-requisite: Admission into the DLT Program. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DLC 2003(2) Course ID: 008127
Dental Laboratory Technology
Covers the operation and diagnosis of the truck electrical system including the battery, starter, alternator, lighting and accessories. Co-requisite: DIT 191. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical
DLT 152(2) Course ID: 004881
Fixed Prosthodontics II
The basic principles of metal ceramic fixed prostheses are presented including the fabrication of both single and multi-unit restorations. Emphasis is placed on esthetic restorations, preparing and evaluating working casts, waxing substructure patterns, spraying, investing, burnout, casting, and polishing. Additional laboratory procedures include applying opaque, dentin, and enamel ceramic powders and contouring fired porcelain. Pre-requisite: DLT 151. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DMS Diagnostic Medical Sonographer

DMS 105(13) Course ID: 005941
Introduction to Cardiology
Provides an overview of anatomy and physiology and the electrophysiology of the cardiovascular system. Includes theory and application of the 12-lead electrocardiogram, holter monitor, and stress test. Covers cardiac pharmacology, medical terminology, medical law and ethics, and patient care. Includes Cardiac Catheterization lab, Vascular Sonography, and Respiratory Care. Pre-requisite: Admission to Cardiac Sonography Program. Lecture: 10.0 credits (150 contact hours). Clinical: 3.0 credits (180 contact hours).
Components: Lecture
Attributes: Technical

DMS 110(7) Course ID: 004392
Department Consent Required
Sonography I
Provides a study of diagnostic foundations of clinical medicine pertinent to abdominal, superficial structures, musculoskeletal and non-cardiac chest sonography. Includes obtaining the clinical history, interpretation of clinical laboratory test, the pathophysiologic effects of disease, related clinical signs and symptoms, sectional anatomy, and normal/abnormal sonographic patterns. Includes a laboratory component for the practice and application of normal sonographic patterns, basic scanning techniques and protocol. Pre-requisite: Admission to Diagnostic Medical Sonography program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture: 5.0 credits (75 contact hours); Laboratory: 2.0 credits (90 contact hours) (45:1 Ratio).
Components: Laboratory, Lecture
Attributes: Technical

DMS 111(12) Course ID: 006259
Abdominal Sonography
Provides a study of diagnostic foundations of clinical medicine pertinent to abdominal, superficial, musculoskeletal and non-cardiac chest sonography. Includes obtaining the clinical history, interpretation of clinical laboratory test, the pathophysiologic effects of disease, related clinical signs and symptoms, sectional anatomy, and normal/abnormal sonographic patterns. Includes a laboratory component for the practice and application of normal sonographic patterns, basic scanning techniques and protocol. Pre-requisite: Admission to Diagnostic Medical Sonography program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture: 5.0 credits (75 contact hours); Lab: 2.0 credits (90 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DMS 112(2) Course ID: 006795
Patient Care Concepts in Sonography
Provides an introduction to patient care in the sonography department, adding to instruction received in required nursing assistant course. Includes information about healthcare settings, professionalism, methods of credentialing, as well as legal and ethical considerations in patient care. Pre-requisite: Admission to DMS program, completion of CPR and minimum 75 hour nursing assistant course. Lecture: 1.0 credit hour (15 contact hours). Lab: 1.0 credit hour (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

DMS 115(6) Course ID: 004395
Instructor Consent Required
Sonography II
Covers the study of the clinical applications within the sonographic specialties of obstetrics, gynecology, female breast, and neurosonography. Includes related clinical symptoms and laboratory tests, pathophysiologic effects of disease and anomalies, and normal/abnormal sonographic patterns. Includes basic scanning techniques and protocol. Student to utilize the laboratory facilities to demonstrate clinical applications of theoretical principles and concepts.
Pre-requisite: Admission to Diagnostic Medical Sonography program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture/Lab: 6.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

DMS 116(6) Course ID: 006280
OB/GYN Sonography
Covers the study of the clinical applications within the sonographic specialties of obstetrics and gynecology. Includes related clinical symptoms and laboratory test, pathophysiologic effects of disease and anomalies, and normal/abnormal sonographic patterns. Includes basic scanning techniques and protocol. Designed for the student to utilize the laboratory facilities to demonstrate clinical applications of theoretical principles and concepts.
Pre-requisite: Admission to Diagnostic Medical Sonography Program; Computer Literacy; CPR certification; NAA 100 or equivalent. Lecture/Lab: 6.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

DMS 117(7) Course ID: 006261
Vascular Sonography I
Provides a study of diagnostic foundations of clinical medicine pertinent to vascular sonography. Includes obtaining the clinical history, interpretation of clinical laboratory test, the pathophysiologic effects of disease, related clinical signs and symptoms, sectional/vascular anatomy, and normal/abnormal sonographic patterns. Includes a laboratory component for the practice and application of normal sonographic patterns, basic scanning techniques and protocol. Pre-requisite: Admission to Diagnostic Medical Sonography program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture/ Lab: 7.0 credits (165 contact hours).
Components: Lecture
Attributes: Technical

DMS 118(6) Course ID: 006262
Vascular Sonography II
Covers the study of the clinical applications of peripheral venuous, arterial, and abdominal vasculature within the sonographic vascular concentration. Includes related clinical symptoms and laboratory test, pathophysiologic effects of disease and anomalies, and normal/abnormal sonographic patterns. Includes basic scanning techniques and protocol. Designed for the student to utilize the laboratory facilities to demonstrate clinical applications of theoretical principles and concepts.
Pre-requisite: Admission to Diagnostic Medical Sonography program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture/Lab: 6.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

DMS 119(6) Course ID: 004393
Department Consent Required
Ultrasonic Physics and Instrumentation
Consists of lectures and related laboratory exercises covering the areas of ultrasonic propagation principles, transducer parameters, interactive properties of ultrasound with human tissue, possible biologic effects, basic equipment types, instrumentation and quality control procedures, hemodynamics, and basic Doppler. Pre-requisite: Consent of Program Coordinator. Lecture: 6.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

DMS 121(6) Course ID: 006263
Department Consent Required
Sonography Physics and Instrumentation
Consists of lectures and related laboratory exercises covering the areas of ultrasonic propagation principles, transducer parameters, interactive properties of ultrasound with human tissue, possible biologic effects, basic equipment types, instrumentation and quality control procedures, hemodynamics, and basic Doppler.
Pre-requisite: PHY 151 OR PHY 152 OR PHY 171, or higher approved Physics course approved by DMS faculty. Lecture: 6.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

DMS 126(3 - 4) Course ID: 004394
Clinical Education I
Includes observation of all clinical duties performed in the ultrasound department. Covers basic instruction and scanning experience in abdomen, superficial structures, non-cardiac chest, embryo/foetus, gravid and non-gravid pelvic structures with basic competencies to be performed. Pre-requisite: Minimum grade of “C” in (DMS 109 and DMS 113) or (DMS 111 and DMS 116). Clinical: 3.0 - 4.0 credits (180 - 240 contact hours).
Components: Clinical
Attributes: Technical
DMS 136(4) Course ID: 006264
Vascular Clinical Education I
Includes observation and practice of all clinical duties performed in the vascular lab with basic instruction and scanning experience under the supervision of a credentialed Vascular Sonographer. Pre-requisite: DMS 117 with minimum “C” grade. Clinical: 4.0 credits (240 contact hours).
Components: Clinical
Attributes: Technical

DMS 145(12) Course ID: 005942
Cardiac Sonography I
Covers the identification of structures and the correct technique to obtain images of the heart. Includes the fundamentals of ultrasound physics and instrumentation required to perform echocardiograms. Pre-requisite: Admission to Diagnostic Medical Sonography Program; Computer Literacy; Minimum grade of “C” in BIO 135 or (BIO 137 and BIO 139) and (PHY 151 or PHY 152 or PHY 171) and MAT 150. Lecture/Lab: 12.0 credits (225 contact hours).
Components: Lecture
Attributes: Technical

DMS 199(1) Course ID: 005936
Online Physics Review
Includes a review of basic ultrasound physics, transducers, bioeffects, artifacts, quality assurance and principles of Doppler techniques. Pre-requisite: DMS 119 or DMS 121 with minimum “C” grade or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

DMS 201(1) Course ID: 005937
Online Abdomen Sonography
Provides a review of abdominal sonography to prepare the student for the related registry. Includes obtaining a clinical history, interpretation of clinical laboratory tests, pathologic basis for disease, related clinical signs and symptoms, sectional anatomy, and normal/abnormal sonographic patterns. Pre-requisite: DMS 109 or DMS 111 with minimum “C” grade or Consent of Program Coordinator. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

DMS 202(1) Course ID: 005938
Online OB/GYN Review
Provides a review of related clinical signs and symptoms, laboratory tests, and normal/abnormal sonographic patterns in preparation for the related Ob/Gyn registry. Pre-requisite: DMS 115 or DMS 116 with minimum “C” grade or Consent of Program Coordinator. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

DMS 204(2)/Course ID: 008266 Department Consent Required
Online Vascular Review
Provides a review of vascular sonography to prepare the student for the ARDMS certification examination. Includes activities and quizzes related to cerebrovascular, intracranial, peripheral venous, peripheral arterial and abdominal vascular sonography. Pre-requisite: Consent of Program Coordinator. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

DMS 205(6) Course ID: 005943
Cardiac Sonography II
Provides content relevant to the more advanced cardiovascular diseases. Includes how to correlate Doppler findings and laboratory measurements. Covers transesophageal echocardiography, stress echocardiography, Intensive Care Unit patient and Operative/Perioperative applications. Pre-requisite: (DMS 145 with a minimum “C” grade) or Consent of Program Coordinator. Lecture/Lab: 6.0 credits (270 contact hours).
Components: Lecture
Attributes: Technical

DMS 206(3) Course ID: 006287
Online Vascular Sonography III
Covers the various test, miscellaneous conditions encountered in vascular sonography. Emphasizes the importance of quality measurements and safety practices. Pre-requisite: Admission to Diagnostic Medical Sonography Program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DMS 215(6) Course ID: 005944
Cardiac Sonography III
Covers the basic embryology of the heart, fetal and postnatal circulation, and basic types of congenital heart defects found in the adult. Includes how systemic disease affects the heart and basic clinical problem solving techniques used in echocardiography. Pre-requisite: DMS 205 with minimum “C” grade. Lecture/Lab: 6.0 credits (270 contact hours).
Components: Lecture
Attributes: Technical

DMS 217(3) Course ID: 006702
Basic Cardiac Ultrasound Technology
Provides review and practical application of ultrasound and Doppler physics; cardiac anatomy, physiology, and pathophysiology; cardiac imaging; 2D, M-mode, Spectral and Color Doppler; and exam protocols. Pre-requisite: Applicants must be RDMS credentialed or graduate of an accredited sonography program or consent of a sonography program coordinator. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DMS 230(5 - 8) Course ID: 004396
Clinical Education II
Includes interaction in all clinical duties performed in all ultrasound departments. Covers abdomen, superficial structures, non-cardiac chest, embryo/fetus, and the gravid and non-gravid pelvic structures with performance of basic and advanced competencies to be performed. Pre-requisite: Admission to Diagnostic Medical Sonography Program; Computer Literacy; Minimum grade of “C” in BIO 135 or (BIO 137 and BIO 139) and (PHY 151 or PHY 152 or PHY 171) and MAT 150. Clinical: 5.0 - 8.0 credits (300 - 480 contact hours).
Components: Clinical
Attributes: Technical

DMS 236(8) Course ID: 006268
Vascular Clinical Education II
Includes experience in clinical applications of cerebrovascular, intracranial, peripheral arterial, peripheral venous, and abdominal vascular sonographic examinations. Requires the performance of competencies with the rate of progress dependent upon the student’s ability to comprehend and perform assignments. Pre-requisite: DMS 136 with minimum “C” grade. Clinical: 8.0 credits (480 contact hours).
Components: Clinical
Attributes: Technical

DMS 237(5) Course ID: 006269
Vascular Clinical Education III
Provides a more active clinical role in assisting the practicing vascular Sonographer and performing sonographic duties under direct supervision. Requires the performance of competencies with the rate of progress dependent upon the student’s ability to comprehend and perform assignments. Pre-requisite: Minimum “C” grade in DMS 136 and DMS 236. Clinical: 5.0 credits (300 contact hours).
Components: Clinical
Attributes: Technical

DMS 240(5 - 8) Course ID: 004398
Clinical Education III
Continues the clinical experience by student assuming a more active role in assisting the practicing sonographer and performing sonographic duties under direct supervision with the rate of progress dependent upon the student’s ability to comprehend and perform assignments.
Pre-requisite: DMS 230 with Minimum “C” grade. Clinical: 5.0 - 8.0 credits (300 - 480 contact hours).
Components: Clinical
Attributes: Technical

DMS 245(6) Course ID: 005945
Cardiac Sonography IV
Provides a comprehensive overview of program content with clinical applications. Pre-requisite: DMS 145 with minimum “C” grade. Pre-requisite: Or Co-requisite: DMS 205 with minimum “C” grade. Lecture/Lab: 6.0 credits (270 contact hours).
Components: Lecture
Attributes: Technical

DPS 255(6) Course ID: 005939
Vascular Technology
Components: Clinical
Attributes: Technical

DPS 260(6) Course ID: 005335
Basic Vascular Technology
Provides review and practical application of vascular technology (Carotid Duplex Scanning and Peripheral Vascular Scanning) with an analysis of anatomy, physics, hemodynamics, exam protocols, and pathology. Pre-requisite: Applicant must be RDMS credentialed or a graduate of an accredited sonography program or Consent of Program Coordinator. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DPT Digital Printing

DPT 100(3) Course ID: 015703
Introduction to 3D Printing Technology
Provides an introduction to the world of Three Dimensional printing (3DP) and its applications in conjunction with computer technology. Introduces topics including computer hardware and software, 3D printing technology, file management, the Internet, e-mail, the social web, sustainability, security, and computer and intellectual property ethics. Presents basic use of application programming, systems, and utility software. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

ECO Economics

ECO 101(3) Course ID: 000445
Contemporary Economic Issues
Covers contemporary economic issues such as inflation, poverty and affluence, globalization, and environmental pollution. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Course Also Offered in Modules
ECO 1011(1) Course ID: 005925
How Markets Work
Covers the foundations of contemporary economic issues emphasizing scarcity, choice, benefits, costs, and supply and demand. Lecture: 1 credit (15 contact hours).
Components: Lecture

ECO 1012(1) Course ID: 005926
Markets and Macroeconomic Goals
Covers contemporary economic issues such as price indices, efficiency, equity, poverty and welfare. Prerequisite: ECO 1011. Lecture: 1 credit (15 contact hours).
Components: Lecture

ECO 1013(1) Course ID: 005927
Markets and Regulation
Covers contemporary economic issues such as externalities, market failure, globalization, and environmental pollution. Prerequisite: ECO 1012. Lecture: 1 credit (15 contact hours).
Components: Lecture

ECO 2010(0.75) Course ID: 005928
The Role of Economics
Covers the allocation of scarce resources from the viewpoint of individual economic units. Topics include the circular flow of resources in the economy, the production possibilities frontier, and opportunity cost. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2012(0.75) Course ID: 005929
How Markets Work
Covers the allocation of scarce resources from the viewpoint of individual economic units. Includes supply and demand and government intervention in markets. Prerequisite: ECO 2011. Lecture: 0.75 (11.25 contact hours).
Components: Lecture

ECO 2013(0.75) Course ID: 005930
Markets and Welfare
Covers the allocation of scarce resources from the viewpoint of individual economic units. Includes consumer and producer decision making and the equity and efficiency of markets. Prerequisite: ECO 2012. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2014(0.75) Course ID: 005931
Firm Behavior and Market Structures
Covers the allocation of scarce resources from the viewpoint of individual economic units. Includes competitive and non-competitive markets. Pre-requisite: ECO 2012. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2021(0.75) Course ID: 005932
Measuring Macroeconomic Outcomes
Covers how society’s needs are satisfied with the limited resources available. Includes national income accounting, inflation, and unemployment. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2022(0.75) Course ID: 005933
Basic Macroeconomic Relationships
Covers how society’s needs are satisfied with the limited resources available. Topics include the aggregate expenditure model, aggregate supply and aggregate demand. Pre-requisite: ECO 2021. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2023(0.75) Course ID: 005934
Stabilization Tools
Covers how society’s needs are satisfied with the limited resources available. Includes economic growth, fiscal policy, and monetary policy. Pre-requisite: ECO 2022. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 2024(0.75) Course ID: 005935
The International Economy
Covers how society’s needs are satisfied with the limited resources available. Includes international trade and international finance. Pre-requisite: ECO 2023. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

EDM 270(3) Course ID: 004011
Teaching and Learning in the Middle Grades
Provides students in middle school education with knowledge and experience critical for instruction of middle school students and management of middle school classrooms. Requires field experience of a minimum of 15 clock hours in instructor-approved education agencies. Pre-requisite: EDM 202 and EDU 201. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDP 202(3) Course ID: 000452
Human Development and Learning
Presents theories and concepts of human development, learning, and motivation and applies them to interpreting and explaining human behavior and interaction in relation to teaching across the developmental span from early childhood to adulthood. Requires field experience of a minimum of 15 clock hours in instructor-approved educational agencies. Prerequisite: EDP 202 and PSY 102. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

EDP 203(3) Course ID: 000453
Teaching Exceptional Learners in Regular Classrooms
Introduces the characteristics and instructional needs of exceptional learners with an overview of principles, procedures, methods, and materials for adapting educational programs to accommodate the integration of exceptional children in regular classrooms, when appropriate. Requires field experience of a minimum of 12 clock hours in instructor-approved educational agencies. Pre-requisite: EDP 202 with an earned grade of C or higher. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

EDU 110(3) Course ID: 004451
Orientation to Education
Introduces the roles and responsibilities of both the paraeducator and the classroom teacher. Covers legal and ethical issues that might be encountered in the classroom, instructional support strategies that might be implemented by paraeducators, universal health and safety procedures, and the importance of communication and teamwork in the instructional environment. Introduces the design of learning environments that encourage active participation in individual and group settings. Requires 10 hours of field work. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 120(3) Course ID: 004450
Child and Adolescent Development
Acquaints the student with the cognitive, social, moral, language, emotional, and physical development of children and adolescents. Addresses the application of these theories in the modern classroom. Requires 10 hours of field work. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 130(3) Course ID: 004449
Introduction to Special Education
Introduces methods on the creation of a learning environment, basic classroom management theories, key principles and practices of special education, and the similarities and differences of individuals with and without exceptional learning needs. Requires 10 hours of field work. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 140(3) Course ID: 004448
Introduction to Behavior Management
Introduces the student to strategies of classroom and behavior management that create a positive learning environment encouraging student self-advocacy, increased independence, and improved communication skills. Introduces behavior management strategies that encourage respect and value individual differences among children, youth, and adults and how consequences should be used to motivate positive student behavior. Includes focus on chronic behavior problems. Requires 10 hours of field work. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 150(3) Course ID: 004447
Practical Experiences for the Paraeducator
Provides the capstone experience for the paraeducator certificate. Prerequisite: (EDU 110 and EDU 120 and EDU 130 and EDU 140) or Consent of Coordinator. Lecture: 1.0 credit (15 contact hours); Practicum/Co-op: 2.0 credits (150 contact hours).
Components: Co-Op, Lecture, Practicum
Attributes: Technical

EDU 201(3) Course ID: 000451
Introduction to American Education
Introduces an introduction to teaching including teaching as a profession, major educational philosophies, social reform, trends and issues in education, curriculum and instruction. Requires a minimum of 15 clock hours of field observation in an approved educational setting. Pre-requisite: ENG 101 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 204(3) Course ID: 004547
Technology In the Classroom
Provides the student with a basic skill set to utilize technology in instruction and instructional management. Explores the methods of using computing fundamentals, key technology applications, and the digital environment to enhance teaching and learning. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Digital Literacy
Course Descriptions

EDU 240(3)  Course ID: 002279
Elementary and Middle School Literature
Surveys both traditional and modern literature for children and adolescents. Emphasizes selection, evaluation, storytelling, and the use of media to meet the literary needs and interests of children from preschool through middle school. Requires fifteen hours of field observation. Pre-requisite: ENG 102. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 270(3)  Course ID: 004551
Elementary School Literature
Surveys traditional and modern literature for elementary school children. Emphasizes selection, evaluation, storytelling, and the use of media to meet the literary needs and interests of children. Requires a minimum of 15 clock hours of field observation in an approved educational setting. Pre-requisite: ENG 102. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDU 280(3)  Course ID: 004446
Education Externship/Co-Op
Provides a capstone experience for the AAS degree in Education, designed to integrate program competencies and curriculum to create a cumulative portfolio to demonstrate professional abilities. Requires 150 hours of field work. Pre-requisite: All program courses or Consent of Coordinator. Lecture: 1 credit (15 contact hours); Practicum/Co-op: 2 credits (150 contact hours).
Components: Co-Op, Lecture, Practicum
Attributes: Technical

EDU 299(3)  Course ID: 004445
Instructor Consent Required
Selected Topics in Education
Addresses various education topics, issues and trends. Topics may vary from semester to semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credit hours. Pre-requisite: Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EE 211(4)  Course ID: 000454
Circuits I
Fundamental laws, principles and analysis techniques for DC and AC linear circuits whose elements consist of passive and active components used in modern engineering practice including the determination of steady state and transient responses. Pre-requisite: MA 114. Pre-requisite or concurrent: PHY 232, PHY 242. 4 credits (60 contact hours)
Components: Lecture
Attributes: Technical

EES 101(2)  Course ID: 001332
Basic Electronics
Provides the foundation for further study in technologies related to electricity or electronics. Addresses the following areas: basic electrical components and their properties, quantities, and units of measurement; calculation of voltage, current, resistance, energy, and power using Ohms Law; construction and analysis of series, parallel, and series/parallel circuits; principles of magnetism and electromagnetism; alternating current and voltage; reactive components; construction and analysis of RC, RL, and RLC circuits; sinusoidal and other waveforms. Lecture/Lab: 2.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

EET 119(5)  Course ID: 015852
Basic Electricity
Introduces basic electricity concepts applicable to AC and DC circuits pertinent to the electrical technology industry. Provides an in-depth study of Ohm’s Law, series, parallel, and series-parallel circuit characteristics. Focuses on providing students with an overview of common electrical safety practices, AC generation, AC and DC Principles, magnetic principles, transformers, capacitors, inductors, and basic electrical testing equipment along with a focus on the construction, calculation, measurement, and troubleshooting of various AC and DC circuits by way of laboratory exercises and classroom lecture. Pre-requisite: MAT 065 or equivalent placement level or consent of Instructor. Lecture/Lab: 5.0 credits (45-60 contact hours).
Components: Lecture
Attributes: Technical

EET 127(1)  Course ID: 015853
Electrical Technology Capstone
Serves as the capstone course for the Electrical Technology degree program and all of its concentrations. Integrates prior learning outcomes into a single integrated learning experience. Includes an exit exam that all program graduates must take. Pre-requisite: Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

EET 150(2)  Course ID: 001355
Transformers
Focuses on the operation, installation and application of AC single-phase and three-phase transformers. Testing and maintaining transformer equipment are emphasized, with safety integrated as a core component of the study. Pre-requisite: [(ELT 110 or EET 119) with a minimum grade of "C"] or consent of Electrical Technology program advisor(s). Co-requisite: EET 151. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EET 151(1)  Course ID: 001356
Transformers Lab
Focuses on the operation, installation and application of AC single-phase and three-phase transformers. Testing and maintaining transformer equipment is emphasized, with safety integrated as a core component of the study. Pre-requisite: [(ELT 110 or EET 119) with a minimum grade of "C"] or consent of Electrical Technology program advisor(s). Co-requisite: EET 150. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EET 154(2)  Course ID: 001358
Electrical Construction I
Involves the study of materials and procedures used in construction wiring. Co-requisite: EET 155. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EET 155(2)  Course ID: 001359
Electrical Construction I Lab
Designed to give hands-on experiences with electrical materials and equipment in commercial and industrial construction wiring. Co-requisite: EET 254. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

EET 158(2)  Course ID: 001360
Instructor Consent Required
Practicum
The practicum provides supervised on-the-job work experience related to the student’s educational objectives. Students participating in the Practicum Education program do not receive compensation for their work. Pre-requisite: Consent of Instructor. Practicum: 2 credits (150 contact hours).
Components: Practicum
Attributes: Technical

EET 250(4)  Course ID: 001410
National Electrical Code
Emphasizes the importance of the National Electrical Code as it applies to electrical installations: electrical safety issues, prevention of fire due to the use of electrical energy, prevention of loss of life and property from the hazards that might arise from the use of electrical energy, and proper selection of electrical equipment for hazardous and non-hazardous environments. A learning resource in the preparation for electrical licensing examinations. Pre-requisite: [(EET 154 and EET 155) and EET 252 and EET 253] or (EET 254 and EET 255) with minimum grade of "C" or consent of Electrical Technology program advisor(s). Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

EET 252(2)  Course ID: 001411
Electrical Construction II
Expands the knowledge and skills needed to work in commercial and industrial construction wiring. Pre-requisite: Consent of Instructor or EET 154. Co-requisite: EET 253. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EET 253(2)  Course ID: 001412
Electrical Construction II Lab
Provides hands-on experiences needed to work in commercial and industrial construction wiring. Co-requisite: EET 252. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

EET 254(3)  Course ID: 001413
Electrical Construction
This course involves the study of materials and procedures and expands the knowledge and skills needed to work in commercial and industrial construction wiring. Co-requisite: EET 255. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EET 255(4)  Course ID: 001414
Electrical Construction Lab
Designed to give hands-on experiences with electrical materials and equipment in commercial and industrial construction wiring. Co-requisite: EET 254. Laboratory: 4 credits (120 contact hours).
Components: Laboratory
Attributes: Technical

EET 264(2)  Course ID: 001419
Rotating Machinery
Focuses on the underlying principles of rotating electrical equipment including DC and AC motors and generating equipment construction, operating applications, and the maintenance of DC and AC motors and generating equipment. Pre-requisite: [(ENGT 110 and ENGT 114) with a minimum grade of "C"] or consent of Electrical Technology program advisor(s). Co-requisite: EET 265. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EET 265(2)  Course ID: 001420
Rotating Machinery Lab
Focuses on the principles of operation, application and maintenance of single-phase and three-phase AC motors and AC alternators, DC motors, DC generators. A study of and compliance with the National Electrical Code standards. Pre-requisite: [(EET 110 or EET 119) with a minimum grade of "C"] or consent of Electrical Technology program advisor(s). Co-requisite: EET 264. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

EDU 281(1)
EET 266(3) Course ID: 001424
Rotating Machinery and Transforms Lab
Applies the principles of operation, application and maintenance of single-phase and three-phase AC transformers, motors and alternators. A study of and compliance with the current National Electric Code standards will insure safe installation methods. Pre-requisite: [(EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 266. Lab: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

EET 267(3) Course ID: 001423
Instructor Consent Required
Rotating Machinery and Motor Controls I
This course focuses on the construction, operation and maintenance of DC motors and generators. A study of and compliance with the current National Electric Code standards will ensure safe installation methods. Pre-requisite: [(EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 266. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

EET 268(3) Course ID: 001422
Instructor Consent Required
Rotating Machinery and Motor Controls Lab
Provides practical experience in the use of control devices and their applications in industry today. Provides experience in the construction, operation and maintenance of AC motors and alternators. Safety and electrical lockouts are included. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 268. Lecture: 4.0 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 269(4) Course ID: 001424
Rotating Machinery and Motor Controls I Lab
Provides practical experience in the use of control devices and their applications in industry today. Provides experience in the construction, operation and maintenance of AC motors and alternators, and DC motors and generators. Safety and electrical lockouts are included. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 268. Lab: 4.0 credits (120 contact hours). Components: Laboratory Attributes: Technical

EET 270(2) Course ID: 001425
Electrical Motor Controls I
This course addresses the diversity of control devices and applications used in industry today. Safety and electrical lockouts are included. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 271. Lecture: 2.0 credits (30 contact hours). Components: Lecture Attributes: Technical

EET 271(2) Course ID: 001426
Electrical Motor Controls I Lab
Provides practical experience in the use of control devices and their applications in industry today. Safety and electrical lockouts are included. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 270. Lab: 2.0 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 272(2) Course ID: 001427
Electrical Motor Controls II
This course provides advanced study of motor controls in industry. The course addresses solid state relays, hall effect sensors, proximity detectors and photo detectors. Tasks include sketching, installing and troubleshooting the following: three phase controls, variable speed drives using relays as well as solid state devices, and introduction to programmable controls. Pre-requisite: EET 270. Co-requisite: EET 273.

Components: Lecture Attributes: Technical

EET 273(2) Course ID: 001428
Electrical Motor Controls II Lab
This course provides hands-on experience in advanced studies in electrical controls used in industry including three-phase motor control and variable speed control using solid state devices and programmable controls. Pre-requisite: EET 270. Co-requisite: EET 272. Laboratory: 2.0 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 274(3) Course ID: 001429
Electrical Motor Controls
This course addresses the diversity of control devices and applications used in industry today. Safety and electrical lockouts are also included. This course provides advanced study of motor controls in industry. The course addresses solid state relays, hall effect sensors, proximity detectors and photo detectors. Tasks include sketching, installing and troubleshooting the following: three phase controls, variable speed drives using relays as well as solid state devices, and introduction to programmable controls. Pre-requisite: [(EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 275. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

EET 275(4) Course ID: 001430
Electrical Motor Controls Lab
Provides practical experience in the use of control devices and their applications in industry today. Safety and electrical lockouts are included. Provides hands-on experience in advanced studies in electrical controls used in industry including three-phase motor control and variable speed control using solid state devices and programmable controls. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 274. Lab: 4.0 credits (120 contact hours). Components: Laboratory Attributes: Technical

EET 276(2) Course ID: 001431
Programmable Logic Controllers
Understanding principles and applications of programmable logic controllers including installation, logic fundamentals, and numbering systems; basic programming of inputs, outputs, timers, and counters, comparators, basic data manipulation, and safety circuits. Pre-requisite: (EIT 110 or EET 119) with a minimum grade of "C" and two credits from EET 270 and EET 271 or EET 268 or EET 274 with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 277. Laboratory: 2.0 credits (30 contact hours). Components: Lecture Attributes: Technical

EET 277(2) Course ID: 001432
Programmable Logic Controllers Lab
Provides practical applications of programmable logic controllers including installation, logic fundamentals, and numbering systems; basic programming of inputs, outputs, timers, and counters, comparators, basic data manipulation, and safety circuits of industrial PLCs. Pre-requisite: [EIT 110 or EET 119] with a minimum grade of "C" and [EET 269 or (EET 271 and EET 273)] with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 276. Lab: 2.0 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 278(1 - 8) Course ID: 001435
Instructor Consent Required
Special Problems I
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor. Laboratory: 1 - 8 credits. Components: Laboratory Attributes: Technical

EET 283(2) Course ID: 001436
Instructor Consent Required
Special Problems II
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor. Laboratory: 2 credits (90 contact hours). Components: Laboratory Attributes: Technical

EET 285(3) Course ID: 001437
Special Problems III
A course designed for the student who has demonstrated specific special needs. Pre-requisite: Permission of Instructor. Laboratory: 3 credits (135 contact hours). Components: Laboratory Attributes: Technical

EET 286(2) Course ID: 004627
Programmable Logic Controllers II Lab
Provides hands-on applications dealing with sequencers, shift registers, networks, communication software, human to machine interfaces, and troubleshooting techniques used with programmable logic controllers. Pre-requisite: [(EET 276 and EET 277) with a minimum grade of C] or consent of Electrical Technology program advisor(s). Co-requisite: EET 286. Laboratory: 2 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 287(2) Course ID: 004628
Programmable Logic Controllers II
Focuses on sequencer instructions, shift registers, process control instructions, networking, communications, human to machine interfaces, and troubleshooting techniques used with programmable logic controllers. Pre-requisite: [(EET 276 and EET 277) with a minimum grade of C] or consent of Electrical Technology program advisor(s). Co-requisite: EET 278. Credits: 2 credits (60 contact hours). Components: Laboratory Attributes: Technical

EET 298(1 - 8) Course ID: 001438
Practicum
The Practicum provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Practicum do not receive compensation. (This course may be taken for 1 - 8 credits) Components: Practicum Attributes: Technical

EET 299(1 - 8) Course ID: 001439
Instructor Consent Required
Cooperative Education Program
Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. (This course may be taken for 1 - 8 credits.) Pre-requisite: Consent of Instructor Components: Co-Op Attributes: Technical

EFM 100(3) Course ID: 001440
Personal Financial Management
Successful completion of this course will result in an understanding of the role of the U.S. in a global economy and how an individual can function successfully in the U.S. economic system. Students will explore the various aspects involved in being responsible consumers, the importance of personal financial planning, the relationship between employment opportunities and financial security, and other aspects of becoming successful and productive workers, consumers, and citizens. Lecture: 3 credits (45 contact hours). Components: Lecture
Course Descriptions

EGY Energy Technologies

EGY 120(4) Course ID: 006821
Outside Plant Communications
Introduces students to fiber optic communication systems and up-to-date fiber technologies including how to design, install, test and maintain fiber optic single mode networks. Emphasizes Single Mode fiber optic installation with the associated international standards, theory, and practices. Prepares the student to work with fiber optic splicing, testing and troubleshooting equipment that is found in the workplace. Pre-requisite: (ELT 110 and ETT 110) or (electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EGY 170(4) Course ID: 006822
Energy Utility Technologies
Introduces students to the technologies used in energy utility companies, including line maintenance, underground operations, substations and switchyards and transmission operations. Gives students the opportunity to climb a utility pole and conduct basic maneuvers. Addresses types of underground systems, substation and switchyard equipment and transmission structures. Emphasizes electrical, underground, line maintenance and transmission safety. Pre-requisite: (ELT 110 and EET 150 and EET 151) or (electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EGY 220(4) Course ID: 006823
Energy Efficiency Electrical Controls
Designed for Electrical Technology students and Apprentice, Journeyman, Master, and Contractor Electricians as a foundation into the studies of green technology relating to electrical energy. Focuses on the assessment of electrical energy usage in commercial buildings with the understanding that the electrical energy technician will install and maintain efficient electrical controls and equipment. Prepares students to assist in the design of electrical energy systems under the supervision of a Certified Energy Manager or licensed Professional Engineer. Pre-requisite: (ELT 110 and EET 154 and EET 155 and EET 252 and EET 253 and EET 250) or (electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EGY 230(4) Course ID: 006824
Solar / Photovoltaic Technologies
Covers the design and installation of grid connected, stand-alone, and hybrid photovoltaic (PV) systems, and involves hands-on work with PV systems and equipment. Intended for electrical technology students, apprentices, contractors, electricians, and other practitioners, with an overall goal of developing “system knowledgeable” professionals to help ensure the safety and quality of PV system installations. Pre-requisite: (ELT 110 and EET 154 and EET 155 and EET 252 and EET 253 and EET 250) or (electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EGY 240(4) Course ID: 006825
Energy Efficiency and Analysis
Discusses the basic principles of how energy flows into and out of a residential building, using the “house as a system” approach. Develops the skills needed to perform a home energy audit. Gives students hands-on experiences with a blowers door, thermal imaging camera as well as other auditing tools. Pre-requisite: Consent of instructor. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

ELT Engineering & Electronics Technology

ELT 102(2) Course ID: 000526
Blueprint Reading
A comprehensive study of current drafting standards and blueprint reading techniques are included. Topics include standard lines and symbols, sketching techniques, orthographic projection, auxiliary views, detail and assembly drawings, dimensions, tolerances, sectional views, title block information, machining, specifications, and specialized forms of engineering drawings. Lecture: 2.0 (30 contact hours).
Components: Lecture
Course Equivalents: BRX 120
Attributes: Technical

ELT 103(3) Course ID: 005443
Introduction to Engineering
Provides an introduction to the engineering profession, engineering disciplines, and technology. Emphasizes a problem-solving approach, engineering design process, and team projects. Includes an introduction to engineering graphics. Intended for students of all majors. Pre-requisite or Co-requisite: Current Placement Scores for College Level Quantitative Reasoning or Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

ELT 105(3) Course ID: 005591
Computer Maintenance Essentials
Introduces basic computer hardware and operating systems, covering skills such as installing, building, upgrading, repairing, configuring, troubleshooting, optimizing, diagnosing and preventive maintenance, with additional elements of soft skills and security. Emphasizes objectives that map closely to the CompTIA A+ Essentials national examination that validates the basic skills needed by any entry-level computer service technician. Pre-requisite: Computer literacy or Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

ELT 106(2) Course ID: 000529
Mechanical Engineering Graphics
Includes basic technical sketching and working drawings as applied to mechanical engineering. Students will create or analyze multi-view drawings, symbols, schematics, and sketches typical of mechanical graphics drawings. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

ELT 107(4) Course ID: 000533
Computer Applications for Technicians
Introduces computer applications commonly used in technical occupations. Covers circuit analysis, computational, analytical, and other software packages. Lecture: 1.0 credit (15 contact hours). Lab: 3 credits (90 contact hours).
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules

ELT 110(5) Course ID: 004631
Circuits I
Introduces application of basic DC and AC circuits, including circuit analysis techniques with discussion of introductory magnetism and transformer principles. Emphasizes design, construction, and troubleshooting of simple DC and AC circuits in laboratory exercises. Pre-requisite: (MAT 065 or equivalent placement level) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

ELT 114(5) Course ID: 004634
Circuits II
Addresses theory and application of complex alternating current and direct current circuits. Emphasizes impedance, reactance, power and electrical energy, electrical measurement instruments, and circuit analysis. Pre-requisite: (ELT 110 with a grade of C or greater) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

ELT 118(3) Course ID: 000566
Computer Numerical Control
Introduces computer numerical control technology, covering programming and metal removal techniques. Includes topics of controllable machine components, tools, programmable functions, control system components, physics of metal cutting, metal cutting data, coordinate systems, NC-related dimensioning, and CNC programming. Pre-requisite: Consent of Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

ELT 120(3) Course ID: 004637
Digital I
Introduces theory and application of digital logic methods. Includes Boolean algebra, combinational logic theory, sequential circuits, number systems and codes, and design and troubleshooting of digital logic circuits. Pre-requisite: (MAT 065 or equivalent placement level) or Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

ELT 122(3) Course ID: 000573
Mechanical Power Transmission Systems
Introduces industrial mechanical systems and devices, which are commonly associated with Millwright and Industrial Maintenance functions. Includes topics of belt drives, gear drives, chain drives, couplings, packings and seals, bearings, mechanical fasteners, pipe fittings, pumps, and valves. Co-requisite: ELT 124. Lecture: 3.0 credit (45 contact hours).
Components: Lecture
Attributes: Technical

ELT 124(1) Course ID: 000578
Mechanical Power Transmission Systems Lab
Introduces mechanical systems and devices common to the Millwright and Industrial Maintenance trades. Includes topics of belt drives, gear drives, chain drives, couplings, packings and seals, bearings, mechanical fasteners, pipe fittings, pumps, and valves. Co-requisite: ELT 122. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

ELT 201(4) Course ID: 000603
Statics and Strength of Materials
Introduces static equilibrium involving forces, moments, couples, and equivalent systems. Explores stresses, strains and deflections associated with trusses, frames, beams, columns, and joints. These devices are subjected to various loadings and environments, and are made of standard construction materials. Pre-requisite: (MAT 150 and MAT 155 or MAT 110) or consent of instructor. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
### ELT 210(4)
**Course ID:** 004639  
**Devices I**  
Provides basic theory and application of semi-conductor devices. Emphasizes design, construction and troubleshooting of diode and transistor circuits, amplifiers and power supplies. Pre-requisite: ELT 110 with a grade of C or greater) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### ELT 214(4)
**Course ID:** 004642  
**Devices II**  
Covers theory and application of advanced semiconductor devices. Emphasizes thyristors, FETs, integrated circuits, and other devices as applied to audio frequency amplifiers, feedback circuits, modulators, detectors, and other basic electronic circuits. Pre-requisite: ELT 210 with a grade of C or greater) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### ELT 220(3)
**Course ID:** 004645  
**Digital II**  
Provides theory and application of advanced digital logic methods. Includes small and medium scale integrated circuits logic families, interfacing techniques, arithmetic circuitry, programmable devices, and an introduction to microprocessors. Pre-requisite: ELT 120 with a grade of C or greater) or Consent of Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### ELT 222(3)
**Course ID:** 004647  
**Instructor Consent Required**  
**Mechanics of Telephony**  
Covers history of the telephone and regulations that impact the telecommunications industry, analog and digital transmission mediums, and the evolution of wireless and digital services. Utilizes the graduated height method for developing climbing skills and confidence. Pre-requisite: Consent of Instructor. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 224(3)
**Course ID:** 004648  
**Instructor Consent Required**  
**Basic Telecommunications Installation and Maintenance**  
Provides an overview of concepts needed to complete the duties of a telecommunications service technician and provide the foundational basic skills and knowledge required to effectively perform the installation and maintenance job duties and functions. Introduces fiber optic transmissions and cable repair. Pre-requisite: Consent of Instructor. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (60 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 232(3)
**Course ID:** 000623  
**Computer Software Maintenance**  
Includes maintenance of the personal computer with an emphasis on installation, upgrading, and configuration of the operating system. Covers memory management, boot sequences, printing subsystems, application software and networking with troubleshooting as a main focal point including viruses. When combined with ELT 234, this course will help prepare students to take CompTIA A+ certification tests. Pre-requisite: (Computer literacy course or demonstrate competency) or consent of instructor. Lecture: 2.0 credits (30 contact hours), Laboratory: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 234(3)
**Course ID:** 000521  
**Computer Hardware Maintenance**  
Covers maintenance of the personal computer with an emphasis on installation, upgrading, and configuration of computer hardware. Covers network and Internet access, internal addressing, architecture, interrupts complete PC construction and basic troubleshooting. When combined with ELT 232, this course will help prepare students to take CompTIA A+ certification tests. Pre-requisite: (Computer literacy course or demonstrate competency) or consent of instructor. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 240(6)
**Communications Electronics**  
Provides the theory of AM and FM, RF communications, transmission, reception, multiplexing, and modern data communications. Pre-requisite: ELT 220 and ELT 214 or Consent of Instructor. Lecture: 4.0 credits (60 contact hours), Lab: 2.0 credits (60 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 244(4)
**Course ID:** 000644  
**Instructor Consent Required**  
**Electrical Machinery and Controls**  
Covers the study of theory and utilization of electrical motors and generators, including AC and DC motors and drives. Includes theory and utilization of limit switches, solenoids, relays, contacts, and solid state devices in control circuits. Provides application of digital and analog control techniques, ladder logic, and programming techniques to industrial and manufacturing processes. Pre-requisite: Consent of Instructor. Lecture: 3.0 credits (45 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 250(4)
**Course ID:** 000657  
**Programmable Logic Controllers**  
Covers the study of Programmable Logic Controllers with an emphasis on the function and use of PLCs in an industrial environment. Pre-requisite: ELT 244 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 260(5)
**Instructor Consent Required**  
**Robotic and Industrial Automation**  
Introduces theory of robots including terminology, components, and basic programming. Provides theory and application of servo and non-servo robots. Includes robot types, controllers, manipulators, and basic robotic programming. Provides the theory and operation of flexible and computer-integrated manufacturing and control systems. Provides the opportunity to develop, set up work cells, and integrate the work cells into a total computer-integrated manufacturing system at a beginning level. Pre-requisite: Consent of Instructor. Lecture: 3.0 credits (45 contact hours), Lab: 2.0 credits (60 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### ELT 261(3)
**Course ID:** 000679  
**Instrumentation and Measurements**  
Provides a study of instruments used by the mechanical engineering technician and training in the techniques of their use. Lecture: 3.0 credits (45 contact hours).  
**Components:** Lecture  
**Attributes:** Technical

### ELT 264(4)
**Course ID:** 000691  
**Mechanical Design**  
Covers design techniques associated with the design of machine elements, including structural members subjected to combined stresses resulting from shear or torsion coupled with axial and bending loads. Includes material treatments, failure theories, prevention and steady and variable (fatigue) elements, including rotating shafts, pressure vessels, power screws, and attachment schemes. Pre-requisite: (ELT 201 and PHY 211) or Consent of Instructor. Lecture: 4.0 credits (60 contact hours).  
**Components:** Lecture  
**Attributes:** Technical

### ELT 265(3)
**Course ID:** 000697  
**Applied Fluid Power**  
Covers the fundamental types of hydraulic and pneumatic devices and circuits used in industry. Includes basic fluid mechanics, industrial hydraulic components, pneumatic components, circuit design and analysis, electrical control of fluid power circuits, and fluid power maintenance and safety. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (30 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

### ELT 280(1)
**Course ID:** 006806  
**Engineering and Electronics Technology Capstone**  
Serves as the capstone course for the Engineering and Electronics Technology degree program and all of its concentrations. Integrates prior learning outcomes into a single integrated learning experience. Includes an exit exam that all program graduates must take. Pre-requisite: (ELT 120 and ELT 210) or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).  
**Components:** Lecture  
**Attributes:** Technical
ELT 1104(1) Course ID: 005641
Magnetism and Alternating Current
Introduces basic AC circuits, specifically introductory magnetism and basic AC theory. Emphasizes design, construction, and troubleshooting of simple AC circuits in laboratory exercises. Pre-requisite: ELT 1103 with a grade of C or better) or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Lab: 0.4 credits (12 contact hours).
Components: Laboratory, Lecture

ELT 1105(1) Course ID: 005642
Capacitance and Inductance
Introduces basic AC circuits, specifically capacitance, inductance, and transformer principles. Emphasizes design, construction, and troubleshooting of simple AC circuits in laboratory exercises. Pre-requisite: (ELT 1104 with a grade of C or better) or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Lab: 0.4 credits (12 contact hours).
Components: Laboratory, Lecture

ELT 1201(1) Course ID: 005648
Instructor Consent Required
Digital Basics
Introduces basic digital circuits, specifically number systems and input output functions of gates and circuits. Pre-requisite: Consent of Instructor. Lecture: 0.66 credits (10 contact hours). Lab: 0.34 credits (10 contact hours).
Components: Laboratory, Lecture

ELT 1202(1) Course ID: 005649
Logic Circuit Design
Introduces design methods for basic digital circuits. Pre-requisite: (ELT 1201 with a grade of C or better) or Consent of Instructor. Lecture: 0.67 credits (10 contact hours). Lab: 0.33 credits (10 contact hours).
Components: Laboratory, Lecture

ELT 1203(1) Course ID: 005650
Logic Circuit Components and Troubleshooting
Covers construction, troubleshooting and testing of logic circuits. Pre-requisite: (ELT 1201 with a grade of C or better) or Consent of Instructor. Lecture: 0.67 credits (10 contact hours). Lab: 0.33 credits (10 contact hours).
Components: Laboratory, Lecture

EM Engineering Mechanics
EM 221(3) Course ID: 000462
Statics
Study of forces on bodies at rest. Vector algebra, study of force systems; equivalent force systems; distributed forces; internal forces; principles of equilibrium; application to trusses, frames and beams; friction. Pre-requisite or concurrent: MA 213. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

EMS Paramedic/Allied Health
EMS 105(6) Course ID: 007303
Emergency Medical Technician - EMT
Provides the first level of training in the career structure of Emergency Medical Services. Integrates didactic course material and the lab component necessary for the delivery of entry level emergency medical care to individuals who are experiencing a disruption in normal body functions due to illness and/or injury and require intervention to prevent morbidity and mortality. Prepares the student to sit for the National Registry EMT examination that is required for Kentucky certification as an EMT. Focuses on basic anatomy and physiology, scene and patient assessment, airway and ventilation, cardiovascular and body systems support, motion limiting devices, wound and fracture management, administration of basic patient medications, extrication, transportation, and patient monitoring as well as medico-legal aspects and ambulance operations. Includes a minimum twenty-four (24) hour clinical observation in the emergency department and/or on a state licensed ambulance service. Pre-requisite: CPR 100 Cardiopulmonary Resuscitation or Current CPR completion card; card must be at the basic life support healthcare provider or professional rescuer level. Lecture/Lab: 5.0 credits (150 contact hours).
Components: Lecture Attributes: Technical

EMS 150(5) Course ID: 016094
Electrocardiogram Technology
Designed for students wanting to work in doctor's offices, hospitals, cardiac clinics, or anywhere electrocardiograms need to be performed. Integrates comprehensive knowledge of the anatomy of the heart including conduction pathways, circulatory system, and mechanical function. Presents the medical terminology, pathophysiology related to cardiac crisis, arrhythmia recognition and 12-lead interpretation. Pre-requisite: Reading, English, and Mathematics assessment exam scores above KCTCS developmental level or successful completion of the prescribed developmental courses. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (45 contact hours). Clinical: 1.0 credit (45 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

EMS 200(4) Course ID: 007304
Introduction to Paramedicine
Integrates comprehensive knowledge of EMS Systems including: safety and wellness, communications, medical/ legal issues, life span parameters, public health, medical terminology, pathophysiology, anatomy and physiology, critical thinking, and physical assessment and research to improve the health and well-being of individuals. Pre-requisite: EMS 105 or FRS 2061 or current unrestricted state license or Paramedic certification or valid National Registry status. EMT eligible and Program Admission, AHS 115 or CLA 131 Or Consent of Instructor. BIO 135 Or Consent of Instructor. Co-requisite: EMS 211. Lecture: 4.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

EMS 210(3) Course ID: 007305
Emergency Pharmacology
Introduces students to the paramedic's role and responsibilities of medication administration and the basic principles of pharmacology. Presents introductory core concepts of pharmacology including drug regulations, classifications, schedules, categories, delivery systems, calculations, and drug administration. Covers core concepts of emergency clinical pharmacology including major body systems, illness and injury, and methods drugs are used therapeutically to manage affected individuals. Integrates appropriate anatomy and physiology, medical terminology, and ethical and legal behaviors. Pre-requisite: EMS 200. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

EMS 211(2) Course ID: 007306
Fundamentals Lab
Encourages both an individual and group approach to simulated patient care in the laboratory setting. Includes fundamental skill sets such as patient assessment, airway and ventilation, and IV and fluid therapy. Co-requisite: EMS 200. Lab: 2.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

EMS 215(1) Course ID: 007307
Clinical Experience I
Applies didactic knowledge, psychomotor skills, and laboratory instruction with the realities of patient care in the hospital and field setting. Includes supervision by a registered nurse, nurse practitioner, physician, or paramedic preceptor in an environment that represents both an instructional and evaluative phase of the program focusing on the emergency department, obstetric unit, mental health facility, and pediatric units. Pre-requisite: EMS 225. Clinical: 1.0 credit (60 contact hours).
Components: Clinical Attributes: Technical

EMS 220(3) Course ID: 007308
Cardiovascular Emergencies
Provides a detailed study of cardiovascular emergencies and the assessment and management of patients requiring critical intervention. Includes anatomy and physiology, medical terminology, pathophysiology, and clinical manifestations related to cardiac crisis, arrhythmia recognition and 12-lead ECG for field diagnosis, as well as pharmacological and electrical interventions. Pre-requisite: EMS 210 and EMS 211. Co-requisite: EMS 221. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

EMS 221(1) Course ID: 007309
Cardiac and Trauma Lab
Designed to encourage both an individual and group approach to simulated patient care in the laboratory setting. Includes fundamental skill sets and the addition of cardiovascular and trauma emergency patient care and management. Co-requisite: EMS 220 and EMS 230. Lab: 1.0 credit (45 contact hours).
Components: Laboratory Attributes: Technical

EMS 225(1) Course ID: 007310
Clinical Experience II
Provides the opportunity for application of didactic knowledge, psychomotor skills, and laboratory instruction with the realities of patient care in the hospital setting. Supervised by a registered nurse, nurse practitioner, physician, or paramedic preceptor in an environment that represents both an instructional and evaluative phase of the program focusing on the emergency department, obstetric unit, mental health facility, and pediatric units. Pre-requisite: EMS 215. Clinical: 1.0 credit (60 contact hours).
Components: Clinical Attributes: Technical

EMS 230(4) Course ID: 007311
Traumatic Emergencies
Presents the advanced concepts of out-of-hospital trauma care and critical thinking activities leading to formulation of a field impression and implementation of an appropriate treatment plan and scene management. Includes the kinematics of trauma, assessment, resuscitation, management, monitoring, and transportation of trauma patients across the life span. Co-requisite: EMS 221. Lecture: 4.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

EMS 231(1) Course ID: 007312
Medical Lab
Designed to encourage both an individual and group approach to simulated patient care in the laboratory setting. Includes fundamental skill sets with a focus on application to medical emergencies. Co-requisite: EMS 240 and EMS 250. Lab: 1.0 credit (45 contact hours).
Components: Laboratory Attributes: Technical

EMS 235(2) Course ID: 007313
Clinical Experience III
Provides the opportunity for application of didactic knowledge, psychomotor skills, and laboratory instruction with the realities of patient care in the hospital setting. Supervised by a registered nurse, nurse practitioner, physician, or paramedic preceptor in an environment that represents both an instructional and evaluative phase of the program focusing on the emergency department, obstetric unit, mental health facility, and pediatric units. Co-requisite: EMS 225. Clinical: 2.0 credits (120 contact hours).
Components: Clinical Attributes: Technical

EMS 240(3) Course ID: 007314
Medical Emergencies I
Provides an understanding of the anatomic structures, physiology, and pathophysiology encountered during assessment and the provision of care for medical emergencies involving the respiratory system, nervous system, abdominal and gastrointestinal tract, genitourinary and renal systems, gynecology, musculoskeletal system, and the eyes, ears, nose, and throat. Co-requisite: EMS 231. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
EMS 250(3) Course ID: 007315
Medical Emergencies II
Provides an understanding of the anatomic structures, physiology, and pathophysiologies encountered during assessment and the provision of care for medical emergencies encompassing immunology, infectious disease including HIV/AIDS, the endocrine system, psychiatric conditions, toxicology, and hematology. Pre-requisite: EMS 240. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EMS 260(3) Course ID: 007316
Special Populations
Provides the opportunity to develop special knowledge and skills necessary to assess and manage ill and or injured patients across the human life span. Focuses on the acquisition of clinical knowledge and skills in diverse populations that include obstetrics, neonatology, pediatrics, geriatrics, and special challenge topics. Pre-requisite: EMS 250. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EMS 270(1) Course ID: 007317
EMS Operations
Provides knowledge necessary to safely manage multi-casualty incidents and rescue situations, utilize air medical resources, identify hazardous materials, perform vehicle extrication, and minimize the associated risks related to terrorism and disaster. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
Attributes: Technical

EMS 275(1) Course ID: 007318
Seminar in Advanced Life Support (ALS)
Presents a comprehensive course encompassing advanced cardiac life support and pediatric advanced life support, or trauma life support, or other seminar course in relative subject matter such as medical emergencies or geriatric emergencies, to enhance the knowledge and skills acquired in the paramedic program. Addresses immediate life threatening conditions and critical interventions in a case study-scenario format where principles of assessment and intervention are applied in a team setting. Pre-requisite: EMS 225. Lab: 1.0 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

EMS 285(5 - 6) Course ID: 007319
Field Internship & Summation
Provides the opportunity for application of didactic knowledge, psychomotor skills, and clinical instruction with the realities of being the team leader delivering advanced patient care in the field setting. Supervised by a paramedic preceptor in an environment that represents both an instructional and evaluative phase of the program. Included is the summative phase of the Field Internship. Pre-requisite or Co-requisite: EMS 275. Lab: 1.0 credit (45 contact hours). Practicum: 4.0 - 5.0 credits (360-450 contact hours).
Components: Laboratory, Practicum
Attributes: Technical

ENC 91(3) Course ID: 000465
Foundations of College Writing II
Applies writing as a process with instruction in intermediate writing skills and technology. Stresses organization, idea development through critical thinking, and editorial improvement through multi-paragraph writings. Introduces basic research and documentation through writing in response to reading. Pre-requisite: Placement by KCTCS Assessment and Placement policy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - English, Course Also Offered in Modules

ENC 913(0.25) Course ID: 006752
Introduction to Research
Introduces basic research and documentation through writing in response to reading. Pre-requisite: As determined by KCTCS Placement Policy or successful completion of ENC 0912. Lecture: 0.25 credits (3.75 contact hours).
Components: Lecture
Attributes: Remedial - English

ENC 914(1) Course ID: 006753
Writing as Process
Provides practice in the writing process, stressing organization, idea development, and editorial improvement. Pre-requisite: As determined by KCTCS Placement Policy or successful completion of ENC 0913. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Remedial - English

ENG 100(2) Course ID: 004574
English Workshop
Provides parallel and supplemental review of English skills needed for students with an English ACT of 18 or 19 or a Compass placement test score between 70-79 who are also enrolled in ENG 101. If these students withdraw from ENG 100, they must also withdraw from ENG 101. Credit cannot be received by special exam. Lecture: 2 credits (30 contact hours). Pre-requisite: ACT score of 18 or 19 with a Compass placement score of 70-80. Co-requisite: Enrollment in ENG 101.
Components: Lecture
Attributes: Other

ENG 101(3) Course ID: 000467
Writing I
Focuses on academic writing. Provides instruction in drafting and revising essays that express ideas in Standard English, including reading critically, thinking logically, responding to texts, addressing specific audiences, researching and documenting sources. Includes review of grammar, mechanics and usage, Notes: (a) credit not available by special examination; (b) English 101 and 102 may not be taken concurrently; (c) AP credit in the English Language and Composition category for ENG 101 awarded as indicated by AP scoring chart in current KCTCS catalog. Pre-requisite: Appropriate writing placement score or ENC 091. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: WC - Written Communication, Course Also Offered in Modules

ENG 102(3) Course ID: 000468
Writing II
Emphasizes argumentative writing. Provides further instruction in drafting and systematically revising essays that express ideas in Standard English. Includes continued instruction and practice in reading critically, thinking logically, responding to texts, addressing specific audiences, and researching and documenting credible academic sources. NOTE: Credit is not available by special examination. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: WC - Written Communication, Course Also Offered in Modules

ENG 105(3) Course ID: 000469
Instructor Consent Required
Writing: An Accelerated Course
Combines the content of ENG 101 and ENG 102 in an intensive course emphasizing argumentation and library research and fulfills the writing/accessing information requirements. Pre-requisite: ACT English score of 25 or COMPASS English score of 95 AND ACT Reading score of 20 or COMPASS reading score of 90. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: WC - Written Communication
ENG 261(3)  
Survey of Western Literature from the Greeks Through the Renaissance

Studies the works of major Western authors from the Bible and Ancient Greek literature through the Renaissance. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: AH - Arts and Humanities

Course Descriptions
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Attributes</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 299(1 - 3)</td>
<td>Special Topics in English</td>
<td>Other</td>
<td>1 - 3</td>
<td>15-45</td>
</tr>
<tr>
<td>ENG 1011(0.75)</td>
<td>Writing a Personal Essay</td>
<td></td>
<td>0.75</td>
<td>11.25</td>
</tr>
<tr>
<td>ENG 1012(0.75)</td>
<td>Writing a Profile Essay</td>
<td></td>
<td>0.75</td>
<td>11.25</td>
</tr>
<tr>
<td>ENG 1013(0.75)</td>
<td>Writing to Persuade</td>
<td></td>
<td>0.75</td>
<td>11.25</td>
</tr>
<tr>
<td>ENG 1014(0.75)</td>
<td>Writing with Sources</td>
<td></td>
<td>0.75</td>
<td>11.25</td>
</tr>
<tr>
<td>ENG 1021(1)</td>
<td>The Language of Argument</td>
<td></td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>ENG 1022(1)</td>
<td>Argument Style and Design</td>
<td></td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>ENG 1023(1)</td>
<td>Research and Argument</td>
<td></td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>ENG 2031(1)</td>
<td>Business Writing Basics</td>
<td></td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>ENG 2032(1)</td>
<td>Reports and Proposals</td>
<td>Technical</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>ENM 101(9)</td>
<td>Energy Industry Fundamentals</td>
<td>Technical</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>ENM 1011(3)</td>
<td>Sustainability Management</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENM 1012(3)</td>
<td>Energy Efficiency Analysis</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENM 1013(3)</td>
<td>Energy Emerging Technologies</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENV 200(3)</td>
<td>Environmental Technology</td>
<td></td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENV 250(2)</td>
<td>Regulatory and Environmental Issues in Energy Management</td>
<td>Other</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENM Energy Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENM 101(9)</td>
<td>Energy Industry Fundamentals</td>
<td>Technical</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>ENM 111(3)</td>
<td>Sustainability Management</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENM 200(3)</td>
<td>Energy Efficiency Analysis</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENM 250(2)</td>
<td>Regulatory and Environmental Issues in Energy Management</td>
<td></td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>ENV 200(3)</td>
<td>Environmental Technology</td>
<td>Technical</td>
<td>3</td>
<td>45</td>
</tr>
</tbody>
</table>
EQM 100(3) Course ID: 004755
Introduction to Equine Studies
The intent of this course is to give students a general overview and basic understanding of the horse, its care and management. Course topics include identification, anatomy, health, nutrition, facility and equipment management. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EQM 120(3) Course ID: 004756
Introduction to Commercial Breeding Practices
Introduces prospective horse personnel to the breeding farm environment. Includes topics that relate to commercial breeding farm management and the necessary record keeping requirements. Pre-requisite: EQM 100 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQM 140(2) Course ID: 004757
Equine Business Management I
This course in equine management that serves to introduce the student to private and commercial horse farm operations, economic trends in the horse industry, international marketplace, capital, credit and risk associated with the equine industry. Pre-requisite: EQM 100 and BA 160, or consent of instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EQM 140(2) Course ID: 004852
Equine Business Management II
This course is a continuation of Equine Business Management I. Topics of discussion include types of farm ownership, structure of the horse farm as a business, and evaluation of farm financial performance through production levels, employee management, tax planning, bloodstock value, cash flow and budgeting. Pre-requisite: EQM 140 and concurrent enrollment in or successful completion of ACC 201 and ECO 201, or consent of instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

EQM 240(2) Course ID: 004758
Equine Law
This course explores the value of legal documents as they relate to commercial and recreational horse/horse farm owners. Topics discussed include review of current legislation governing horse activities, types of legal contracts, liability issues, and security interests. Pre-requisite: EQM 100 and BA 267, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQM 246(1) Course ID: 004759
Current Trends in the Equine Industry
Seminar course in the horse industry designed to provide students with the opportunity to investigate, evaluate and debate key issues confronting horse owners and horse industry participants. Students are encouraged to analyze controversial circumstances in the equine industry and provide insight and logical conclusion. Seminar topics may include such issues as equine adoption, slaughter, transport, medications, account overcharging, and public image. Pre-requisite: EQM 242 or consent of instructor. Lecture 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

EQM 250(3) Course ID: 004760
Equine Practicum
A supervised, field-based learning experience in the equine industry, including observation and proactive participation in affiliated environments. Students are required to analyze their experiences throughout the semester to develop career objectives and strong interpersonal, communication and leadership skills. Pre-requisite: EQM 240, EQM 242, and concurrent enrollment in or successful completion of EQM 246. Practicum: 3 credits (180 contact hours).
Components: Practicum
Attributes: Technical

EQS 101(3) Course ID: 007320
Introduction to the Thoroughbred
Provides a general overview and basic understanding of care and management of the thoroughbred, including identification registration information, conformation, equine behavior and equine facility design and management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQS 103(1) Course ID: 005349
Racehorse Care
Introduces principles of care for racehorses in a race barn training environment with students learning industry accepted standards and techniques utilized in providing care for racehorses. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
Attributes: Technical

EQS 104(2) Course ID: 007321
Racehorse Care Lab
Introduces principles of care for racehorses in a race barn training environment with students learning industry accepted standards and techniques while providing daily care for 1 or 2 racehorses. Pre-requisite or Co-requisite: EQS 103. Lab: 3.0 credits (135 contact hours).
Components: Laboratory
Attributes: Technical

EQS 110(3) Course ID: 005350
Basic Equine Physiology
Continues the study of equine care by examining the anatomy and physiology of equine body systems and applications of this knowledge to the raising, training and management of horses in general and racehorses in particular. Includes identification of three muscle fiber types; types, causes and symptoms of colic; thermoregulation; blood components and flow; upper and lower respiratory airway diseases and infectious neurological diseases. Pre-requisite Or Co-requisite: EQS 101 or consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQS 111(1) Course ID: 005351
Introduction to Riding Racehorses
Covers requirements for becoming a licensed professional jockey including physical, mental and emotional components, regulatory agency requirements and necessary life management skills. Includes the history of race riding, identification of important riders in history and noteworthy current riders. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

EQS 112(4) Course ID: 005352
Instructor Consent Required Racehorse Riding Skills I
Introduces basic horse riding skills and their application to racehorse riding. Presents and requires daily practice of proper rider position at walk, trot, canter, on turn and in straight. Includes discussion and round pen applications of center of gravity of horse, center of gravity of rider and center of gravity of the combination of horse and rider. Teaches proper techniques for cooling out after exercise and or racing. Equine Studies is a selective admission program and enrollment in this course is dependent upon acceptance into the Equine Studies program. Pre-requisite: EQS 111 and Consent of Instructor. Pre-requisite Or Co-requisite: EQS 103 and EQS 104. Lecture/Lab: 4.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

EQS 113(4) Course ID: 005353
Instructor Consent Required Racehorse Riding Skills II
Continues development of riding skills learned in EQS 112 by applying principles to riding racehorses in morning exercise sessions. Includes application of balance to evaluate soundness in racehorses; basic starting gate techniques for riders; principles of teaching young horses to enter and leave the starting gate and techniques for handling unruly horses. Pre-requisite: EQS 112 and consent of the instructor. Lecture/Lab: 4.0 credit (150 contact hours).
Components: Lecture
Attributes: Technical

EQS 115(3) Course ID: 015655
Equine Health and Medications
Presents principles of health management as it relates to the prevention and treatment of common diseases, parasites and wounds. Pre-requisite: EQS 110 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQS 121(1) Course ID: 005497
Introduction to Breaking and Training Racehorses
Introduces the basic requirements for becoming a licensed racehorse trainer or other equine care worker. Includes historical contributions of prominent owners, breeders, trainers and racehorses that significantly impacted the history of their respective breed. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

EQS 122(3) Course ID: 005498
Instructor Consent Required Yearling Breaking and Management
Introduces the basics of managing and training weanling and yearling racehorses including conformation, movement, pedigree analysis; pre-purchase examinations and practical application of pressure-release techniques of breaking and training young racehorses. Pre-requisite: EQS 121 and permission of instructor. Lecture: 1 credit (15 contact hours). Laboratory: 2 credits (90 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

EQS 123(3) Course ID: 005499
Breaking and Prepping Two-Year-Olds
Covers basics of managing racehorses through their yearling to 2-year old transition. Includes acquiring yearlings and/or two-year-olds, breaking, prepping for in-training sales and/or racing, concepts of nutrition for growing equine athletes, cardiovascular conditioning, muscle fitness, sale presentation and injuries of two-year-olds in race training. Pre-requisite Or Co-requisite: EQS 103: Racehorse Care EQS 104: Racehorse Care Lab. Lecture/Lab: 3.0 credits (105 contact hours).
Components: Lecture
Attributes: Technical

EQS 125(3) Course ID: 005804
Equine Nutrition
Presents principles of nutritional management as it relates to the overall health and performance of the horse. Pre-requisite: EQS 110 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQS 130(3) Course ID: 005354
Introduction to the Racing Industry
Introduces students to racing industry organizations, personnel, facilities and the rules of racing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
While the maximum amount of credit granted for Equine Studies Cooperative Education (EQS 299) (1-9) Course ID: 005626 Attributes: Technical

Racehorse Riding Principles
Builds on basic skills learned in EQS 113 and adds principles of training racehorses on a training track in company of other horses and riders, teaching horses to pass others, working in company, proper use of riding crop and breaking from a starting gate. Pre-requisite: EQS 113 and permission of instructor. Lecture: 1 credit (15 contact hours). Laboratory: 2 credits (90 contact hours). Components: Lecture/Laboratory Attributes: Technical

EQS 213(2) Course ID: 005504
Instructor Consent Required
Racehorse Riding Techniques
Teaches advanced fundamentals of race riding such as breezing racehorses alone and in company, using proper riding techniques at each point in a race, breaking horses from the starting gate, and practicing race riding skills in training races. Pre-requisite: EQS 212 and consent of instructor. Lecture/Lab: 2 credits (60 contact hours). Components: Lecture Attributes: Technical

EQS 215(3) Course ID: 005505
Instructor Consent Required
Life Skills for Jockeys
Prepares student for life as a professional jockey. Includes integration of principles of nutrition into an eating plan that will maintain weight and health. Introduces concepts of practical financial management, insurance and retirement planning on a jockey’s salary. Ties together basic riding skills with interpersonal skills necessary for a successful life as a professional jockey. Pre-requisite: EQS 212 and permission of instructor. Co-requisite: EQS 212. Lecture: 3 credits (45 contact hours). Components: Lecture

EQS 223(4) Course ID: 005507
Training Principles and Practices
Examines techniques of training racehorses and compares effectiveness of different racehorse training methods including interval training. Quarter Horse training, steeplechase training and standard Thoroughbred training. Includes schooling, veterinary examinations of racehorses and alternatives to training methods. Requires students to develop a training plan for assigned North American Racing Academy (NARA) racehorses, supervise first year NARA student “employees,” participate in NARA training races and develop a plan to communicate with owners regarding the status of horses in training. Pre-requisite: EQS 123. Lecture/Lab: 4.0 credit (150 contact hours). Components: Lecture Attributes: Technical

EQS 240(3) Course ID: 007322
Equine Legal and Business Principles
Provides legal insights and practical tips for a successful horse business. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

EQS 299(1 - 9) Course ID: 005626
Equine Studies Cooperative Education
Provides a planned and evaluated work experience related to the student’s educational objective for which the student receives both financial remuneration and academic credit. While the maximum amount of credit granted for Equine cooperative Education experience varies by curriculum, the amount may never exceed nine hours in Associate in Applied Science Degree, diploma, or certificate program. Is available only to students enrolled in Associate in Applied Science in Equine Studies. Equine Studies Diploma and certificate program that list Equine Cooperative Education as an approved course. Pre-requisite: Consent of Instructor. Co-op: 1.0 - 9.0 credits (60 - 540 contact hours). Components: Co-Op Attributes: Technical

ESL English as a Second Language

ESL 10(0) Course ID: 006638
Introduction to Reading and Vocabulary
High-beginning level students will improve fundamental reading skills and expand vocabulary as they interact with level-appropriate texts. Students will be recommended to this course based on the ESL placement examination. 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 11(4) Course ID: 005308
Beginning Listening and Speaking
High-beginning level students will improve the ability to speak and understand English in simple every day and academic situations. The course will provide practice in pronunciation and basic oral communication functions. Beginning academic listening and speaking skills will also be covered. Students will be recommended to this course based on the ESL placement examination. Lecture: 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 12(4) Course ID: 005230
Intermediate Listening and Speaking
Low-intermediate level ESL students will improve comprehension and communication in English on a variety of everyday topics and in the academic setting. Students will develop and practice techniques for greater composure and confidence in oral expression. Practice will also be provided in pronunciation and intonation. Students will be recommended to this course based on the ESL placement examination or through completion of ESL 11. Lecture: 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 13(4) Course ID: 005307
Advanced Listening and Speaking
High-intermediate level ESL students will improve comprehension and communication in both social and academic settings. Instruction will include improving listening skills for academic note taking and small group discussion. Students will be expected to lead in share in class discussions based on reading and authentic listening materials. Students will also present orally in front of the class. Students will be recommended to this course based on the ESL placement examination or through completion of ESL 12. Lecture: 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 20(4) Course ID: 005216
Reading Improvement and Vocabulary Development for Low-Intermediate Non-Native English Speakers
Low-intermediate level students will review fundamental reading skills, learn and practice higher order reading skills, expand vocabulary and increase reading efficiency as they interact with level-appropriate texts. Pre-requisite: ESL 51. 3 credits (45 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 31(3) Course ID: 004037
Beginning Conversation for Non-Native English Speakers
Beginning level ESL students will learn basic conversation and practice basic sounds and intonation patterns. 3 credits (45 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 51(3) Course ID: 004043
Introduction to College Reading for Non-Native English Speakers
Beginning-level students will acquire or strengthen fundamental reading skills and expand vocabulary as they interact with level-appropriate texts. 3 credits (45 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 52(3) Course ID: 004044
Improved College Reading for Low-Intermediate Non-native English Speaker
Intermediate-level students will review fundamental reading skills, learn and practice higher order reading skills, expand vocabulary and increase reading efficiency as they interact with level-appropriate texts. Pre-requisite: ESL 51. 3 credits (45 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 53(3) Course ID: 004045
High-Intermediate Reading for Non-Native English Speakers
High-intermediate level ESL students will master fundamental reading skills. They will be introduced to a variety of genres, such as newspaper articles and essays, poems, short stories, charts, graphs and many other. In addition, this course will foster cultural awareness, understanding and interaction. Through the readings and activities introduced in the course students will engage in meaningful dialogue, and in the process, refine their English skills. Pre-requisite: ESL 52 or placement test. 3 credits (45 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 61(4) Course ID: 004046
Foundations of College Writing Me for Non-Native English Speakers
Beginning level ESL students are introduced to composition with an emphasis on clarity, organization, development and correctness. Comprehensive review of mechanics, grammar and spelling as these apply to their own writing is also addressed in this course. 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

ESL 62(4) Course ID: 004047
Foundations of College Writing II for Non-Native English Speakers
Low-intermediate level ESL students continue to enhance their composition skills by receiving instruction in the following: the writing process, organization, multi-paragraph writings, editing, and critical reading. Grammar instruction focuses on key structures and provides a springboard for expanding students’ abilities in all language skills. Pre-requisite: ESL 61. 4 credits (60 contact hours). Components: Lecture Attributes: English for Foreign Students

290
ESL 63(4) Course ID: 004048 Foundations of College Writing III for Non-Native English Speakers
ESL 63 is designed to help students prepare for ENG 101. High-intermediate level ESL students continue to work on the writing process, editorial improvement and critical reading. Grammar instruction includes advanced grammatical points, such as modals auxiliaries, gerunds, infinitives, and adjective and noun clauses. Pre-requisite: ESL 62 or placement test. 4 credits (60 contact hours)
Components: Lecture
Attributes: English for Foreign Students

ESL 71(3) Course ID: 007210 College Writing I for Non-Native Speakers
Introduces writing modes, including description, narration, process, and persuasion; presents methods of pre-writing; emphasizes development of thesis statements, topic support, and organization; describes basic concepts of verb tense and syntax. Credit is not given to students who have received credit for ESL 61. Pre-requisite: Placement According to KCTCS Assessment and Placement Policy. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture
Attributes: English for Foreign Students

ESL 81(3) Course ID: 007211 College Grammar I for Non-Native Speakers
Introduces basic verb tenses, formation of questions, modals, clauses, and parts of speech to non-native speakers of English. Incorporates instructional methods that are designed for non-native speakers of English. Credit is not given to students who have received credit for ESL 61. Pre-requisite: Placement According to KCTCS Assessment and Placement Policy. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture
Attributes: English for Foreign Students

ESP 101(3) Course ID: 005324 Introduction to Energy Systems
Introduces energy generating systems including solar, wind, bioenergy, geothermal, hydroelectric, hydrogen-based, petroleum-based, coal, and nuclear. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ESP 110(3) Course ID: 005491 Petroleum Based Fuels
Introduces the major petroleum based fuels including energy content, uses, availability, distribution methods, storage, and future impact of each fuel. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ESP 120(3) Course ID: 005492 Power Plant Chemistry
Introduces chemical processes relating to power plant operation, including basic chemical principles and specific chemistry of fuels, boiler and cooling water, steam, water treatment and environmental controls. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EST 150(4) Course ID: 004744 Introductory Ecology
Introduces basic concepts and current applications of ecology relevant to environmental issues. Emphasizes relationships between organisms and the environment; influencing factors affecting distribution and abundance; population structure and regulation; energy flow and nutrient cycling through the environment; and, development, structure, and response to distribution of organismal communities. Includes weekly laboratories to provide hands-on field experiences to reinforce concepts learned in lecture. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory, SN - Science
Course ID: 004745
Hydrological Geology
This course provides an introduction to geology and hydrology with an emphasis on understanding natural processes and the effects of human activities. Topics covered include: plate tectonics; formation and classification of rocks and minerals; the processes affecting the hydrologic cycle; soil formation and classification; subsurface geology and groundwater movement; stream formation and flow; floods; and human impacts to stream hydrology and morphology. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
Course ID: 004746
Environmental Sampling Laboratory
A laboratory course which provides the fundamentals in evaluating and designing sampling approaches for different situations and different media. The course will provide students with field experience in sampling soil, surface water, groundwater, and benthic invertebrates. Laboratory: 2 credits (60 contact hours). Pre-requisite: EST 150 or consent of instructor.
Components: Laboratory
Attributes: Technical
Course ID: 004747
Pollution of Aquatic Ecosystems
This course examines freshwater ecosystems and typical aquatic pollutants. Discussion topics focus on the sources, transport, fate, and effects of common pollutants such as domestic wastewater, metals, acidity, and pesticides. Methods to minimize or eliminate the sources and effects of pollutants are also explored. Pre-requisite or concurrent: EST 150, EST 160, CHE 105, and CHM 105 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 005054
Freshwater Invertebrates
An overview of the morphology, life history and ecology of freshwater invertebrates and their habitats as well as their importance and role in stream protection and restoration. Students will learn how to collect, preserve and identify freshwater invertebrates. Students will learn how to calculate and analyze biometrics used to infer stream quality. Pre-requisite: EST 150. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical
Course ID: 004748
Aquatic Chemistry Laboratory
This course provides focused study on the chemistry of water. The course will provide students with laboratory experience in analyzing surface, ground, and drinking waters for a variety of chemical constituents. Laboratory: 2 credits (60 contact hours). Pre-requisite: CHE 105, CHM 105, and Pre-requisite or concurrent EST 220.
Components: Laboratory
Attributes: Technical
Course ID: 004749
Sources and Effects of Air Pollution
This course provides an introduction to the study of ambient and indoor air pollution with an emphasis on sources, dispersion, and health and welfare effects of the major pollutants. Both regulatory and engineering controls of stationary and mobile sources are explored. A laboratory provides experience with sampling and analysis of air pollutants. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours). Pre-requisite: EST 150 and CIT 130, or equivalent, or consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical
Course ID: 004750
Solid and Hazardous Waste Management
This course examines methods of managing solid and hazardous waste, with an emphasis on pollution prevention. Topics covered include: relevant legislation, recycling, incineration, landfill operations, management of radioactive waste, remediation of waste sites and site worker health and safety. Pre-requisite: EST 150 and EST 160, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 004751
Environmental Analysis Laboratory
This course provides an introduction to the fundamentals of analyzing environmental media. The course will provide students with laboratory experience in analyzing soil, surface water, groundwater, air and microbial samples. Laboratory: 2 credits (60 contact hours). Pre-requisite: CHE 105, CHM 105 and Pre-requisite or concurrent EST 170.
Components: Laboratory
Attributes: Technical
Course ID: 004752
Environmental Law and Regulation
This course is structured to provide the student with a basic understanding of major current federal and state environmental legislation and regulation with an emphasis on those portions that affect the regulated community. The course will also include an examination of the role of common law and the branches of government in environmental protection. Pre-requisite or concurrent: EST 220, EST 240, and EST 250 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 004753
Environmental Trends Seminar
This course provides an examination of current approaches used to address a variety of environmental problems. Students will hear and critique presentations from professionals in the environmental field. Students will also research and give a presentation on a specific method to minimize or eliminate a current environmental problem. Pre-requisite or concurrent: EST 160, EST 150, COM 181 or COM 252, EST 170, EST 220, EST 260, and EST 250 or consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 004754
Instructor Consent Required
Selected Topics in Environmental Science Technology
A special project or experience in Environmental Science will be selected to enhance core material in the Environmental Science Technology program. It provides the student an opportunity for independent study or specialized instruction as approved by an instructor. This course may be repeated to a maximum of 6 hours. Pre-requisite: Consent of instructor. Lecture: 1-3 credits (15-45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 004321
Voice & Data Installer Level I
A comprehensive orientation to the telecommunication industry. Provides entry-level telecommunications cabling installers with the background, knowledge, and basic skills needed to function effectively on the job. Designed for those with little or no telecommunication installation experience. Pre-requisite: Basic physics/electricity courses are recommended but not required. Lecture: 4 credits (75 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
Course ID: 004322
Basic Electrical Theory: Telenetworking
Introduces the theory of electricity, magnetism, and the relationship of voltage, current, resistance, and power in electrical circuits as related to telecommunications. Designed to develop an understanding of alternating and direct current fundamentals. Students will apply formulas to analyze the operation of AC and DC circuits. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 004233
Basic Electrical Theory Lab
Allows the student to do hands-on applications of the theories and fundamentals learned in ETT 112. Co-requisite: ETT 112. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical
Course ID: 004234
Voice & Data Installer Level II
Designed for experienced telecommunications installers who wish to expand knowledge of the industry, learn new skills, and continue to advance professionally. The Installer Level 2 course requires two to five years of recent, verifiable telecommunications/low voltage cabling experience. In addition, several sections from the Installer Level 1 course will be covered comprehensively in this course. Pre-requisite: ETT 110 with a grade of C or greater. Lecture: 3 credit (45 contact hours); Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
Course ID: 004235
Fiber Optics Systems
Provides a technical level of understanding in the areas of networking connectivity, data communications concepts and communication protocols. Communications and networking concepts including hardware, software, and transmission media; access methods and protocols; and network configurations area addressed. Emphasis is on local area networks, and students will install a basic network. Pre-requisite: ETT 110 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Course ID: 000677
Instructor Consent Required
Experiential Education
A planned and evaluated learning work experience for which the student receives academic credits and may receive financial remuneration. The work experience may be related to the student’s major or may be exploratory in nature. One credit may be awarded for each 40 hours of work experience. The course may be repeated for a maximum of 6 credits and is available on a Pass/Fail basis only. This course is open only to transfer, nondegree seeking and undecided students. Lecture: Variable; Laboratory: Variable. Pre-requisite: Consent of instructor. Components: Laboratory, Lecture
Attributes: Technical
Course ID: 000662
Introduction to Family Science
Introduces the scientific study of the family, including important theoretical frameworks in family science, historical trends in marriage and family life, gender role theory, family life theory, parent-child, communication, sociology of family life, conflict, divorce, step-families and step-parenting, and family strengths. Analyzes contemporary family issues and requires informed, written positions on those issues. Pre-requisite: 3 hours of social or behavioral science or consent of instructor.
Components: Lecture
Attributes: SB - Social Behavior Science
Course ID: 000666
Human Sexuality: Development, Behavior, and Attitudes
Studies human sexuality, including the process of gender and attitudes, sexual response patterns, sexual behavior, and attitudes. Pre-requisite: 3 hours in social or behavioral science or consent of instructor.
Components: Lecture
Attributes: SB - Social Behavior Science
FLK 276(3) Course ID: 004779
Introduction to Folk Studies
An introduction to the study of folk traditions in different contexts, focusing on the concepts of folk group, cultural relativism, fieldwork, meaning and function, and the genres of folk narrative, folksong, folk custom and traditional material culture. Lecture: 3 credits (45 contact hours). Components: Lecture
Attributes: AH - Arts and Humanities, Other - Humanities

FLK 280(3) Course ID: 004780
Cultural Diversity in the United States
Focuses on understanding, interpretation, and appreciation of the multicultural nature of American society. Emphasizes on the varieties of cultural expression, customs and world view practiced by regional, ethnic, racial and sectarian cultures. Lecture: 3 credits (45 contact hours). Components: Lecture
Attributes: SB - Social Behavior Science, Other

FLM 112(4) Course ID: 016196
Filmmaking: Treatment to Short Screen Play
Provides project-based instruction on the basics of filmmaking. Familiarizes students with the process of creating a film treatment and proposal, and writing and revising a screenplay. Co-requisite: (FLM 122 AND FLM 132 AND FLM 140) OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours). Components: Lecture
Attributes: Technical

FLM 122(4) Course ID: 016197
Filmmaking: Storyboard through Production
Provides project-based instruction on basics of film production. Familiarizes students with directing, lighting, set designing, cinematography, and audio. Co-requisite: (FLM 112 AND FLM 132 AND FLM 140) OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours). Components: Lecture
Attributes: Technical

FLM 132(4) Course ID: 016198
Filmmaking: Editing through Distribution
Provides experience in graphic design, editing, music production, and promotion. Emphasizes preparation for entry-level positions in the industry. Co-requisite: (FLM 112 AND FLM 122 AND FLM 140) OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours). Components: Lecture
Attributes: Technical

FLM 140(2) Course ID: 016199
Filmmaking: Lab
Covers the lab portion of all topics included in FLM 112, FLM 122, and FLM 132. Consists of guest lecturers, group projects and hands on experience in film, ranging from pre-production and storyboards to post production. Co-requisite: (FLM 112 AND FLM 122 AND FLM 132) OR Instructor Consent. Laboratory: 2.0 credits (60 contact hours). Components: Laboratory
Attributes: Technical

FNS 180(3) Course ID: 016193
Film Boot Camp
Covers the organization and setup of a film production in the form of a film ‘boot camp.’ Includes lecture from experts in the field. Provides real world experience for first year students in the roles of Production Assistant, Assistant Director, Camera Assistant, and grip, and for second year students in the roles of Cinematographer, Director of Photography, Producer, and Director. Focuses on completion of a short film production. Lecture: 1.0 credits (15 contact hours) Lab: 2.0 credits (60 contact hours)
Components: Components: Lecture
Attributes: Technical

FNS 210(3)
Screenwriting
Introduces the fundamentals of screenwriting including specific description, character development, plot twists, turn-arounds, three-act structure and revisions. Reviews writing for camera. Demonstrates the use of proper formatting and the connection between the screenplay, the director and the production team. Connects students to active screenwriters through collaboration and networking. Pre-requisite for work with the Writers Guild and other professional organizations. Note: It is recommended that the student complete ENG 101 prior to taking this course. Pre-requisite: (FLM 112 AND FLM 122 AND FLM 132 AND FLM 140) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Components: Lecture
Attributes: Technical

FNS 293
Course Descriptions
## FNS 240(4)  
**Course ID:** 006556  
**Restorative Arts**  
Emphasizes restorative arts as applied to funeral services, including anatomical modeling, and expression. Emphasizes familiarization with tools, legal aspects, materials, and techniques. Pre-requisite: Admission to the Funeral Service Program and BIO 135. Lecture: 3.0 credits (45 contact hours) Lab: 1.0 credit (45 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

## FNS 250(4)  
**Course ID:** 006597  
**Embalming**  
Emphasizes procedures, requirements, equipment, and materials involved in the embalming process. Pre-requisite: Admission to the Funeral Service Program and FNS 250. Lecture: 3.0 credits (45 contact hours) Lab: 1.0 credit (45 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical

## FNS 255(1)  
**Course ID:** 006598  
**Embalming Practicum**  
Provides practical experience in embalming and funeral directing in a mortuary or funeral home environment under the supervision of a licensed embalmer and/or funeral director. Pre-requisite: Admission to the Funeral Service Program and FNS 250. Practicum: 1.0 credit (50 contact hours).  
**Components:** Practicum  
**Attributes:** Technical

## FNS 275(2)  
**Course ID:** 006599  
**Funeral Service Projects**  
Provides comprehensive review of entire Funeral Service curriculum in preparation for the National Board Examination and eligibility for all state and national licensure requirements. Addresses current events, skills, knowledge and/or attitudes and behaviors pertinent to the occupation and relevant to the professional development of the student. Pre-requisite: Admission to the Funeral Service Program. Lecture: 2.0 credits (30 contact hours).  
**Components:** Lecture  
**Attributes:** Technical

## FPX Fluid Power  
### FPX 100(3)  
**Course ID:** 001464  
**Fluid Power**  
Includes fluid power theory, component identification and application, schematic reading, and basic calculations related to pneumatic and hydraulic systems and their operations. Co-requisite: FPX 101 or Consent. Lecture: 3 credits (45 contact hours).  
**Components:** Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### FPX 101(2)  
**Course ID:** 001465  
**Fluid Power Lab**  
Provides practical experiences in the study of fluid power theory, hydraulics and pneumatics component identification, schematic reading, and basic calculations related to hydraulic and pneumatic systems and their operations. Co-requisite: FPX 100 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).  
**Components:** Laboratory  
**Same As Offering:** FPX 101  
**Attributes:** Course Also Offered in Modules, Technical

### FPX 100(0.3)  
**Course ID:** 005625  
**Introduction to Fluid Power**  
Introduces the basic concepts of fluid power and provides an opportunity to discuss the application of those concepts in the development of hydraulic and pneumatic systems. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 101 or Consent. Lecture: 0.3 credit (4.5 contact hours).  
**Components:** Lecture

### FPX 1002(0.3)  
**Course ID:** 005674  
**Introduction to Hydraulic System Maintenance**  
Familiarizes the student with hydraulic fluids, reservoirs, and filters. Covers the methodologies required when servicing a typical hydraulic system. Includes a general discussion on the safe working practices required with fluid power systems. Pre-requisite: [FPX 1001 and FPX 1011] with a grade of C or better) or Consent. Co-requisite: FPX 1012 or Consent. Lecture: 0.3 credit (4.5 contact hours).  
**Components:** Lecture

### FPX 1003(0.4)  
**Course ID:** 005675  
**Introduction to Pneumatic System Maintenance**  
Introduces pneumatic system maintenance. Covers the skills required to service modern pneumatic and air preparation systems. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1013 or Consent. Lecture: 0.4 credit (6.0 contact hours).  
**Components:** Lecture

### FPX 1004(1)  
**Course ID:** 006542  
**Hydraulic System Components and Applications**  
Introduces the fundamental principles of hydraulic component, system design, and operation. Covers higher level schematic layout and design as well as the specifics involved with the actual component selection. Provides an opportunity to design and build actual hydraulic circuits and then troubleshoot any faults that may be present in their design or construction. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1014 or Consent. Lecture: 1 credit (15 contact hours).  
**Components:** Lecture

### FPX 1005(1)  
**Course ID:** 006543  
**Pneumatic Systems and Components**  
Introduces the fundamental principles of pneumatic components and operation. Covers higher level schematic layout and design as well as the specifics involved with the actual component selection. Provides the opportunity to design and build actual pneumatic circuits and then troubleshoot any faults that may be present in their design or construction. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1015 or Consent. Lecture: 1 credit (15 contact hours).  
**Components:** Lecture

### FPX 1011(0.3)  
**Course ID:** 005676  
**Introduction to Fluid Power Lab**  
Introduces the basic concepts of fluid power and discusses the application of those concepts in the development of hydraulic and pneumatic systems. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1001 or Consent. Lab: 0.3 credits (9 contact hours).  
**Components:** Laboratory  
**Fluid Power**

### FPX 1012(0.3)  
**Course ID:** 005677  
**Introduction to Hydraulic System Maintenance Lab**  
Introduces pneumatic system maintenance. Familiarizes students with hydraulic fluids, reservoirs, and filters. Covers the methodologies required when servicing a typical hydraulic system. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1002 or Consent. Lab: 0.3 credit (9 contact hours).  
**Components:** Laboratory  
**Fluid Power**

### FPX 1013(0.3)  
**Course ID:** 005678  
**Introduction to Pneumatic System Maintenance Lab**  
Introduces pneumatic system maintenance. Covers the skills required to service modern pneumatic and air preparation systems. Includes a general discussion of the safe working practices required with fluid power systems. Co-requisite: FPX 1003 or Consent. Lab: 0.3 credit (9 contact hours).  
**Components:** Laboratory

### FPX 1014(0.55)  
**Course ID:** 006544  
**Hydraulic System Components and Applications Lab**  
Introduces fundamental principles of hydraulic component, system design, and operation. Covers higher level schematic layout and design as well as the specifics involved with the actual component selection. Provides an opportunity to design and build actual hydraulic circuits and then troubleshoot any faults that may be present in their design or construction. Includes a general discussion on the safe working practices required with fluid power systems. Co-requisite: FPX 1004 or Consent. Lab: 0.55 credits (8.25 contact hours).  
**Components:** Laboratory

## FRE French Language and Literature  
### FRE 101(4)  
**Course ID:** 000866  
**Elementary French I**  
Introduces basic modes of communication in French. Stresses speaking, listening, reading and writing as target skills. Emphasizes everyday language and presents an overview of the cultures of various Francophone countries. Lecture: 4 credits (60 contact hours)  
**Components:** Lecture  
**Attributes:** Foreign Language, Cultural Studies

### FRE 102(4)  
**Course ID:** 000754  
**Elementary French II**  
Continues the study of basic French through grammar, reading, and oral practice. Stresses speaking, listening, reading and writing as target skills. Emphasizes everyday language and exploring the cultures of various Francophone countries. Pre-requisite: FRE 101. Lecture 4 credits (60 contact hours)  
**Components:** Lecture  
**Attributes:** Foreign Language, Cultural Studies

### FRE 201(3)  
**Course ID:** 000874  
**Intermediate French I**  
Focuses on developing listening, speaking, reading, and writing skills in French at the intermediate level with an emphasis on developing cultural competency. Pre-requisite: FRE 102 or two years of high school French and placement test. Lecture: 3 credits (45 contact hours)  
**Components:** Lecture  
**Attributes:** Foreign Language, Cultural Studies

### FRE 202(3)  
**Course ID:** 000811  
**Intermediate French II**  
Continues FRE 201 with a focus on developing listening, speaking, reading, and writing skills in French at the intermediate level with an emphasis on developing cultural competency. Pre-requisite: FRE 201 or three years of high school French and placement test. Lecture: 3 credits (45 contact hours)  
**Components:** Lecture  
**Attributes:** Foreign Language, Cultural Studies

## FRS Fire/Rescue Science  
### FRS 101(3)  
**Course ID:** 001466  
**Introduction to Fire Service**  
This course includes fire department organization, fire behavior, firefighter safety, personal protective equipment, portable fire extinguishers, fire hose, appliance and streams. Lecture: 3 credits (45 contact hours)  
**Components:** Lecture  
**Attributes:** Course Also Offered in Modules, Technical

### FRS 102(3)  
**Course ID:** 001467  
**Firefighters Basic Skills I**  
Includes ropes, ladders, aircraft rescue, forcible entry, first aid, bloodborne pathogens, emergency disaster planning, and CPR. Pre-requisite: FRS 101 or Consent of Instructor. Lecture: 3 credits (45 contact hours)  
**Components:** Lecture  
**Attributes:** Course Also Offered in Modules, Technical
Course Descriptions

FRS 103(3) Course ID: 001468
Firefighters Basic Skills II
Includes building construction, wildland fire behavior, fire control, and ventilation. Pre-requisite: FRS 102 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 104(3) Course ID: 001469
Firefighters Intermediate Skills I
Includes water supply, foam fire streams, fire alarms and communications, hazardous materials awareness, hazardous materials operations, sprinklers, and salvage and overhaul. Pre-requisite: FRS 103 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

FRS 105(3) Course ID: 001470
Firefighters Intermediate Skills II
Includes fire department organization, fire behavior, personal protective equipment, fire hose, appliances and streams, ropes, forcible entry. Pre-requisite: FRS 103 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 201(3) Course ID: 001471
Firefighters Advanced Skills I
Includes firefighting safety, rescue, ventilation ladders, fire control, and emergency disaster planning. Pre-requisite: FRS 103 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 202(3) Course ID: 001472
Firefighters Advanced Skills II
Includes portable fire extinguishers, water supply, pump operations, foam fire streams, salvage, fire prevention, public education, and fire cause determination. Pre-requisite: FRS 104 or Consent of Instructor. Lecture: 3 credit hours (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 203(3) Course ID: 001473
Firefighters Advanced Skills III
Includes pump operations II, drivers training, overhaul, fire alarms and communications, sprinklers, and practicum. Pre-requisite: FRS 202 or Consent of Instructor. Lecture: 3 credits (90 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 204(3) Course ID: 001474
EMT First Responder
EMT First Responder includes first responder (EMS).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 205(5) Course ID: 001475
Fire Officer I
Includes incident safety officer, haz-mat tech., fire prevention, public education and fire cause determination II. Pre-requisite: FRS 202 or Consent of Instructor. Lecture: 5 credits (75 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 206(8) Course ID: 001476
Fire Officer II
Includes EMT, managing company tactical operations, decision making, and instructional techniques for company officers. Pre-requisite: FRS 203 or Consent of Instructor. Lecture: 8 credit hours (180 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 207(6) Course ID: 001477
Fire Officer III
Includes company officer, incident command system (ICS), leadership strategies for company success, and fire/arson detection. Pre-requisite: FRS 203 or Consent of Instructor. Lecture: 6 credits (90 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 1011(0.7) Course ID: 003890
Fire Department Organization I
Includes an overview of fire department organization, the role of department members, the mission of the department, standard operating procedures, rules and regulations, components of management, introduction to the Incident Command System and the roles of other agencies. Lecture: 0.7 credits (10 contact hours).
Components: Lecture
FRS 1012(0.3) Course ID: 003891
Fire Behavior I
Explores the aspects of the behavior of fire in its various forms. Covers the classification of fuel, products of combustion, and safety issues related to life hazards. Explains the three physical states of matter in which fuels are found. Laboratory: 0.3 credits (4 contact hours).
Components: Lecture
FRS 1013(0.4) Course ID: 003892
Firefighter Safety
Introduces the concept of safety in all phases of fire department operations. Covers station safety in normal day to day fire department operations as well as emergency response. Lecture: 0.4 credits (6 contact hours).
Components: Lecture
FRS 1014(0.8) Course ID: 003893
Personal Protective Equipment I
Addresses the nomenclature, use, maintenance, and documentation relative to the personal protective equipment including protective clothing and self-contained breathing apparatus. Pre-requisite: (FRS 1012 and FRS 1013) or consent of instructor.
Components: Laboratory, Lecture
FRS 1015(0.2) Course ID: 003894
Portable Fire Extinguishers I
Covers types, classification and use of fire extinguishers including the definitions utilized in rating each type and the selection of a given extinguisher in attacking a particular class of fire. Laboratory: 0.2 credits (3 contact hours).
Components: Laboratory, Lecture
FRS 1016(0.6) Course ID: 003895
Fire Hose, Appliances and Streams I
Introduces the student to the types, uses and operations of fire hose, appliances and streams used in the fire service. Pre-requisite: FRS 1014 or Consent of Instructor Laboratory: 0.6 credits (10 contact hours)
Components: Laboratory, Lecture
FRS 1021(0.2) Course ID: 003896
Ropes I
Familiarizes the student with the use and maintenance of rope and the various ties useful to hoisting equipment, securing objects and rescue. Pre-requisite: (FRS 101 or FRS 1014) or Consent of Instructor. Laboratory: 0.2 credits (3 contact hours).
Components: Laboratory, Lecture
FRS 1022(0.6) Course ID: 003897
Ladders I
Covers basic information pertaining to the use of ladders in the fire service including ladder terminology, types of ladders and ladder carries and raises. Pre-requisite: FRS 1021 or Consent of Instructor Laboratory: 0.6 credits (9 contact hours)
Components: Laboratory, Lecture
FRS 1023(0.4) Course ID: 003898
Aircraft Rescue
Provides the basic information needed by firefighters to effectively perform the various tasks involved in aircraft fire fighting and rescue. The information is consistent with the recommendations in NFPA 1003 Standard for Professional Qualifications for Airport Fire Fighters, 1987 Edition. Lecture: 0.4 credits (6 contact hours).
Components: Lecture
FRS 1024(0.4) Course ID: 003899
Rescue I
Addresses the procedures of search for location, removal of entrapped and/or injured persons under fire conditions, and identifies the equipment required by the National Fire Protection Association used to affect the procedures. Pre-requisite: FRS 1022 or Consent of Instructor Laboratory: 0.4 credits (6 contact hours)
Components: Laboratory, Lecture
FRS 1025(0.3) Course ID: 003900
First Aid
Addresses the knowledge and skills for administering first aid including the assessment and treatment of patients sustaining injury or sudden illness until a higher level of trained emergency care technician arrives. Laboratory: 0.3 credits (4 contact hours)
Components: Laboratory, Lecture
FRS 1026(0.3) Course ID: 003901
Bloodborne Pathogens
Provides bloodborne pathogens education for emergency responders, health professionals, and others who are subject to exposure in the 1) transmission; 2) prevention and control; 3) treatment; 4) legal issues; and 5) attitudes and behavior regarding human infections, and covers requirements of OSHA 1910.1030. Lecture: 0.3 credits (4 contact hours)
Components: Lecture
FRS 1027(0.1) Course ID: 003902
Emergency Disaster Planning I
Introduces the concept of emergency management and the importance of an incident command system. Identifies the likelihood of fire department involvement as an all-hazard response agency. Lecture: 0.1 credits (2 contact hours)
Components: Lecture
FRS 1028(0.2) Course ID: 003903
Forcible Entry I
Addresses materials and construction features of doors, windows, walls, door and window locking devices. Teaches forced entry through at least three (3) different types each of doors, windows, and walls. Discusses maintenance of tools and equipment used for forced entry and safety factors. Pre-requisite: (FRS 101 or FRS 1014) or Consent of Instructor Laboratory: 0.2 credits (3 contact hours)
Components: Laboratory, Lecture
FRS 1029(0.5) Course ID: 003904
CPR
Provides the knowledge and skills for administering care for respiratory or cardiac arrest including airway, breathing, and circulation assessment and the procedures to eliminate blockage of the airway, provide breathing assistance, and cardiac compressions. Lecture: 0.5 credits (8 contact hours)
Components: Lecture
FRS 1031(0.7) Course ID: 003905
Building Construction
Improves the ability of students to assess building stability and resistance to fire. Teaches to protect the lives of firefighters and community residents, while improving operational effectiveness through more complete and accurate ‘size-ups.’ Upgrades the skills of our nation’s fire service. Lecture: 0.7 credits (10 contact hours)
Components: Lecture
FRS 1032(0.5) Course ID: 003956
Introduction to Wildland Fire Behavior
Familiarizes firefighters with wildland fires. Includes familiarization with the fire triangle, how environmental factors influence wildland fires, and the ability to recognize situations that indicate problem or extreme wildland fire behavior. Lecture: 0.5 credits (8 contact hours)
Components: Lecture
FRS 1033(1.4) Course ID: 003906
Fire Control I
Teaches the student to control or extinguish stacks of Class A materials, combustible liquids, vehicle fires, exterior dumpster/trash bin, and Class A combustible materials within a structure. Pre-requisite: (FRS 1011 and FRS 1016 and FRS 1028) or Consent of Instructor. Co-requisite: FRS 1034 or Consent of Instructor Laboratory: 1.4 credits (21 contact hours)
Components: Laboratory, Lecture

FRS 1034(0.4) Course ID: 003907
Ventilation I
Involves the study of the principles of ventilation, including the methods of removing heated air, smoke and gases from a structure. Includes a review of roof structures and their effects on ventilation procedures. Pre-requisite: FRS 1022 or consent of instructor Co-requisite: FRS 1033 or Consent of Instructor Laboratory: 0.4 credits (6 contact hours)
Components: Laboratory, Lecture

FRS 1041(0.4) Course ID: 003941
Water Supply I
Provides the firefighter with a general understanding of water systems. Broadens the base of understanding of a water supply system and how it works. Covers hydrant systems as well as static water sources for determining their value as a firefighter water supply source. Pre-requisite: (FRS 1012 and FRS 1016) or Consent of Instructor Laboratory: 0.4 credits (6 contact hours)
Components: Laboratory, Lecture

FRS 1042(0.2) Course ID: 003942
Foam Fire Streams I
Instructs the student in foam performance, extinguishing properties and types of foam used in the fire service today. Pre-requisite: (FRS 1012 and FRS 2023) or Consent of Instructor Laboratory: 0.2 credits (3 contact hours)
Components: Lecture

FRS 1043(0.3) Course ID: 003943
Salvage I
Reviews salvage methods and operating procedures that further reduce fire, water, and smoke damage during and after fires. Pre-requisite: FRS 1033 or Consent of Instructor Lecture: 0.3 credits (4 contact hours)
Components: Lecture

FRS 1044(0.1) Course ID: 003944
Overhaul I
Provides the firefighter with a general understanding of the purpose and scope of overhaul, including recognition of hidden fires and methods used to separate, remove, and relocate charred materials. Pre-requisite: (FRS 1028 and FRS 1034) or Consent of Instructor Lecture: 0.1 credits (2 contact hours)
Components: Lecture

FRS 1045(0.2) Course ID: 003945
Fire Alarms and Communications I
Covers basic information pertaining to fire alarms and communications including radio operations, alarm receiving equipment, and dispatching procedures. Lecture: 0.2 credits (3 contact hours)
Components: Lecture

FRS 1046(0.5) Course ID: 003946
Hazardous Materials Awareness
Introduces the student to the principles of recognizing hazardous materials presence, protecting themselves from hazardous materials and calling for training/personnel, and securing the area safely. Lecture: 0.5 credits (8 contact hours)
Components: Lecture

FRS 1047(1.1) Course ID: 003947
Hazardous Materials Operations
Involves training to meet Federal Occupational Safety and Health Administration (OSHA), local occupational health and safety regulations and, U.S. Environmental Protection (EPA) requirements. Pre-requisite: (FRS 1014 and FRS 1046) or Consent of Instructor. Lecture: 1.1 credits (16 contact hours)
Components: Lecture

FRS 1048(0.2) Course ID: 003948
Sprinklers I
Gives the firefighter a basic understanding of how sprinkler systems are designed and how they operate. Pre-requisite: FRS 1041 or Consent of Instructor. Lecture: 0.2 credits (3 contact hours)
Components: Lecture

FRS 1051(0.3) Course ID: 003908
Fire Department Organization II
Includes an overview of an advanced fire department member’s role within the organization and the member’s responsibilities relative to the transfer of command. Pre-requisite: FRS 1011 or Consent of Instructor Lecture: 0.3 credits (4 contact hours)
Components: Lecture

FRS 1052(0.4) Course ID: 003909
Fire Behavior II
Describes the chemistry and behavior of fire. Looks at finely divided fuel, flash point, ignition temperatures and heat sources. Pre-requisite: FRS 1012 or Consent of Instructor Lecture: 0.4 credits (6 contact hours)
Components: Lecture

FRS 1053(0.5) Course ID: 003910
Personal Protective Equipment II
Addresses the nomenclature, use, maintenance, and documentation relative to the personal protective equipment including protective clothing and self-contained breathing apparatus. Pre-requisite: FRS 1014 or Consent of Instructor Laboratory: 0.5 credits (8 contact hours)
Components: Laboratory, Lecture

FRS 1055(0.7) Course ID: 003912
Ropes II
Involves rope size, strength, type and length of rope to accomplish a firefighting or rescue task. Pre-requisite: FRS 1021 or Consent of Instructor Laboratory: 0.7 credits (10 contact hours)
Components: Laboratory, Lecture

FRS 1056(0.5) Course ID: 003913
Forcible Entry II
Identifies materials and construction features of doors, windows, walls, and door and window locking devices. Teaches forced entry through at least three different types of doors, windows, and walls. Discusses maintenance of tools and equipment used for forced entry and safety factors involved. Pre-requisite: FRS 1028 or Consent of Instructor Laboratory: 0.5 credits (7 contact hours)
Components: Laboratory, Lecture

FRS 2011(0.3) Course ID: 003914
Firefighter Safety II
Correlates federal, state, and local laws as they relate to firefighter health and safety. Discusses the firefighter’s role in department safety and includes safety procedures for hand and power tools. Pre-requisites: (FRS 1013 and FRS 1026 and FRS 1034) or Consent of Instructor Lecture: 0.3 credits (4 contact hours)
Components: Lecture

FRS 2012(0.7) Course ID: 003915
Ladders II
Covers information pertaining to the use of ladders in the fire service including construction materials, load capacities, and cleaning and inspection. Pre-requisite: FRS 1022 or Consent of Instructor Laboratory: 0.7 credits (11 contact hours)
Components: Laboratory, Lecture

FRS 2013(0.3) Course ID: 003916
Rescue II
Addresses the techniques and procedures to follow relative to specific rescues, the equipment required for each and their proper use and the extraction of trapped victims. Pre-requisite: FRS 1024 or Consent of Instructor Laboratory: 0.3 credits (4 contact hours)
Components: Laboratory, Lecture

FRS 2014(0.3) Course ID: 003917
Ventilation II
Includes an advanced level study in ventilating procedures. Reviews mechanical ventilation systems and their use in fire ground operations. Pre-requisite: FRS 1034 or Consent of Instructor Laboratory: 0.3 credits (4 contact hours)
Components: Lecture

FRS 2015(0.6) Course ID: 003918
Fire Control II
Provides an advanced course to teach the student to control or extinguish live fires involving combustible liquids of at least 100 sq. ft. using foam, fire in an elevated location, hidden fires inside walls and crawl spaces, fire involving energized electrical components and fire involving a flammable gas cylinder. Pre-requisite: FRS 1033 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

FRS 2016(0.8) Course ID: 003919
Emergency Disaster Planning II
Meets the needs of fire officers and crew leaders with responsibilities to manage the operations of one or more companies in structural firefighting operations. Includes preparation for response, decision-making, and tactical operations. Involves extensive use of simulation to apply concepts and develop skill. Pre-requisite: FRS 1027 or Consent of Instructor. Lecture: 0.8 credits (13 contact hours)
Components: Lecture

FRS 2021(0.1) Course ID: 003920
Portable Fire Extinguishers II
Covers types, classification and use of fire extinguishers including the definitions utilized in rating each type and the selection of a given extinguisher in attacking a particular class of fire. Pre-requisite: FRS 1015 or Consent of Instructor. Lecture: 0.1 credits (2 contact hours)
Components: Lecture

FRS 2022(0.8) Course ID: 003921
Water Supply II
Includes information pertaining to water supply including water distribution systems, hydrant operation and apparatus, equipment and appliances required to provide water for fire extinguishment. Pre-requisite: FRS 1041 or Consent of Instructor.
Components: Laboratory, Lecture: 0.8 credits (12 contact hours)

FRS 2023(1.1) Course ID: 003922
Pump Operations I
Includes the minimum requirements of professional competence of fire service pump operators. Pre-requisite: FRS 1041 or Consent of Instructor. Laboratory: 1.1 credits (17 contact hours)
Components: Laboratory, Lecture

FRS 2024(0.1) Course ID: 003923
Foam Streams II
Includes an advanced course designed to instruct the student in the proper use of foam, the equipment used to make foam, and the hydraulics used in creating foam. Pre-requisite: FRS 2023 or Consent of Instructor. Lecture: 0.1 credits (1 contact hour)
Components: Lecture

FRS 2025(0.1) Course ID: 003924
Salvage II
Covers, at an advanced level, salvage methods and operating procedures that further reduce fire, water, and smoke damage during and after fires. Pre-requisite: FRS 1043 or Consent of Instructor. Lecture: 0.1 credits (2 contact hours)
Components: Lecture

FRS 2026(0.8) Course ID: 003957
Fire Prevention, Public Education and Fire Cause Determination I
Covers basic information pertaining to the causes of fire and their prevention, fire inspections, and public fire education. Pre-requisite: FRS 1043 or Consent of Instructor. Lecture: 0.8 credits (12 contact hours)
Components: Lecture
FRS 2031(0.5) Course ID: 003925
Pump Operations II
Includes the minimum requirements of professional competence of fire service pump operators. Pre-requisite: FRS 2023 or Consent of Instructor. Lecture: 0.5 credits (8 contact hours).
Components: Lecture

FRS 2032(0.8) Course ID: 003926
Driver’s Training
Includes the minimum requirements of professional competence required for service as a fire apparatus driver. Pre-requisite: FRS 2011 and FRS 2013 and Valid Driver License.
Components: Laboratory, Lecture: 0.8 credits (12 contact hours)

FRS 2033(0.2) Course ID: 003927
Overhaul II
Includes information pertaining to overhaul including safety precautions, indicators of structural instability, the preservation of evidence and the procedures for restoration of the fire premises. Pre-requisite: FRS 1044 or Consent of Instructor. Lecture: 0.2 credits (3 contact hours).
Components: Lecture

FRS 2034(0.3) Course ID: 003928
Fire Alarms and Communications II
Discusses the policies and procedures concerning ordering and transmitting of multiple alarms and supervisory alarm equipment. Pre-requisite: FRS 1045 or Consent of Instructor. Lecture: 0.3 credits (5 contact hours).
Components: Lecture

FRS 2035(0.5) Course ID: 003929
Sprinklers II
Promotes increased knowledge of various types of sprinkler systems and the working of these systems. Pre-requisite: FRS 1048 or Consent of Instructor. Lecture: 0.5 credits (7 contact hours).
Components: Lecture

FRS 2036(0.7) Course ID: 003930
Practicum
Provides supervised on-the-job work experience related to the student’s educational objectives. Students participating in the practicum do not receive compensation. Pre-requisite: FRS 1049 and FRS 102 and FRS 103 and FRS 104 Practicum: 0.7 credits (55 contact hours).
Components: Practicum

FRS 2041(3) Course ID: 003931
First Responder (EMS)
Covers aspects of trauma care as outlined by the national standard created by federal guidelines and considered to be the responsibilities services with emergency medical response missions, consisting of classroom and laboratory instructions. Involves typical anatomy and physiology; patient assessment, care for respiratory and cardiac emergencies; control of bleeding, application of dressing and bandages, treatment for traumatic shock; care for fractures, dislocation, sprains and strains; medical emergencies; emergency childbirth; burns and heat emergencies; environmental emergencies; principles of vehicle rescue; transportation of patients and general operations of ambulance systems. Pre-requisite: Consent of Instructor. Lecture: 6 credits (150 contact hours).
Components: Lecture

FRS 2051(0.5) Course ID: 003932
Fire Prevention, Public Education and Fire Cause Determination II
Relates to prefer planning, fire incident reports, building fire safety surveys, school exit drills, home safety programs, common fire hazards, fire cause determination, protection and detection systems and identification of structural deficiencies that could cause fires. Pre-requisite: FRS 2026 or Consent of Instructor Lecture: 0.5 credits (8 contact hours).
Components: Lecture

FRS 2052(1.1) Course ID: 003958
Firefighter Survival & Rescue
This intensive training course was developed in response to the tragic deaths of many firefighters across the nation in the past several years. Many of those who perished did so because they could not get out of the fire building or area where they were working. We train our firefighters in confined space, hazardous materials, infectious disease control, and incident command but until now there was no training course that taught our firefighters how to save their own lives. The firefighter Survival and Rescue courses are designed to fill this void by reviewing conditions and situations which may pose a risk to firefighters and by teaching firefighters how to help themselves in emergency conditions. Pre-requisite: FRS 1024 or Consent of Instructor. Lecture: 1.1 credits (16 contact hours).
Components: Lecture

FRS 2053(3.4) Course ID: 003933
Hazardous Materials Technician
Provides the required training for Federal Occupational Safety and Health Administration (OSHA); Kentucky Occupations Health and Safety regulation and U.S. Environmental Protection Agency (EPA) requirements. Covers responding to releases or potential releases of hazardous materials for the purpose controlling the release and using specialized chemical-protective clothing and specialized control equipment. Pre-requisite: FRS 1047 or Consent of Instructor
Components: Laboratory, Lecture: 3.4 credits (52 contact hours)

FRS 2061(6) Course ID: 003934
Emergency Medical Technician (EMT)
Covers all knowledge aspects of trauma care as outlined by national standards, created by federal guidelines considered to be the responsibilities of ambulance operations. Covers all typical anatomy and physiology, patient assessment, care for respiratory and cardiac emergencies, control of bleeding, application of dressing and bandages; treatment for traumatic shock; care for fractures, dislocation, sprains and strains; medical emergencies; emergency childbirth; burns and heat emergencies; environmental emergencies; principles of vehicle rescue; transportation of patients and general operations of ambulance systems. Pre-requisite: Consent of Instructor. Lecture: 6 credits (150 contact hours)
FRS 2062(1) Course ID: 003925
Managing Company Operations: Decision Making
Meets the needs of fire officers and crew leaders with responsibilities to manage the operations of one or more companies in structural firefighting operations. Includes preparation for response, decision making, and tactical operations. Includes, as the foundation of the course, an extensive unit of simulation to provide application of concepts and the development of skills. Provides an effective approach to command decision making and organization. Focuses on a review of the command sequence and an overview of incident command for structural firefighting. Pre-requisite: Consent of Instructor. Lecture: 1 credit (15 hours).
Components: Lecture

FRS 2063(1) Course ID: 003936
Instructional Techniques for Company Officers
Designed for company officers and other fire or rescue service personnel with the responsibility for conducting periodic company level or small unit training. Introduces the participant to basic instructional concepts and techniques. Emphasizes teaching principles and techniques applicable to fire and rescue service training. Includes effective communication, teaching from lesson plans, methods of instruction with emphasis on skills training, and adult learning. Pre-requisite: (FRS 101 and FRS 102 and FRS 103 and FRS 104 and FRS 105 and FRS 201 and FRS 202 and FRS 203) or Consent of Instructor. Lecture: 1 credit (15 contact hours)
Components: Laboratory, Lecture

FRS 2071(3.5) Course ID: 003937
Company Officer
Involves information and activities needed to meet the minimum standards of Fire Service Company Officers in practicing competencies relative to administrative and incident resolution consistent with National fire Protection Association Code 1021. Pre-requisite: (FRS 101 and FRS 102 and FRS 103 and FRS 104 and FRS 105 and FRS 201 and FRS 202 and FRS 203) or Consent of Instructor. Lecture: 3.5 credits (52 contact hours).
Components: Lecture

FRS 2072(0.9) Course ID: 003938
Incident Command System (ICS)
Meets the needs of fire officers and managers with responsibilities to use, deploy, implement and/or function within a departmental Emergency Management Systems. Addresses the need for incident management systems, an overview of the structure and expandability of ICS, an understanding of the command skills needed by departmental officers to effectively use ICS, guidelines and scenario practice on how to apply ICS, and guidelines and resource information for setting up and implementing a departmental ICS. Lecture: 0.9 credits (14 contact hours).
Components: Lecture

FRS 2073(0.8) Course ID: 003939
Leadership I: Strategies for Company Success
Designed to meet the needs of the company officer. Provides the participant with basic skills and tools needed to effectively lead as a fire service environment. Addresses techniques and approaches to problem-solving, identifying and assessing the needs of the company officer subordinates, running meetings effectively in the fire service environment, and decision-making for the company officer. Pre-requisite: (FRS 101 and FRS 102 and FRS 103 and FRS 104 and FRS 105 and FRS 201 and FRS 202 and FRS 203) or Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

FRS 2074(0.8) Course ID: 003940
Fire/Arson Detection (Arson I)
Designed for fire officers and firefighters to improve their skills in determining fire causes at the fire scene. Begins with the study of the motivation of the arsonist and progresses through the prosecution of the crime of arson. Includes the goal of providing appropriate training to the firefighter and fire officer so as to make an impact in reducing arson throughout the nation. Pre-requisite: (FRS 101 and FRS 102 and FRS 103 and FRS 104 and FRS 105 and FRS 201 and FRS 202 and FRS 203) or Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

FRT Fire/Rescue Training
FRT 93(0.1 - 6) Course ID: 005311
Selected Topics in Homeland Security
Examines selected topics in Homeland Security offered in response to needs of citizens and emergency response personnel. Outlines and course competencies will be located in the Academic Dean’s office. Lecture: 0.1 - 6.0 contact hours.
Components: Lecture

FRT 95(0.2 - 6) Course ID: 004167
Special Topics in Industrial Fire Protection
This course includes subjects related to the provision of fire protection in the industrial setting, to include but not limited to: fire extinguisher operations, fire alarm systems, fire protection systems, incipient fire brigade operations, and structural fire brigade operations.
Components: Lecture Attributes: Technical

FRT 96(0.2 - 6) Course ID: 004166
Special Topics in Hazardous Materials
This course includes subjects related to the response to hazardous materials incidents, to include but not limited to: hazardous materials awareness, hazardous materials operations, hazardous materials technician, and hazardous materials continuing education.
Components: Lecture Attributes: Technical

FRT 97(0.2 - 6) Course ID: 004165
Special Topics in Emergency Medical Services
This course includes subjects related to the provision of emergency medical services, to include but not limited to: CPR, first aid, first responder medical, emergency medical technician (EMT), and EMT continuing education.
Components: Lecture Attributes: Technical
FSI Forensic Science
FYE Achieving Academic Success
FYE 100(1) Strategies for College Success
FYE 105(3) Achieving Academic Success
FYE 1001(0.4) Introduction to the College Campus
FYE 1002(0.3) Self-Management Skills
FYE 1003(0.3) Academic and Career Choices
FYE 1051(1) Orientation to College
FYE 1052(1) Education and Career Planning
FYE 1053(1) Academic, Financial, and Personal Skills
FYE 1054(1) Achieving Academic Success
FYE 1057(1) Introduction to Forensic Science with Laboratory
FYE 1058(1) Special Topics in Forensic Analysis
FYE 1059(1) Special Topics in Firefighting
FYE 1060(1) Components of Laboratory
FYE 1061(1) Special Topics in Rescue
FYE 1062(1) Components of Lecture
FYE 1063(1) Special Topics in Firefighting
FYE 1064(1) Components of Laboratory
FTE 98(0.2 - 6) Special Topics in Rescue
FTE 99(0.2 - 6) Special Topics in Firefighting
FSI 110(3) Introduction to Forensic Science with Laboratory
FSI Forensic Science
GEN General College Studies
GEN 91(3) Foundations of Information Literacy
GEN 100(1) Introduction to College
GEN 101(3) Instructor Consent Required Principles of Peer Mentoring
GEN 102(3) Foundations of Learning
GEN 103(1) Instructor Consent Required Principles of Peer Mentoring
GEN 104(2) Instructor Consent Required Applied Principles of Peer Mentoring
GEN 105(1) Orientation to College
GEN 106(1) Components of Lecture
GEN 107(1) Components of Lecture
GEN 108(1) Components of Lecture
GEN 109(1) Components of Lecture
GEN 110(1) Components of Lecture
GEN 111(1) Components of Lecture
GEN 112(1) The Exemplary Tutor
GEN 113(3 - 3) The Exemplary Reading Tutor
GEN 114(3) Components of Lecture
GEN 115(3) Applied Meta-Thinking
GEN 116(3) Introduction to Information Resources
GEN 117(3) Basic Library Research and Resources
GEN 118(3) The Exemplary Tutor
GEN 119(3) The Exemplary Reading Tutor
GEN 120(3) Service Learning
GEN 121(1) The Exemplary Tutor
GEN 122(1) Components of Lecture
GEN 123(1 - 3) The Exemplary Reading Tutor
GEN 124(1) Components of Lecture
GEN 125(3) Components of Lecture
GEN 126(3) Applied Meta-Thinking
GEN 127(3) Introduction to Information Resources
GEN 128(3) Basic Library Research and Resources
GEN 129(3) The Exemplary Tutor
GEN 130(3) The Exemplary Reading Tutor
GEN 131(1) Components of Lecture
GEN 132(1) Components of Lecture
GEN 133(1) Components of Lecture
GEN 134(1) Components of Lecture
GEN 135(1) Components of Lecture
GEN 136(1) Components of Lecture
GEN 137(1) Components of Lecture
GEN 138(1) Components of Lecture
GEN 139(1) Components of Lecture
GEN 140(3) Instructor Consent Required Development of Leadership
GEN 141(3) The Exemplary Tutor
GEN 142(1) The Exemplary Tutor
GEN 143(3) The Exemplary Reading Tutor
GEN 144(3) The Exemplary Reading Tutor
GEN 145(3) Basic Library Research and Resources
GEN 146(3) The Exemplary Tutor
GEN 147(3) The Exemplary Reading Tutor
GEN 148(3) Basic Library Research and Resources
GEN 149(3) The Exemplary Tutor
GEN 150(3) The Exemplary Reading Tutor
GEN 151(3) Basic Library Research and Resources
GEN 150(1) Course ID: 000589
Basic Computer Skills
Provides an introduction to commonly-used computing functions, emphasizing information processing, hands-on experience, and software packages. (This course does not meet the KCTCS computer literacy requirement.). Components: Laboratory, Lecture 1 credit (15 contact hours)
Attributes: Computer Literacy, Other

GEN 175(3) Course ID: 006594
Career and Life Skills Development
Investigates the importance of appropriate social behavior and interaction in the workplace. Presents skills necessary for job search, self-management, and life and work transitions for adapting to changing demands and expectations. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other, Course Also Offered in Modules

GEN 225(3) Course ID: 006601
Lifelong Learning Applications
Develops and identifies overall life skills in complex systems as a whole to interact and communicate with others to produce successful outcomes. Pre-requisite: GE 175 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: SB - Social Behavior Science, Course Also Offered in Modules

GEN 240(3) Course ID: 015506
Leadership Applications
Connects the principles of transformational leadership with personal behavior by building a base of leadership theory for a practical philosophy. Engages students in directed projects and case studies to put theory into practice. Provides instruction directly related to integrity, planning, alignment, decision-making, fostering understanding, change-management, relationships, internal locus of control, trust, respect, image-projection, influence, and building a following. Pre-requisite: GEN 140 or consent of instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Other

GEN 276(1) Course ID: 004489
Employment and Professional Skills
Presents the process of effective career planning and develops the skills necessary for obtaining and maintaining employment. Lecture: 1 credit (15 contact hours)
Components: Lecture
Attributes: Technical

GEN 1021(1) Course ID: 007078
College Basics & Learning Styles
Presents an overview to campus and online resources, policies, and procedures including diversity. Presents strategies for identifying personal learning, self-management, and career exploration tools. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1022(1) Course ID: 007079
Critical Reading and Thinking
Presents strategies and tools to promote critical reading and thinking. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1023(1) Course ID: 007080
Classroom Skills and Test-taking
Presents strategies and tools to promote classroom and test-taking skills. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1251(1) Course ID: 006591
Transmission Connections
Introduces various forms of communication. Provides skills for understanding verbal and nonverbal communication and reflection on experiences. Lecture: 1.0 credits (15 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 1252(1) Course ID: 006592
Learning Skills Application
Provides skills for thinking critically and creatively, connecting prior learning, using reciprocal relationships, and interpreting information. Lecture: 1.0 credits (15 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 1253(1) Course ID: 006593
Effective Decision Making
Provides skills to analyze and evaluate judgments, ethical considerations, and new and diverse perspectives and points of view. Lecture: 1.0 credits (15 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 1401(1) Course ID: 015781
Philosophy and Self-Awareness
Presents concepts of leadership and group dynamics, especially focusing on each student’s individual leadership philosophy. Provides opportunities for all students to develop individual potential and skills related to servant leadership and ethics. Pre-requisite: Consent of instructor. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1402(1) Course ID: 015782
Exploration and Analysis
Presents concepts of leadership and group dynamics, especially focusing on each student’s individual leadership philosophy. Provides opportunities for all students to develop individual potential and skills related to visioning, trust and team-building, goal-setting, and decision-making. Pre-requisite: GEN 1401. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1403(1) Course ID: 015783
Summary and Reflection
Presents concepts of leadership and group dynamics, especially focusing on each student’s individual leadership philosophy. Provides opportunities for all students to develop individual potential and skills related to conflict resolution, management of change, empowerment of others and time management. Includes leadership course summary and reflection. Pre-requisite: GEN 1402. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1751(0.4) Course ID: 006595
Career Planning Using Technology
Explores career search and selection enhanced by the development of an electronic portfolio. Lecture: 0.4 credits (6.0 contact hours)
Components: Lecture

GEN 1752(0.4) Course ID: 006596
Exploring Employment Strategies
Explores elements of the pre-employment process. Lecture: 0.4 credits (6.0 contact hours)
Components: Lecture

GEN 1753(0.4) Course ID: 006597
Business Basics
Presents basic business, math, and communication skills for the workplace. Lecture: 0.4 credits (6.0 contact hours)
Components: Lecture

GEN 1754(0.4) Course ID: 006598
Customer Service
Presents basic approaches for effective customer service skills. Lecture: 0.4 credits (6.0 contact hours)
Components: Lecture

GEN 1755(1) Course ID: 006599
Workplace Transitions
Presents employment and life skills including social interaction through workplace diversity, problem solving, working in teams, business procedures, and performance processes. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

GEN 1756(0.4) Course ID: 006600
Workplace Skills
Explains the importance of lifelong learning, flexibility, adaptability, and positive employment behaviors. Lecture: 0.4 credits (6.0 contact hours)
Components: Lecture

GEN 2251(0.4) Course ID: 006602
Acquiring Digital Skills
Access, manage, integrate, evaluate, and create digital technology and information. Pre-requisite: GE 175 or Consent of Instructor. Lecture: 0.4 credits (6 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2252(0.6) Course ID: 006603
Project / Time Management Basics
Identify project and time management strategies to set appropriate goals and timelines. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2253(0.3) Course ID: 006604
Leadership Overview
Provides an overview of leadership responsibility and the ethical considerations that impact decisions. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2254(0.4) Course ID: 006605
Global Awareness
Provides skills for reasoning, open dialogue with diverse cultures, and complex systems. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.4 credits (6 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2255(0.3) Course ID: 006606
Financial Literacy
Provides skills for managing financial resources and making appropriate economic choices. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2256(0.3) Course ID: 006607
Civic Engagement
Develops students’ community service by enabling knowledge about civic engagement and government processes. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2257(0.4) Course ID: 006608
Social Respect and Collaboration
Provides knowledge about cultural differences, value of diverse teams, and social respect. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.4 credits (6 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 2258(0.3) Course ID: 006609
Self-directed Learning
Identifies skills and strategies for being a self-learner through life and presents the importance of lifelong learning. Pre-requisite: GE 2251 or Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules
GEO 130(3) Course ID: 000351
Earth’s Physical Environment
A course exploring the fundamental characteristics of earth’s physical environment. Emphasis is placed on identifying interrelationships between atmospheric processes involving energy, pressure, and moisture, weather and climate, and terrestrial processes of vegetative biomes, soils, and landscape formation and change. Fulfills elementary certification requirements in education, and USP cross-disciplinary requirement. 3 credits (45 contact hours)
Components: Lecture
Attributes: SN - Science

GEO 152(3) Course ID: 000398
Regional Geography of the World
Introduces regional geography with a focus on the world’s physical and human landscapes. Emphasizes connections between regions and how each region affects and is affected by global issues such as economic restructuring, food production, and environmental change. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: SB - Social Behavior Science

GEO 160(3) Course ID: 000422
Lands and Peoples of the Non-Western World
Provides a geographic study of world regions defined conceptually and historically as non-Western. Includes global patterns of social, cultural, economic and political differences between the West and Non-West and the processes key to making the Non-Western world, such as colonialism and imperialism. Considers significant current issues including sustainable development, environment, human rights, and gender relations.
Components: Lecture 3 credits (45 contact hours)
Attributes: SB - Social Behavior Science

GEO 162(3) Course ID: 007194
Introduction to Global Environmental Issues
This course addresses environmental questions of global importance, including population growth, resource consumption, environmental degradation, biodiversity conservation, toxic contamination and environmental justice. (Fulfills Gen Ed Global Dynamics requirement at University of Kentucky.) Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: SB - Social Behavior Science, University Course (University of Kentucky)

GEO 172(3) Course ID: 000158
Human Geography
Presents a study of the spatial distributions of significant elements of human occupancy of the earth’s surface including basic concepts of diffusion, population, migration, settlement forms, land utilization, and impact of technology on human occupancy of the earth. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: SB - Social Behavior Science

GEO 210(3) Course ID: 000610
Pollution, Hazards, and Environmental Management
An introduction to environmental systems such as weather and climate, vegetation, land forms and soils, and how the quality of these systems is modified by human use. Resource issues discussed include: atmospheric pollution and global warming; groundwater, flooding, and flood plain management; volcanic activity and earthquakes; and biospheric processes associated with deforestation and lake eutrophication. Case studies based upon important environmental problems illustrate how human activity and environmental systems interact. Fulfills USP Cross-Disciplinary requirement. 3 credits (45 contact hours)
Components: Lecture
Attributes: SB - Social Behavior Science

GEO 222(3) Course ID: 000482
Cities of the World
Focuses on the historical development, contemporary character, and alternative futures of cities in both developing and developed regions. Emphasizes the spatial, social, economic, and political processes of major world cities. Includes a specific focus on contemporary urban problems.
Components: Lecture 3 credits (45 contact hours)
Attributes: SB - Social Behavior Science

GEO 240(3) Course ID: 000434
Geography and Gender
Presents a geographic approach to the study of gender relations, emphasizing the role of space and place in shaping the diversity of gender relations throughout the world. Stresses the importance of gender relations in understanding a variety of issues through the application of case study analysis. Includes the design and use of urban and rural environments, “Third World” development, regional economic restructuring, changing political geographies, and migration.
Components: Lecture 3 credits (45 contact hours)
Attributes: SB - Social Behavior Science

GEO 251(3) Course ID: 000659
Weather and Climate
A survey of the atmospheric controls associated with local, regional, and global weather and climate variability. Includes fundamental coverage of the physics and chemistry of energy, gases, pressure and moisture, with a goal of promoting understanding of general weather analysis and forecasting, severe storms, atmospheric pollution, descriptive climatology, and global climate change. Pre-requisite: GEO 130 or consent of instructor. 3 credits (45 contact hours)
Components: Lecture
Attributes: SN - Science

GER Germandic Languages and Literature

GER 101(4) Course ID: 000884
Elementary German I
Includes fundamentals of German with development of the four basic skills: reading, writing, listening, and speaking.
Components: Lecture 4 credits (60 contact hours)
Attributes: Foreign Language, Cultural Studies

GER 102(4) Course ID: 000759
Elementary German II
Continues the fundamentals of GER 101 with further development of the four basic skills: reading, writing, listening, and speaking. Pre-requisite: GER 101 or Consent of Instructor.
Components: Lecture 4 credits (60 contact hours)
Attributes: Foreign Language, Cultural Studies

GER 201(3) Course ID: 000860
Intermediate German I
Includes the systematic review of grammar and furthering of reading, writing, listening, and speaking skills based upon cultural and literary materials. Pre-requisite: GER 102, or equivalent or placement test.
Components: Lecture 3 credits (45 contact hours)
Attributes: Foreign Language, Cultural Studies

GER 202(3) Course ID: 000820
Intermediate German II
Continues the study of Intermediate German through grammar, reading, and oral practice. Pre-requisite: GER 201 or equivalent or placement test.
Components: Lecture 3 credits (45 contact hours)
Attributes: Foreign Language, Cultural Studies

GIS Geographic Information Systems

GIS 110(3) Course ID: 004761
Spatial Data Analysis and Remote Sensing Techniques
Introduces spatial analysis, the interpretation of map data, and the use of handheld Global Positioning Systems to collect data. Intended for those interested in a career in civil engineering or surveying. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (15 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

GIS 120(3) Course ID: 004762
Introduction to Geographic Information Systems
Presents a comprehensive survey of the fundamental concepts of GIS, providing students a command over the software to import raster and vector data into a GIS and to conduct simple analyses over their data. Intended for those with limited experience with GIS who are exploring career opportunities in the field. Pre-requisite: GIS 110. Lecture: 3 credits (45 contact hours).
Components: Lecture

GIS 210(3) Course ID: 005042
Advanced Topics in GIS
Explores advanced topics in GIS. Teaches students how to create and import geodatabases into a GIS, edit and create new vector and raster data, build layouts for presentation purposes and manipulate tabular data. Exposes students to various extensions within the software in order to conduct advanced analyses on their data. Pre-requisite: GIS 120. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

GLY Geological Sciences

GLY 101(3) Course ID: 000876
Physical Geology
Introduces the principles of physical geology, including study of minerals and rocks, volcanoes and earthquakes, plate tectonics, and the landforms of Earth’s surface. Requires concurrent enrollment in GLY 111. 3 credits (45 contact hours)
Components: Lecture
Attributes: SN - Science

GLY 102(3) Course ID: 000757
Historical Geology
Covers the history of the Earth: its origin as part of the solar system, and subsequent evolution of the atmosphere, continents, seas, and life as interpreted from the rock record. Includes in addition to lecture illustrations, field trips and out-of-class exercises. Gives attention to the development of the basic principles used in interpretation. Pre-requisite: GLY 101 and GLY 111 or consent of the instructor. Co-requisite: GLY 112 3 credits (45 contact hours)
Components: Lecture
Attributes: SN - Science

GLY 110(3) Course ID: 002218
Environmental Geology
Introduces and applies basic geological concepts to current environmental issues including the availability and use of water and soil resources, pollution causes, effects and solutions, and causes and prediction of environmental hazards including floods, landslides, subsidence, earthquakes and volcanoes. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science

GLY 111(1) Course ID: 000544
Physical Geology Laboratory
Identify minerals and rocks in hand specimens, interpret landscape features as shown on topographic maps, and study geologic maps. Co-requisite: GLY 101. Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

GLY 112(1) Course ID: 000548
Historical Geology Laboratory
Interpret geologic maps and cross-sections, and study important invertebrate fossil groups. Requires one field trip. Pre-requisite: GLY 101 and GLY 111 or consent of the instructor. Co-requisite: GLY 102. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory
GLY 114(1)  Course ID: 015662  Environmental Geology Laboratory  Introduces and applies basic geologic concepts in a laboratory setting to current environmental issues, including the availability, use, and testing of water and soil resources, as well as the effects, solutions, and causes of pollution. Pre-requisite or Co-requisite: GLY 110. Lab: 1.0 credit (30 contact hours). Components: Laboratory  Attributes: SL - Science Laboratory

GLY 130(3)  Course ID: 003781  Dinosaurs and Disasters: A Brief History of the Vertebrates  Examines dinosaurs' interactions with their environment, their indirect influence on mammals, and implications for humankind. Traces the history of dinosaurs from early vertebrate ancestors to their final extinction, and surveys the evolutionary, paleogeographic, environmental, and possible extraterrestrial causes for their rise to dominance and sudden fall. Lecture: 3 hours. 3 credits (45 contact hours).
Components: Lecture  Attributes: SN - Science

GLY 131(1)  Course ID: 007361  Dinosaur Laboratory  Augments GLY 130 in analysis and interpretation of fossils, scale models, and sedimentary rocks. Investigates specimens and examines features of dinosaurs and related fossils. Uses sedimentary rocks and fossils to interpret ancient environments, dinosaur anatomy, and geologic history. Demonstrates to students how science works. Pre-requisite or Co-requisite: GLY 130. Lab: 1.0 credit (30 contact hours).
Components: Laboratory  Attributes: SL - Science Laboratory

GLY 220(4)  Course ID: 008847  Principles of Physical Geology  Learn how the Earth works: an integrated course in physical geology, covering the physical, chemical and biological processes that combine to produce geological processes. Focuses on plate tectonics, earth surface processes, and properties and formation of earth materials. Lab exercises emphasize identification and interpretation of geologic materials, geologic maps and cross sections. Lecture: 3 credits (45 contact hours); Laboratory: 1 credits (30 contact hours).
Components: Lecture  Attributes: SL - Science Laboratory, SN - Science

HCI 200(3)  Course ID: 007419  Introduction to Health Care Informatics  Provides the foundation in the discipline of Health Care Informatics (HCI) by introducing basic concepts, historical development, current and future trends in the specialized discipline and the role of the informaticist in health care organizations. Clarifies the skills and knowledge required for successful integration of real-time documentation in health care informatics and management of that technology within the health care system. Pre-requisite: Minimum of an associate degree in health care applied science or instructor consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Other

HCI 210(3)  Course ID: 007420  Management of Health Care Information and System Security  Provides students with fundamental concepts in the discipline of health care information security systems that are required in the management of electronic data. Prepares the student to maintain data information system security within established standards of practice. Pre-requisite: HCI 200 Introduction to Health Care Informatics or Instructor Consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Other

HCI 220(3)  Course ID: 007421  Database Systems In Health Care  Provides students with the concepts that are fundamental to the field of health care informatics database principles. Includes the development of data set management, the importance of accurate data input and mapping information extracted from the health care documentation system. Pre-requisite: HCI 200 Introduction to Health Care Informatics or instructor consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Other

HCI 230(3)  Course ID: 007422  Legalities and Ethics in Health Care Informatics  Presents issues that the health care system faces in relation to legal issues, ethical dilemmas and regulatory and practice standards surrounding the real-time electronic health record and health care information systems. Pre-requisite: HCI 200 Introduction to Health Care Informatics or instructor consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Other

HED 106(7)  Course ID: 001522  Motograder Operator  Examines a broad base of skills required to operate heavy equipment with an emphasis on safety. Operation of a Motor-Grader will be learned by students. Pre-requisite: DIT 103. Lab: 7.0 credits (315 contact hours).
Components: Laboratory  Attributes: Technical

HED 107(7)  Course ID: 015676  Utility Tractor Loader Operator  Provides a broad base of skills required to operate heavy equipment with an emphasis on safety. Focuses on job awareness and industry requirements. Permits experience on dump truck and utility tractor loader. Pre-requisite or Co-requisite: DIT 103. Lab: 7.0 credits (210 contact hours).
Components: Laboratory  Attributes: Technical

HED 110(7)  Course ID: 015677  Power Shovel Backhoe Operator  Presents a background in the operation, maintenance, and safety considerations for a dump truck and power shovel backhoe. Pre-requisite or Co-requisite: DIT 103. Lab: 7.0 credits (210 contact hours).
Components: Laboratory  Attributes: Technical

HED 111(7)  Course ID: 001524  Bulldozer Operator  Presents a background in the operation, maintenance, and safety considerations for a dump truck and bulldozer. Pre-requisite: DIT 103. Lab: 7.0 credits (210 contact hours).
Components: Laboratory  Attributes: Technical

HED 201(6)  Course ID: 015679  Heavy Equipment Operating II  Reinforces material presented in HED 101. Provides intermediate instruction for students in the operation of heavy equipment such as bulldozers, backhoes, front end loaders, graders, and scrapers. Explains intermediate techniques of operation such as digging, ditching, sloping, stripping, grading, backfilling, clearing fields, and foundation excavating. Pre-requisite or Co-requisite: DIT 103. Lecture: 6.0 credits (90 contact hours).
Components: Lecture  Attributes: Technical

HED 225(3)  Course ID: 001528  Special Problems II  Reinforces material presented in HED 150, 200, and 250. Instructs all facets of project control. Pre-requisite Or Co-requisite: DIT 103. Lab: 3.0 credits (90 contact hours).
Components: Laboratory  Attributes: Technical

HED 251(6)  Course ID: 015680  Heavy Equipment Operating III  Reinforces material presented in HED 151 and 201. Provides advanced instruction for students in the operation of heavy equipment such as bulldozers, backhoes, front end loaders, graders, and scrapers. Explains advanced techniques of operation such as digging, ditching, sloping, stripping, grading, backfilling, clearing fields, and foundation excavating. Pre-requisite or Co-requisite: DIT 103. Lecture: 6.0 credits (90 contact hours).
Components: Lecture  Attributes: Technical

HFL 100(3)  Course ID: 015593  Introduction to Healthcare Facility Management  Introduces students to Healthcare Facility Leadership by presenting an overview of the history and development of healthcare engineering. The student will: learn the importance of compliance with the various codes and standards applicable to the healthcare facility environment; explore the driving factors affecting the operations and maintenance of health care facilities; review the complexity of delivering engineering in a patient centered environment; gain understanding of the complex structure and reporting relationships that exist in the healthcare industry; understand how the facility environment impacts regulatory requirements, clinical needs, and financial bottom line of healthcare; and gain an understanding of his/her role within the facility management department and the hospital setting. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical
HFL 110(2) Course ID: 015594
Introduction to Healthcare Industry
Introduces students to the healthcare industry by examining healthcare reporting relationships, organizational structures, personnel, facility types, department configurations, terminology, regulatory environment, and accreditation process. The course will also examine industry shifts related to an aging population and healthcare law changes. The student will have a clearer understanding of how to navigate the healthcare industry based on size and complexity. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

HFL 120(2) Course ID: 015663
Infection Control and Prevention
Examines the historical and evolving infection control complexities from both a clinical and physical environment perspective. Reviews changes the industry has taken to address this growing healthcare industry challenge. Studies how the physical environment and engineering practices during construction and maintenance impact infection control. Reviews infection control risk assessments and prevention documentation and techniques. Lecture 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

HFL 130(3) Course ID: 015664
Compliance, Codes and Standards I
Introduces students to the various codes & standards, regulatory, and accreditation agencies in Healthcare. Takes into consideration local, state, and federal regulatory bodies such as Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), Building Owners and Managers Association (BOMA), Center for Medicare and Medicaid Services (CMS), American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), International Organization for Standardization (ISO), National Electrical Code (NEC), International Building Code (IBC), The Joint Commission, and the DNV. Examines the facility leader's role in coordination and participation in the accreditation and regulatory survey processes. Evaluates the role of a coordinator and participant in emergency management drill and training. Develops fire training and drill coordination documentation. Pre-requisite: HFL 100 Introduction to Healthcare Facility Management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 140(3) Course ID: 015665
Maintenance and Operations I
Examines and reviews mechanical, electrical, plumbing, medical gas, fire protection, building envelope, medical, steam, and security systems that comprise most healthcare facilities. Reviews computer systems and software such as building automation, fire systems, work order systems, and CAD/BIM used by facility engineering. Understands equipment inventory, entry control, and disposition. Develops maintenance program for buildings, equipment, utilities, and grounds. Reviews energy management, sustainability. Pre-requisite: HFL 100 Introduction to Healthcare Facility Management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 150(3) Planning, Design and Construction I
Covers project management delivery from concept, development, design, constructing, method, bidding, budgeting, equipment acquisition, specifications, and meeting management. Develops and reviews current Infection Control Risk Assessment (ICRA) practices and documentation. Develops and reviews Interim Life Safety Measures (ILSM) practices and documentation. Pre-requisite: HFL 100 Introduction to Healthcare Facility Management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 230(3) Compliance, Codes and Standards II
Examines the major codes, standards and regulatory rules that apply to the healthcare industry. Examines. National Fire Protection Association (NFPA) 101, 110, 99, 25, 20, 10; Facility Guidelines Institute (FGI) Guidelines; The Joint Commission Standards for accreditation; and how to maintain standard specific documentation and checklists for accreditation surveys. Develops and maintains medical equipment and utility system programs. Develops and conducts inventory rounds and surveys. Develops standard specific policies and procedures, such as National Fire Protection Association (NFPA) 99 electrical equipment safety inspection requirements. Pre-requisite: HFL 130 Compliance, Codes and Standards I. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 240(3) Maintenance and Operations II
Examines the administration and coordination of work order processes to include preventive maintenance, corrective maintenance, moves, and projects. Applies equipment risk assessments in developing a maintenance program. Tests, monitors, and documents air quality, air exchange, and pressure relationships. Maintenance control access and key control systems. Manages policies and procedures. Develops competency based training programs. Manages low voltage systems (Nurse call, Closed Circuit Television System (CCTV), patient monitoring, Radio Frequency Identification (RFID) etc.). Understands Performance Improvement (PI) processes. Pre-requisite: HFL 140 Maintenance and Operations I. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 250(3) Planning, Design and Construction II
Examines the management, planning, monitoring, reporting, and closing out of projects. Emphasizes the management of drawing revisions, commissioning, equipment documentation, and hand off training. Details Change Order Request (COR) and Request For Information (RFI), as well as, reviewing the needs and requirements for space planning and allocation. Pre-requisite: HFL 150 Planning, Design and Construction I. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 260(3) Healthcare Facilities Leadership Capstone I
Components: Lecture
Attributes: Technical

HFL 270(3) Healthcare Facilities Leadership Capstone II
Examines management of related healthcare engineering roles, such as fire safety, environment of care, waste management, emergency management, protection services, and environmental services. Examines management of Human Resource functions (e.g. competencies, disciplinary action, hiring, performance appraisals, terminations, scheduling, staff orientation, and job descriptions). Performs and participates in organizational strategic planning, SWOT (strengths, weaknesses, opportunities and threats) analysis, report writing and presentations. Examines the importance of networking and partnerships (e.g. peers, local authorities, state authorities, and industry experts). Pre-requisite: HFL 260 Healthcare Facilities Leadership Capstone I. Co-requisite: HFL 240 Maintenance and Operations II. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HIM 102(3) Course ID: 004303
Archives Studies: Characteristics & Overview
This course provides an introduction to the profession of archives studies. In addition to the history, development, and nature of work in the profession; the basics of collections management and development, intellectual control, preservation, conservation, and technological applications will be presented. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIM 104(3) Course ID: 004304
Museum Studies: Characteristics & Overview
This course provides an introduction to the profession of museum studies. Course topics include the history, development, and nature of work in the profession; the basics of collections management and development; intellectual control; exhibit design; preservation; and technological applications. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIM 105(3) Course ID: 004305
Records Management: Characteristics & Overview
This course provides an introduction to the profession of records management. In addition to the history, development, and nature of work in the profession, the course will present the basics of files and forms management, records inventory and analysis, scheduling and reprography, electronic records and record center operation. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIM 110(3) Course ID: 004306
Archives Studies: Appraisal & Accessioning
This course provides an in-depth examination of the information appraisal and accession process in archives work. Topics covered include intellectual content, documentation strategies, appraisal theories, and accessioning practices. Students are expected to complete an accession record, including records transmittal form, deed of gift, and accession form. Pre-requisite: HIM 102. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIM 210(3) Course ID: 004308
Archives Studies: Preservation & Conservation
This course provides an in-depth analysis of the conservation and preservation issues confronting archive staff. Included in this course are the impact of environmental conditions upon collections, problems associated with various records media and formats, conservation and working with conservators, security, and emergency mitigation and response procedures. Each student is expected to prepare an archives emergency response plan. Pre-requisite: HIM 102. 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIM 214(3) Course ID: 004309
Archives Studies: Automation & Electronic Records
This course is designed to provide students with an in-depth understanding of automation practices for archives. Topics covered in this course include database theory, design and development, as well as data field content and structure as they relate to archives automation. In addition to creating a complete archival catalog record, students will generate an automated accession report, collection description with appended image, and container list. Pre-requisite: HIM 102. Components: Lecture
Attributes: Technical
HIM 230(3)  Course ID: 004310
Museum Studies: Collections Care & Management
This course provides an in-depth analysis of the curatorial needs of museum collections. Topics covered include collection policies and development, accessioning, registration, preservation, exhibiting, and ethical considerations regarding deaccessioning and collection sales. Pre-requisite: HIM 104, 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HIM 232(3)  Course ID: 004311
Museum Studies: Conservation and Preservation
This course provides an in-depth analysis of the conservation and preservation issues facing museum staff. Included in this course are the impact of environmental condition upon collections, problems associated with historic structures, artifact conservation and working with conservators, security, and emergency mitigation and response procedures. Each student is expected to prepare a museum emergency response plan. Pre-requisite: HIM 104, 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HIS 104(3)  Course ID: 000860
A History of Europe Through the Mid-Seventeenth Century
Surveys the development of European politics, society, and culture from the beginnings of civilization through the Age of Religious Conflict. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 105(3)  Course ID: 000834
A History of Europe from the Mid-Seventeenth Century to the Present
Surveys the development of European politics, society, and culture from the Age of Absolutism to the present. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 108(3)  Course ID: 000542
History of the United States Through 1865
Examines key political, economic, and social topics that have significantly influenced the American experience from the pre-colonial period through the Civil War era. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, Course Also Offered in Modules

HIS 109(3)  Course ID: 000171
History of the United States Since 1865
Examines key political, economic, and social topics that have influenced significantly the American experience from Reconstruction through the contemporary era. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, Course Also Offered in Modules

HIS 120(3)  Course ID: 000348
The World at War, 1939-45
Covers a global overview of the events of the Second World War, including consideration of the conflicts military, diplomatic, political, social, and economic dimensions.
Components: Lecture
Attributes: AH - Arts and Humanities, Course Also Offered in Modules

HIS 202(3)  Course ID: 000828
History of British People to the Restoration
Surveys the major political, social, economic, and cultural developments in British history from the pre-Roman era through the Stuart Dynasty. Includes examination of such topics as the Norman conquest, the Plantagenet dynasty, the Hundred Years War, War of the Roses, the Tudor monarchs, the Protestant Reformation, the Stuart kings, Puritan Revolution, and the Restoration. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 203(3)  Course ID: 000516
History of the British People Since the Restoration
Surveys the major political, social, economic, and cultural developments in British history from the Stuart period to the present. Includes examination of such topics as the Glorious Revolution, Imperial Wars, American Revolution, Napoleonic Wars, Industrial Revolution, Imperialism, World War I, Great Depression, World War II, Cold War, Decolonization, Post-War Britain, and the European Union.
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 206(3)  Course ID: 002219
History of Colonial Latin America
Surveys the social, economic, political and cultural development of Latin America from the fifteenth century to 1810 with an emphasis on pre-Columbian societies, the Iberian kingdoms in the Age of Expansion, the conquest and colonization of the indigenous cultures of the New World, the establishment of Spanish and Portuguese institutions, the relations between the Church and the State, the encomienda and the hacienda, slavery and the impact of the Bourbon Reforms on Latin America. 3 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 207(3)  Course ID: 002220
History Modern Latin America, 1810 to Present
Covers the history of the Latin American nations focusing on their social, economic, political and cultural development. Emphasizes the history of the independence movements, nation building, the struggle for modernization, dependency and the phenomenon of revolution since 1810. 3 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 215(3)  Course ID: 015616
Historical Perspectives on Prisons and Police Work
Examines historical development of law codes, police work and prisons since the ancient world, with emphasis on the early modern period to the present. Develops an understanding of current practices in criminology, placing emphasis on the evolving conceptions of the causes of and cures for criminal behavior, and the professionalization of police and corrections personnel. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, Other

HIS 220(3)  Course ID: 007417
Native American History: Pre-Contact to 1865
Surveys the struggle of Native Americans from pre-colonial times to 1865. Emphasizes the indigenous Native American culture and society, the Columbian and biological exchange, Indian-Anglo cultural interactions, the construction and reconstruction of Indian identities, U.S. Indian policy development, and forced Indian removal. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 221(3)  Course ID: 007418
Native American History: 1865 to Present
Surveys the struggle of Native Americans from 1865 to the present times. Emphasizes the indigenous Native American culture and society, Indian-Anglo cultural interactions, the construction and reconstruction of Indian identities, and the struggles for the Great Plains and the Great Basin. Assesses the U.S. Indian policy development in relation to forced Indian removal, Americanization plan, educational assault on Indian children, termination policy, and sovereignty. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 240(3)  Course ID: 000439
History of Kentucky
Surveys the chief periods in Kentucky’s growth and development from 1750 to the present focusing on the social, economic, cultural, and political trends of each region. 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 247(3)  Course ID: 000651
History of Islam and Middle East Peoples, 500-1250 A.D.
Surveys the origins and development of the Islamic civilization from the time of the Prophet Muhammad to 1250, with special emphasis on the role of the Arab, Iranian, and Turkic peoples. 3 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 252(3)  Course ID: 004315
Electronic Records Management
This course provides an in-depth coverage of the process by which electronic records are created and managed. Topics covered in the course include identification and analysis of electronic records for scheduling, and the use of database systems for monitoring compliance with scheduling and disposition of electronic and paper-based records. Students will be expected to design, develop, and implement a database for tracking records schedule compliance. Pre-requisite: HIM 106, 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HIS 254(3)  Course ID: 004316
Records Reproduction & Imaging Systems
This course provides an in-depth analysis of information reproduction systems for the management, preservation, and access of records. Students will master the appropriate use of a variety of image reproduction formats, quality control standards associated with each format, and the cost/benefit considerations appropriate for each image reproduction format. Pre-requisite: HIM 106, 3 credits (45 contact hours)
Components: Lecture
Attributes: Technical

HIS 256(3)  Course ID: 004493
World Civilization I
Presents a multicultural survey of world cultures and global issues from ancient to medieval times. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

HIS 257(3)  Course ID: 004675
World Civilization II
Presents a multicultural survey of world cultures and contemporary global issues from 1600 to the present. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities
HIS 248(3)  Course ID: 000654  
History of Islam and Middle East Peoples, 1250 to the Present  
Surveys the religion and institutions of the Islamic world in the Middle East with emphasis on the Mongol, Ottoman, Safavid, and Qajar Empires. Includes the demise of these empires, the response of the Middle East peoples to European imperialism, and the development of the Middle East since 1250. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 254(3)  Course ID: 000670  
History of Sub-Saharan Africa  
Surveys the major social, religious, cultural, economic, and political trends in Sub-Saharan African history since the 16th century. Includes the impact of the Atlantic slave trade, European imperialism, and 20th century wars on Sub-Saharan Africa. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 260(3)  Course ID: 000680  
African American History to 1865  
Studies the African American experience through the Civil War. Examines African heritage, slavery, and growth of African American institutions. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 261(3)  Course ID: 000693  
African-American History 1865 - Present  
Examines the African American experience from Reconstruction to the present, with emphasis on the rise of segregation, the Civil Rights Movement, and race relations into the twenty-first century. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 265(3)  Course ID: 000705  
History of Women in America  
Surveys the history of American women, with particular emphasis on the mid-19th century to the present. Includes the major themes of family, work, social ideas about women, and feminism. Pre-requisite: HIS 109 or consent of instructor. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 266(3)  Course ID: 0005481  
History of American Women to 1920  
Emphasizes the fight for women's suffrage to 1920. Includes American women, immigrant women, the changing nature of the family and work, and societal ideas about women. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 271(3)  Course ID: 0005262  
Medieval Europe  
Surveys European history from the fourth century through the fifteenth century. Lecture: 3 credits (45 contact hours). Pre-requisite: Sophomore standing.  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 293(3)  Course ID: 000749  
East Asia to 1800  
 Presents a survey of Chinese, Japanese, and Korean history from the earliest times to 1800. Emphasizes political, economic, social, and intellectual developments. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Cultural Studies, AH - Arts and Humanities  
HIS 296(3)  Course ID: 000753  
History of Asia II  
Surveys the major civilizations of Asia. Focuses on the key political, social, and cultural developments of the major peoples from the beginnings of western influence in Asia to the present. Pre-requisite: Sophomore standing or consent of instructor. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  
HIS 299(1 - 3)  Course ID: 005221  
Instructor Consent Required  
Special Topics in History: (Topic)  
Provides an in-depth study of a selected topic/area in History. Lecture: 1-3 credits (15-45 contact hours). Pre-requisite: Sophomore standing or Consent of Instructor.  
Components: Lecture  
Attributes: Other  
HIS 1081(0.75)  
Colonial America  
Examines key political, economic, and social topics from the pre-colonial period through settlement and colonization that have significantly influenced the American experience. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1082(0.75)  
The Early Nationalist Period  
Examines key political, economic, and social topics from the Revolution through the early national period that have significantly influenced the American experience. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1083(0.75)  
Growth and Prosperity  
Examines key political, economic, and social topics during the Antebellum period that have significantly influenced the American experience. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1084(0.75)  
Sectionalism and Civil War  
Examines key political, economic, and social topics from sectional conflict through the Civil War that have significantly influenced the American experience. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1091(0.75)  
History of the United States through the Gilded Age  
Examines key political, economic, and social topics from Reconstruction through the Gilded Age that have significantly influenced the American experience. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1092(0.75)  
The History of the United States from Imperialism through World War I  
Examines key political, economic, and social topics from the Progressive Era through World I and the 1920s that have significantly influenced the American experience. Pre-requisite: HIS 1091. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1093(0.75)  
The History of the United States from the Twenties to the Onset of the Cold War  
Examines key political, economic, and social topics from the Depression and New Deal through World II that have significantly influenced the American experience. Pre-requisite: HIS 1092. Lecture: 0.75 credit (11.25 contact hours).  
Components: Lecture  
HIS 1094(0.75)  
The History of the United States during the Cold War to the Present  
Examines key political, economic, and social topics from the Cold War and Civil Rights through the Rise of Conservatism that have significantly influenced the American experience. Pre-requisite: HIS 1093. Lecture: 0.75 credits (11.25 contact hours).  
Components: Lecture  
HIT 100(3)  
Introduction to Health Information Technology  
Includes history, organization, financing and delivery of health care services within a variety of settings. Explores the roles of a health information professional, an introduction to legal aspects of insurance billing and the role of the State Insurance Commission. Covers information on the generic components of the content, structure, collection, maintenance, and dissemination of health care data and how these components relate to record systems and documentation standards. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or Release of Information Data Specialist Certificate or by special permission of the Program Coordinator and Computer Literacy. Pre-requisite Or Co-requisite: [HIT 135 or BIO 137] and (CLA 131 or AHS 115 or MIT 103)]. Minimum grade of C. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  
HIT 104(3)  
Pathophysiology of Human Disease  
An overview of pathophysiology content and teaching materials as they relate to the health information field. A review of disease terminology, pathology, clinical presentation, surgical and diagnostic procedures and treatment modalities. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator and (CLA 131 or AHS 115 or OST 103) and (BIO 137) with a grade of C or better). Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  
HIT 105(4)  
Pathophysiology / Pharmacology for Health Information Professionals  
Provides an overview of pathophysiology content, review of disease terminology, and clinical presentation with the application of pharmacology to treat human diseases as it relates to the field of health information technology. Pre-requisite or Co-requisite: [HIT 100 and (BIO 135 or BIO 137) and (CLA 131 or AHS 115 or MIT 103)]. Minimum grade of C. Lecture: 4.0 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical  
HIT 106(2)  
Pharmacology for Health Information Professionals  
Application of pharmacology to the treatment of human diseases and disorders as it relates to the field of health information technology. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator and (CLA 131 or AHS 115 or OST 103) and (BIO 137) with a grade of C or better). Lecture: 2 credits (30 contact hours).  
Components: Lecture  
Attributes: Technical  
HIT 108(4)  
Clinical Classification Systems I  
Applies current government-mandated diagnosis and procedure coding systems in a health care setting. Pre-requisite: HIT 105. Minimum grade C. Pre-requisite or Co-requisite: BIO 139 (If BIO 137 taken). Minimum grade C. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).  
Components: Laboratory, Lecture  
Attributes: Technical
HIT 110(2)  
Course ID: 004265  
Legal & Ethical Issues in Health Information  
Includes legal principles and issues that govern health information management and patient medical records. Covers ethical issues as they relate to the security and dissemination of patient health information and corporate compliance programs. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or by special permission of the Program Coordinator. Pre-requisite Or Co-requisite: HIT 100. Minimum grade of “C”. Lecture: 2.0 credits (30 contact hours).

Components: Lecture  
Attributes: Technical

HIT 112(3)  
Course ID: 004266  
Reimbursement Methodologies  
Introduces the uses of coded data and health information reimbursement and payment systems appropriate to all health care settings including managed care. Includes a history of major U. S. insurance developments. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate or by special permission of the Program Coordinator. [Computer/ Digital Literacy and (BIO 135 or BIO 137) and HIT 100 and HIT 105]. Minimum grade of C. Pre-requisite Or Co-requisite: BIO 139 (if BIO 137 was taken). Minimum grade of C. Lecture 2.5 credits (37.5 contact hours). Lab: 0.5 credits (15 contact hours).

Components: Laboratory, Lecture  
Attributes: Technical

HIT 114(2)  
Course ID: 004267  
Clinical Practicum I  
Includes the clinical practice of medical records review and documentation within a health information department. Provides students with the opportunity to assist personnel in the legal and ethical collection and dissemination of health care data including the use of registries and indexes. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator. Computer Literacy and [BIO 139 and HIT 100 and HIT 104 and HIT 106) with a grade of "C" or better]. Practicum: 2.0 credits (90 contact hours).

Components: Practicum  
Attributes: Technical

HIT 200(3)  
Course ID: 004268  
Information Systems in Health Care  
Covers the concepts of computer technology related to the healthcare industry and the tools and techniques for collecting, storing, retrieving, and analyzing health care data. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or by special permission of the Program Coordinator and (HIT 109 and HIT 110 and HIT 112). Minimum grade of “C”. Pre-requisite Or Co-requisite: (CIT 130 or OST 240). Minimum grade of “C”. Lecture: 2.5 credits (37.5 contact hours). Laboratory: 0.5 credits (15 contact hours).

Components: Laboratory, Lecture  
Attributes: Technical

HIT 202(3)  
Course ID: 004259  
Clinical Classification Systems II  
Includes Current Procedural Terminology (CPT) coding system and the advanced application of hospital based reimbursement issues. Uses a microcomputer and software to apply medical coding procedures. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or by special permission of the Program Coordinator. (Computer/Digital Literacy and HIT 109). Minimum grade of C. Pre-requisite Or Co-requisite: (BIO 139 if BIO 137 was taken). Minimum grade of C. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture  
Attributes: Technical

HIT 204(2)  
Course ID: 004270  
Quality Assessment In Health Information  
Principles of quality assessment as they relate to health information technology. Includes data collection and analysis, implementation of quality improvement processes, and a review of regulatory and accrediting organization requirements. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator. Successful completion of (HIT 108 and HIT 110 and HIT 112 and HIT 114) with a grade of C or better). Lecture: 2 credits (30 contact hours).

Components: Lecture  
Attributes: Technical

HIT 205(3)  
Course ID: 007084  
Quality Mgmt. & PI - Health Info  
Examines principles of performance improvement as it relates to health information technology. Integrates data collection, analyses, evidence-based care, implementation of performance improvement processes, and examines regulatory, legal, and payor requirements including payment. Pre-requisite or Co-requisite: HIT 109 and HIT 110. Minimum grade of C. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: Technical

HIT 206(2)  
Course ID: 004271  
Clinical Classification Systems III  
This course introduces the advanced application of clinical classification systems in the reimbursement for health care services. Included in the course will be a review of fraud, abuse and regulatory agencies. Students will use a microcomputer and software to apply medical coding procedures. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator. Completion of HIT 202 with a grade of C or better. Lecture: 1.5. This course introduces the advanced application of clinical classification systems in the reimbursement for health care services. Included in the course will be a review of fraud, abuse and regulatory agencies. Students will use a microcomputer and software to apply medical coding procedures. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator. Completion of HIT 202 with a grade of C or better. Lecture: 1.5 hours. Laboratory: 1 hour. Laboratory: 1 hour.

Components: Laboratory, Lecture  
Attributes: Technical

HIT 207(3)  
Course ID: 007085  
Clinical Classification Systems III  
Introduces the advanced application of clinical classification systems in the reimbursement for health care services and specialty systems such as RBRVS, OASIS, RUGS, Cancer Registry, etc. Reviews fraud, abuse, and regulatory agency requirements relating to coding and billing. Pre-requisite: HIT 109 and HIT 202. Minimum grade of “C”. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture  
Attributes: Technical

HIT 208(1)  
Course ID: 004272  
Clinical Coding Practicum  
Introduces the student to the clinical practice of medical record coding procedures. Provides an opportunity to observe professional and ethical behavior standards within a health information department, code medical records for reimbursement, and practice appropriate security measures. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Certificate Program or by special permission of the Program Coordinator. Successful completion of HIT 108, HIT 110, HIT 112, HIT 202, HIT 206 with a grade of “C” or better. Practicum: 1.0 credits (90 contact hours).

Components: Practicum  
Attributes: Technical or better. Practicum: 1.0 credits (90 contact hours).

HIT 210(2)  
Course ID: 004273  
Health Care Statistics  
Introduces the principles of organization, supervision, leadership, motivation, and team building within the health information environment. Applies concepts of descriptive statistics, data validity, reliability, and the appropriate use and interpretation of applied health care statistics including the use, collection, arrangement, analysis, presentation and interpretation of health care data. Pre-requisite: HIT 109 and HIT 110. Minimum grade of “C”. Pre-requisite or Co-requisite: HIT 112. Minimum grade of “C”. Lecture: 3.0 credits (45 contact hours).

Components: Lecture  
Attributes: Technical

HIT 211(3)  
Course ID: 007086  
Health Care Management and Statistics  
Introduces the principles of organization, supervision, leadership, motivation, and team building within the health information environment. Included in the course will be a review of financial performance, economics, contracts, marketing, education, and training. Pre-requisite: Admission to the Health Information Technology Program or by special permission of the Program Coordinator. Successful completion of HIT 200, HIT 202, and HIT 204 with a grade of C or better. Lecture: 2 hours. (Contact 30 hours)

Components: Lecture  
Attributes: Technical

HIT 214(3)  
Course ID: 004275  
Clinical Practicum II  
This course introduces the student to the clinical practice of medical records review, documentation, and supervision within a health information department. The student will observe and assist personnel in all areas of job responsibility within the Health Information Management department. Pre-requisite: Admission to the Health Information Technology Program or by special permission of the Program Coordinator. Completion of HIT 200, HIT 202, and HIT 204 with a grade of C or better. Laboratory: 9 hours.

Components: Practicum  
Attributes: Technical

HIT 215(4)  
Course ID: 007087  
Clinical Practicum  
Introduces the student to the clinical practice of health information review, documentation and supervision within a health information management (HIM) department. Observes and assists personnel in assigned areas of job responsibility within the HIM Department. Provides student with onsite project. Exposes student to HIM roles in other departments (e.g., quality, CDM, Cancer Registry, compliance, risk management). Pre-requisite: (HIT 200 and HIT 202 and HIT 204. Minimum grade of “C”) or Consent of Program Coordinator. Practicum: 4.0 credits (180 contact hours).

Components: Practicum  
Attributes: Course Also Offered in Modules, Technical

HIT 289(0.5 - 4)  
Course ID: 007090  
Selected Topics in Health Information Technology: (Topic)  
Addresses various health information technology topics, issues, and trends. Includes topics that may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of four credit hours. Lecture: 0.5 - 4.0 credits (7.5 - 60.0 contact hours). Lab: 0.5 - 4.0 credit hours (15 - 20 contact hours).

Components: Laboratory, Lecture  
Attributes: Technical
HIT 2151(2)  Course ID: 007088
Clinical Practicum I
Continues the clinical practice of health information review, documentation and supervision within a health information management (HIM) department. Provides observation and assists personnel in assigned areas of job responsibility, within the HIM Department. Pre-requisite: HIT 200 and HIT 202 and HIT 204. Minimum grade of "C" or Consent of Program Coordinator. Practicum: 2.0 credits (90 contact hours).
Components: Practicum

HIT 2152(2)  Course ID: 007089
Clinical Practicum II
Introduces the student to the clinical practice of health information review, documentation and supervision within a health information management (HIM) department. Provides observation and assists personnel in all assigned areas of job responsibility within the HIM Department. Pre-requisite: (HIT 200 and HIT 202 and HIT 204). Minimum grade of C or Consent of Program Coordinator. Practicum: 2.0 credits (90 contact hours).
Components: Practicum

HMS Human Services

HMS 101(3)  Course ID: 000901
Human Services Survey
Examines community human service agencies regarding their organization, service delivery system, staffing patterns, and funding sources. Explores the origin and development of the social welfare system as well as social welfare policy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 102(3)  Course ID: 000777
Values of Human Services in a Contemporary Society
Examines the values and ethics of human service professions. Encourages a personal philosophy of client intervention, including the development of a professional value base, achieved through the examination of major social problems and issues. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 103(3)  Course ID: 000202
Theories and Techniques in Human Services
Introduces philosophies, theories for intervention, and the problem-solving process. Emphasizes the development of a skill base used in counseling techniques and client intervention. Enhances interpersonal relationship skills through knowledge of communicative techniques. Provides activities in which the student will apply this knowledge and these skills. Pre-requisite: (HMS101 and HMS 102 with a grade of "C" or better) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 104(3)  Course ID: 000867
Group Dynamics for Human Services
Covers group techniques in clinical or agency settings based on various theoretical models with emphasis on the leadership role, phases of group development, and interaction within the group. Pre-requisite: HMS 103 with a grade of "C" or better or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 200(3)  Course ID: 000784
Dynamics of Human Behavior
Includes a historical view of theories of personality development, maladaptive behavior, knowledge of treatment, techniques of adjustment and social implications. Pre-requisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 201(3)  Course ID: 000617
Drugs, Society, & Human Behavior
Covers the nature and progression of chemical abuse and dependency, and effects on the individual, family, and society. Includes strategies for prevention, intervention, and treatment. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 211(3)  Course ID: 005583
Introduction to Addictions
Provides an overview of approaches to understanding addictions with emphasis on the bio-psycho-social model. Analyzes the etiology, progression, and processes involved in change. Pre-requisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Course Equivalents: SWK 255  Attributes: Technical  Human Services

HMS 212(3)  Course ID: 005585
Crisis Intervention
Focuses on crisis intervention theory, suicide prevention, and risk assessment techniques. Covers risk assessment protocols, crisis triage, de-escalation and referral. Introduces clinical, ethical and legal aspects. Pre-requisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Course Equivalents: SWK 260  Attributes: Technical

HMS 220(3)  Course ID: 005588
Cultural Diversity in Human Services
Examines current and historical cultural diversity in human services provision. Focuses on cultural self-awareness and cultural competence as they pertain to human services professionals. Explores dominant and minority cultural norms, attitudes, and belief systems. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Course Equivalents: SWK 220  Attributes: Technical

HMS 235(3)  Course ID: 000818
Teaching Persons with Mental Retardation
Introduces mental retardation with emphasis on understanding and teaching the mentally retarded. Pre-requisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 245(3)  Course ID: 016148
Psychiatric Mental Health Technician
Prepares students for employment as psychiatric aides or psychiatric technicians. Includes a review of nursing assistant skills, psychopathology, DSM diagnostics, strengths perspective, bio-psycho-social assessments, and psychotropic medications. Explores the responsibilities of mental health technicians who work under the supervision of a psychiatrist, registered nurse, or social worker; as well as participate in the development and implementation of therapeutic treatment plans for persons with mental disorders; particularly those receiving treatment in an inpatient setting. Pre-requisite: NAA 100 or MNA100, PSY110 and HMS 103 with a grade of "C" or better or consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HMS 250(4)  Course ID: 000808
Clinical Practice in Human Services
Provides practice and application of principles and skills previously learned in Human Services courses in community agencies. Pre-requisite: HMS 104 with a grade of "C" or better or Consent of Instructor. Lecture: 1.0 credit (15 contact hour); Clinical: 3.0 credits (180 contact hours).
Components: Clinical  Lecture  Attributes: Technical

HMS 265(3)  Course ID: 000709
Working with Disabilities in Human Services
Provides an in-depth study of the coordination and provision of services and supports for individuals with disabilities in community settings, including the provision of community-referenced instruction, vocational instruction in community settings, school-to-work transition planning, integrated recreation/leisure opportunities, and personal management/independent living skill training and supports. Emphasizes developmental disabilities and mental retardation. Lecture: 3.0 credits (45 contact hours).
Components: Lecture  Attributes: Technical

HON Honors

HON 101(3)  Course ID: 000892
The Ancient World From Greek and Roman antiquity to the early Christian centuries: an interdisciplinary course in intellectual history. Readings vary at the discretion of the faculty. Pre-requisite: Membership in the Honors Program. 3 credits (45 contact hours).
Components: Lecture  Attributes: AH - Arts and Humanities

HON 102(3)  Course ID: 000766
The Medieval and Renaissance World
From the Middle Ages through the Reformation: an interdisciplinary course in intellectual history. Readings vary at the discretion of the faculty. Written assignments required. Pre-requisite: Membership in the Honors Program. 3 credits (45 contact hours).
Components: Lecture  Attributes: AH - Arts and Humanities

HON 201(3)  Course ID: 000889
The Early and Modern World
From the development of the modern scientific method through mid-19th century industrialism: an interdisciplinary course in intellectual history. Readings vary at the discretion of the faculty. Pre-requisite: Membership in the Honors Program. 3 credits (45 contact hours).
Components: Lecture  Attributes: AH - Arts and Humanities

HON 202(3)  Course ID: 000832
The Contemporary World
The contemporary world: an interdisciplinary course in intellectual history. Readings vary at the discretion of the faculty. Pre-requisite: Membership in the Honors Program. 3 credits (45 contact hours).
Components: Lecture  Attributes: AH - Arts and Humanities
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Attributes</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS 100(3)</td>
<td>Introduction to Hospitality Management</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HOS 110(3)</td>
<td>Security for the Hospitality Industry</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HOS 200(3)</td>
<td>Cultural Heritage Tourism</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HOS 282(3)</td>
<td>Tourism Marketing</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 100(3)</td>
<td>Health Physics Fundamentals</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 101(3)</td>
<td>Health Physics I</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 102(3)</td>
<td>Health Physics II</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 120(3)</td>
<td>Radiation Biology</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 201(4)</td>
<td>Nuclear Instrumentation and Measurement I</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 202(4)</td>
<td>Nuclear Instrumentation and Measurement II</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPH 246(2)</td>
<td>Environmental Law</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPT 100(3)</td>
<td>Introduction to Historic Preservation</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HPT 101(2)</td>
<td>Introduction to Historic Preservation Lab</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRT 102(3)</td>
<td>Introduction to Horticulture</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRT 104(4)</td>
<td>Introduction to Herbaceous Plants</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRT 202(2)</td>
<td>Window Restoration and Repair</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRS 101(3)</td>
<td>An Integrated Survey of Western Civilization I</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRS 200(3)</td>
<td>Independent/Guided-Study Project</td>
<td>Technical</td>
<td>Lecture</td>
</tr>
<tr>
<td>HRT Horticulture</td>
<td></td>
<td></td>
<td>Lecture</td>
</tr>
</tbody>
</table>
HRT 108(4)  
Course ID: 001535  
Introduction to Woody Plants  
Covers the care, culture, and distinguishing characteristics of woody plants including the scientific and common names of many of the most common landscape woody plants. Examines pests that are common to these plants. Lecture: 4 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 110(4)  
Course ID: 001536  
Nursery Management  
This course provides an introduction to the nursery industry. It includes information on soils, plant growth, nutrition and propagation methods; comparison of field and container growing practices; comparison of pest control methods; storing, grading and marketing nursery stock and the importance of keeping records and accounts. 4 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 120(4)  
Course ID: 001538  
Turf Management  
Focuses on the identification, care, and culture of cool and warm season turf plants including how to calculate an area for seed or sod, identification of insects, weeds, diseases and the proper control measures for each, and the development of a schedule for good turf management and renovation for turf areas. Lecture: 4 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 130(3)  
Course ID: 001539  
Landscape Maintenance  
Introduces basic techniques for landscape management including pruning and planting techniques, safe working practices in the landscape and pest management. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 131(2)  
Course ID: 001540  
Landscape Maintenance Lab  
Applies knowledge of equipment, technology, and safety issues related to landscape maintenance, and the use of general math skills in computations used in the landscape including pesticides, fertilizers, and IPM systems used in maintaining the landscape, soils, and construction of various hard surface features. Laboratory: 2 credits (90 contact hours).  
Components: Laboratory  
Attributes: Technical

HRT 150(3)  
Course ID: 001543  
Horticulture Business Management  
This course introduces various career opportunities in a garden center and focuses on salesmanship and business practices utilized in this environment. Identification of characteristics, usage and care of woody ornamentals, annual and perennial plants, as well as use and care information needed by the consumer are included. Assisting customers in choosing chemical pesticides and plant related products is discussed. 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 160(4)  
Course ID: 005263  
Retail Floral Design  
Provides information and skills for successful employment in the floral design industry including business management, cost analysis and marketing, materials, containers, tools, and flowers. Lecture: 4 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 161(2)  
Course ID: 005264  
Retail Floral Design Lab  
Applies design principles and small business operations. Uses fresh and artificial floral products to create displays. Laboratory: 2 credits (90 contact hours).  
Components: Laboratory  
Attributes: Technical

HRT 201(4)  
Course ID: 001545  
Landscape Design  
Introduces the basic principles and practices of landscape design including the use of drawing equipment. Topics include the creation of design symbols and the development of a client needs and site analysis plan. Emphasis is placed on the ability to read landscape drawings and install plants from the design plan. Lecture: 4 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical

HRT 240(4)  
Course ID: 001547  
Greenhouse Management  
Topics include the identification and function of a plant's leaves, roots and stems; as well as identifying major plant processes and sexual reproduction parts. The 16 essential elements and how they effect plant growth are discussed. Identification of diseases, insects and plant disorders in the greenhouse are included. Development of growing schedules for the following crops are completed: poinsettias, chrysanthemums, Easter lilies, bedding plants and hanging baskets. Injectors are calibrated using various fertilizer and chemical ratios. Pre-requisite/Co-requisite: HRT 140. 4 credits (60 contact hours)  
Components: Lecture  
Attributes: Technical

HSE 101(1)  
Course ID: 002221  
Introduction to Health Sciences  
Provides students with information and career options about allied health and health sciences programs including presentations by allied health practitioners. Students will research selected health professions/careers and allied health and sciences educational programs. Lecture: 1.0 credits (15 contact hours).  
Components: Lecture  
Attributes: Technical

HSM 100(3)  
Course ID: 005518  
Introduction to Homeland Security  
Introduces the history and organizational development of the US Department of Homeland Security. Examines the roles and functions of the components of Homeland Security and their relationships to state and local agencies. Investigates current trends and career opportunities in homeland security. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

HSM 110(3)  
Course ID: 005519  
Introduction to Emergency Management  
Introduces the field of emergency management and the incident command system, including the terminology and definition of emergency and disaster management. Examines four phases of emergency management and disaster planning: mitigation, response, recovery, and preparedness. Examines legal requirements, responsibilities, and laws pertaining to emergency management. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

HSM 225(3)  
Course ID: 005780  
Ethical and Legal Issues in Homeland Security  
Examines the ethical and legal issues in the administration of Homeland Security and its efforts to combat terrorism. Examines the legal powers and ethical standards entrusted in the personnel empowered with the implementation of the issues of Homeland Security. Provides an opportunity to demonstrate knowledge of the ethical and legal complexities and dilemmas involved in the establishment and enactment of policies pertaining to Homeland Security. Lecture: 2.0 credits (30 contact hours).  
Components: Lecture  
Attributes: Technical

HSM 1003(1)  
Course ID: 016173  
Homeland Security Trends  
Examines with greater depth the roles and functions of the components of Homeland Security and their relationships to state and local agencies with an emphasis on investigating current trends and career opportunities in the field of homeland security. Pre-requisite: HSM 1002. Lecture: 1.0 credits (1.0 contact hours).  
Components: Lecture

HST 101(3)  
Course ID: 007362  
Health Care Basic Skills I  
Introduces student to basic health care skills such as measuring and recording vital signs, assisting licensed personnel, observing and reporting patient conditions, collecting specimens and caring for the hygiene, comfort, and safety of patients in various settings. Prepares the student for entry-level health care positions by incorporating certification for American Heart Association Cardiopulmonary Resuscitation (CPR), Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours).  
Components: Laboratory, Lecture

HST 102(3)  
Course ID: 007363  
Health Care Delivery & Management  
Introduces delivery and management of health care including professionalism, health care roles, health care delivery models, and types of health care coverage. Explores legal/ethical issues including HIPAA and confidentiality, electronic medical records and patients' rights as well as analysis of current trends in health care today. (Appropriate for any student considering entering the Allied Health or Nursing field.) Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

HST 103(2)  
Course ID: 007364  
Health Care Communication  
Introduces communication and its various forms as it exists in the health care field. Focuses on verbal, nonverbal, written and oral communication between members of the health team, patient, and family in an interdisciplinary approach. Examines each role with discussion from the perspective of the involved parties. Emphasizes diversity, sociocultural influences, and teamwork. Includes discussion of the media's role in health care, as well as how health promotion campaigns may be implemented and managed. Appropriate for anyone interested in a career in allied health or nursing. Lecture: 2.0 credits (30 contact hours).  
Components: Lecture  
Attributes: Technical

HST 104(3.5)  
Course ID: 015849  
Health Care Basic Skills I with Clinical  
Introduces student to basic healthcare skills such as measuring and recording vital signs, assisting licensed personnel, observing and reporting patient conditions, collecting specimens and caring for the hygiene, comfort, and safety of patients in various settings. Prepares the student for entry level healthcare positions by incorporating certification for American Heart Association Cardiopulmonary Resuscitation (CPR). Prepares student for the State Registered Nurse Aide examination. Note: Faculty and clinical sites (45 hours) must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1.450. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours). Clinical: 0.5 credits (23 contact hours).  
Components: Clinical, Laboratory, Lecture  
Attributes: Technical
HST 121(2) Course ID: 007365
Pharmacology
Introduces students to the basics of pharmacology/ pharmokinetics, includes terms used to describe various effects and reactions from drug usage. Will also introduce metric system and basic dosage calculations common to most fields of study within allied health and nursing. Lecture: 2.0 credits (30 contact hours). Components: Lecture Attributes: Technical

HST 122(3) Course ID: 007366
Clinical Pathophysiology
Explores an introduction to the nature of disease and its effect(s) on body systems. Provides a study of pathology and general health management of diseases and injuries across the lifespan. Includes topics of etiology, symptoms, physical and psychological reactions to diseases and injuries. Pre-requisite: BIO 137 or BIO 135. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

HST 122(3) Course ID: 007367
Health Care Basic Skills II
Builds on basic health care skills by incorporating previous learning into more advanced concepts and higher level skills. Emphasizes care of patients with common health problems throughout the lifespan. Prepares students to independently perform skills such as blood sugar monitoring, running an electrocardiogram, urinary catheterization and enemas, collecting blood for lab tests and preparing patients and instruments for surgery, treatment or examination. Pre-requisite: HST 101. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (45 contact hours). Components: Laboratory, Lecture Attributes: Technical

HUM Humanities
HUM 120(3) Course ID: 000350
Introduction to the Humanities
Introduces students to at least five disciplines in the humanities, such as art, literature, dance, drama, cinema, philosophy, music, architecture, religion, and mythology. Explores distinctions and relationships between the disciplines through study of their basic methods, themes, and forms. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 121(3) Course ID: 004906
Peace Studies
This interdisciplinary course is intended as a general introduction to the nature, scope, and methodology of Peace Studies, with a view toward the future. It will explore the history of non-violent movements to effect social change, the role of women in the attainment of peace and protection of life, the tie between social justice and the environment, and the resolution of conflict between individuals, groups, societies, and nations. The course includes the study of activists such as Dr. Martin Luther King, Jr., Gandhi, and Dorothy Day. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 135(3) Course ID: 000582
Introduction to Native American Literature
Introduces the study of the oral and written literature of Native American peoples, emphasizing the cultural and historical context in which it was composed. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities, SB - Social Behavior Science

HUM 140(3) Course ID: 006814
Introduction to Latino Literature
Introduces literary texts and other artistic expressions to reveal aspects of Latino cultures such as identity, immigration, indigeneity; relates literary developments and movements to the cultural, political, and religious experiences of Latinos in the U.S.; examines connections between minority writing and mainstream literary works. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 150(3) Course ID: 005430
Introduction to African Literature
Presents a cross-cultural and historical approach to the oral and written works by major Black writers of Africa. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 160(3) Course ID: 007110
Introduction to Holocaust Literature and Film
Analyzes literary texts, memoirs, film, and other artistic expressions of the Holocaust to focus on the cultural and political events that caused the Holocaust; examines how subsequent people represent what happened; explores the consequences of the Holocaust in terms of ethical and human rights issues; examines how issues of racism and religious intolerance occurred prior to and since the Holocaust; addresses the Holocaust in a comparative perspective to prior and subsequent acts of genocide in other countries. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 202(3) Course ID: 000841
Survey of Appalachian Studies I
Presents an inter-disciplinary introduction to Appalachian history, economy, geography, politics, and culture, primarily through exploration of texts about the region, including fiction, non-fiction, and poetry. Emphasizes geography, Appalachian identity, works, values, and communication. May also include exploration of regional music, traditional arts, drama, photography, film, and, where applicable, community-based explorations of the Appalachian experience. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities, SB - Social Behavior Science

HUM 203(3) Course ID: 000518
Survey of Appalachian Studies II
Presents an inter-disciplinary introduction to Appalachian history, economy, geography, politics, and culture, primarily through exploration of texts about the region, including fiction, non-fiction, and poetry. Emphasizes migrations, economy, belief, expression, politics and government, and environment. May also include exploration of regional music, traditional arts, drama, photography, film, and, where applicable, community-based explorations of the Appalachian experience. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities, SB - Social Behavior Science

HUM 204(3) Course ID: 000812
Appalachian Seminar
Examines in detail one or more issues pertinent to the Appalachian region. Topics may include but are not limited to: cultural diversity, religious expression, politics and government, trends in Appalachian literature, or trends in regional sociological scholarship. Topics may vary from semester to semester. This course may be repeated once for credit with a different topic. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities, SB - Social Behavior Science

HUM 207(3) Course ID: 007049
American Seminar: Topic
Examines issues pertinent to American culture and identity through an interdisciplinary and multi-cultural approach. Includes topics such as cultural diversity, religious expression, politics and government, trends in art, literature, and/or music, political life, media representation, trends in social science which may vary from semester to semester. Course may be repeated once for additional credit when the repeat offering covers a different topic than the initial course offering. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 220(3) Course ID: 005532
Historical Perspectives on Peace and War
Provides an introduction to the history of violence and peace movements. Examines the anthropological, political, cultural, and technological forces contributing to the frequent occurrence of war throughout history. Explores the history of movements and organizations, both religious and secular, intended to minimize warfare and oppression. Examines literature and visual arts to enhance and elaborate on the themes presented in the anthropological and historical sections of the course. Sophomore standing or consent of instructor. Pre-requisite: Sophomore Status. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 221(3) Course ID: 005533
Contemporary Perspectives on Peace and War
Introduces the effects of modern-day warfare and the countervailing trends, actions, and movements to create peace. Focuses on aspects of peace and war such as the role of women, the perspectives of notable scientists, philosophical perspectives, the role of economic globalization in social justice, the environmental impacts, and conflict resolution. Sophomore standing or consent of instructor. Pre-requisite: Sophomore Status. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: SB - Social Behavior Science

HUM 230(3) Course ID: 000374
Contemporary Japanese Literature and Culture in Translation
Presents traditional and contemporary aspects of Japanese culture as reflected in both cultural studies and literature. Examines daily life as revealed in the themes and motifs of Japanese fiction, poetry, drama, and film. Pre-requisite: ENG 102 or ENG 105 or consent of instructor. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 245(5) Course ID: 005357
Seminar in Kentucky Literature
This is an online or computer-assisted seminar course in Kentucky literature recognizing, examining, and studying distinct regional differences and similarities with concentration on major contemporary and traditional Kentucky writers and their texts. Topics will vary, from a group of authors, and historical period or aesthetic movement, to a genre, a theme, or an aspect of literary theory. Lecture: 3 credits (45 contact hours). Components: Lecture Course Equivalents: Lit 200 Attributes: AH - Arts and Humanities

HUM 250(3) Course ID: 005923
Appalachian Literature Survey
Surveys significant texts about Appalachia from native populations and early European settlement to the end of the twentieth century. Emphasizes texts by writers living and working in the region, though perspectives from outside of the region may be examined. Focuses on historical, social, political, and cultural contexts, as well as analysis of literary forms and techniques. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities

HUM 251(3) Course ID: 005924
Contemporary Appalachian Literature
Examines significant texts by Appalachian writers of the last twenty-five years. Emphasizes the development of contemporary Appalachian literary voice and identity. Examines connections or challenges to "traditional" Appalachian heritage and cultural identity. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities
HUM 281(3)  Course ID: 006540
Introduction to Film  
Introduces the study of movies as a narrative art and a cultural document. Requires viewing of films outside of class. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: ENG 281
Attributes: AH - Arts and Humanities

HUM 282(3)  Course ID: 006541
International Film Studies  
Analyzes film as an international cultural product. Examines the ways in which films reflect and shape cultural values in various societies. Lectures: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: ENG 282
Attributes: Other

ICT  Industrial Chemical Technology

ICT 186(3)  Course ID: 016366
Intro to Process Technology  
Introduces the student to a process technician's role and responsibility. Provides instruction in basic principles of safety, quality, process, science, and technology. Includes review of basic chemistry, physics, and math related to industrial process and solving for industrial problems. Introduces basic process equipment. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ICT 192(4)  Course ID: 016367
Process Technology Equipment  
Covers process equipment's function, components, operation, and the Process Technician's role for operating and troubleshooting, to include, but not limited to piping, valves, tanks, pumps, compressors, electrical distribution, motors, heat exchangers, boilers, reactors, and auxiliary equipment. Pre-requisite: ICT 186 with a grade of C or greater or Permission of Instructor. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture
Attributes: Technical

ICT 194(4)  Course ID: 016368
Process Technology Systems  
Covers the interrelation of process equipment and process system, specifically the arrangement of process equipment into basic systems, process purpose, and specific function. Discusses the Process Technician's role in controlling factors that affect process systems under normal conditions and how to recognize abnormal process conditions. Pre-requisite: ICT 192 with a grade of C or greater or Permission of Instructor. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture
Attributes: Technical

ICT 196(3)  Course ID: 016369
Process Technology Operations  
Introduces the student to the field of operations within the process industry. Utilizes existing knowledge of equipment, systems, and instrumentation to understand the operation of an entire unit as related to commissioning, normal startup, normal operations, normal shutdowns, turnarounds, and abnormal situations. Pre-requisite: ICT 192 with a grade of C or greater or Permission of Instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

ICT 200(4)  Course ID: 016370
Process Troubleshooting  
Focuses on solving problems and diagnosing causes using critical analysis and interpretation of films from various cultures. Explores the film's countries of origin and the cinematic impacts upon the society and the world. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: ENG 282
Attributes: Other

ICT 230(3)  Course ID: 000377
Health, Safety & Environmental Practices  
Basic principles of industrial health and safety are discussed including accident and loss prevention, safety legislation, safety documents, safety management practices, health and safety hazards and control, safe work practices, and fire / explosion hazards. Corresponding field exercises will be performed as appropriate with participating industry representatives. Environmental regulations and their ultimate impact on a chemical facility as regulations will be discussed. An environmental audit will be performed in the field at participating local industries. Lecture: 3 hours. Co-requisite: ICT 185, CHE 104 or 105, or consent of instructor.
Components: Lecture
Attributes: Technical

IDL Instructional Design and Learning

IDL 101(3)  Course ID: 007201
Introduction to Instructional Design and Learning Technology  
Provides an introduction to instructional design including the role of learning and training in an organization. This course introduces common types of learning including instructor-led training and eLearning. The course will also provide an overview of learning theory, common eLearning authoring tools, and careers in the design and creation of training. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IDL 110(3)  Course ID: 007202
Instructional Design I  
Provides an introduction to instructional systems design through an exploration of the ADDIE model. Students will design, develop, deliver, and evaluate training content for instructor-led learning. Pre-requisite: ENG 101 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 113(3)  Course ID: 007245
Introduction to Visual Communication for Learning  
Introduces students to the elements of visual communication and storytelling for the purpose of learning and external promotion. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 120(3)  Course ID: 007203
Facilitation Skills  
Introduces students to the skills and technology vital to course facilitation. Students will apply adult learning concepts in the role of course facilitator for classroom and online settings. Pre-requisite: IDL 101 and IDL 110 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 123(3)  Course ID: 007240
Multimedia Design and Development  
Introduces students to foundations of design and layout principles that enhance learning. Students will learn to use multimedia in an instructional context, including learning activities, and other forms of multimedia. This course also includes an overview of the course development process. Pre-requisite: IDL 101 and IDL 110 or consent of instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 130(3)  Course ID: 007246
Technical Writing for Instructional Design  
Focuses on the design and development of technical training and documentation. Students learn how performance outcomes, intended audience, types of content, and types of deliverables impact technical writing. Presentation strategies for content are covered. An overview of tools for technical writing is also provided. Pre-requisite: IDL 101 and IDL 110 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 147(3)  Course ID: 007205  eLearning Development I: Rapid Authoring Tools  
Provides an overview of eLearning development tools for the development of courses including learning activities. Particular emphasis will be given to rapid authoring tools. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 203(3)  Course ID: 007247
Designing in Client Applications  
Focuses on designing with common client software applications such as word processing, presentation, and spreadsheets. Students will learn to apply visual communication principles to these tools for the purpose of creating training materials and templates. Pre-requisite: CIT 130 and ICT 113 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 207(3)  Course ID: 007206  eLearning Development II: HTML, CSS, and JavaScript  
Covers HTML, CSS, and JavaScript for the development of web pages and web sites. Particular emphasis will be given to the use of these technologies for eLearning. Pre-requisite: IDL 147 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 210(3)  Course ID: 007207
Instructional Design II  
Learn how Bloom's Taxonomy of Learning Domains translates into the planning, analysis, and design for the resolution of human performance problems. The ADDIE Model of instructional design will be explored within the context of eLearning. Pre-requisite: IDL 101 and IDL 110 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 213(3)  Course ID: 007248
Designing in Graphic Applications  
Provides basic-level training for designing with common graphic software applications. Students will learn to apply visual communication principles in the context of a variety of deliverables, including print and eLearning. Pre-requisite: IDL 113 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 217(3)  Course ID: 007208
Multimedia Development  
Introduces students to audio / video production and implementation for eLearning. Pre-requisite: IDL 123 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical

IDL 220(3)  Course ID: 007249
Business Management for Instructional Design and Learning Technology  
Provides an overview of business and the role of learning and training for an organization. This course includes an overview of financial and project management as well as the relationship of the training function to corporate goals and objectives. Pre-requisite: IDL 101 and IDL 110 or consent of the instructor. Lecture/Lab: 3 credits (60 contact hours).
Components: Lecture
Attributes: Technical
Course Descriptions

IDL 223(3) Course ID: 007250
Design Application
Provides practical application in which students will utilize their accumulated skills, knowledge of design software and fundamental principles in several real-life scenarios. Pre-requisite: IDL 203 and IDL 213 or consent of the instructor. Lecture: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

IDL 227(3) Course ID: 007209 eLearning Development III: Advanced Authoring Tools
Provides instruction in the development of elearning courses and learning activities, including scenarios and assessments. Particular emphasis will be given to more advanced authoring tools and functions. Pre-requisite: IDL 207 or consent of the instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

IDL 290(3) Course ID: 007252
Human Performance Consulting
Provides an overview of consulting for human performance issues. Students gain experience with problem solving, decision making, the application of learning skills, and the interpretation of information in a project context. Pre-requisite: IDL 210 or consent of the instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IDL 295(3) Course ID: 007253
Instructional Design III
Explored advanced topics in instructional design. Methods for increasing learner engagement for elearning courses will be shared. The students will take on the role of the instructional designer to design and develop advanced learning activities, including scenarios, learning games, and simulations. Pre-requisite: IDL 210 or consent of the instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

IDL 260(3) Course ID: 007254
Competency Models and Curriculum Design
Provides an overview of competency models, the definition of competencies through job task analysis and the development of curriculum models that support a competency-based training plan. Pre-requisite: IDL 210 or consent of the instructor. Lecture: 3.0 credit (45 contact hours).
Components: Lecture Attributes: Technical

IDL 298(3) Course ID: 007255
Experiential Learning in Instructional Design
Perform entry-level Instructional Design and Learning technology skills based on student’s chosen track. The learning plan will be discussed and agreed upon by the student, instructor and site supervisor. Pre-requisite: Permission of the instructor. Co-Op: 3.0 credits (180 contact hours).
Components: Co-Op Attributes: Technical

IDL 299(3) Course ID: 007256 Instructor Consent Required
Instructional Design Capstone
Provides an opportunity to assemble a comprehensive portfolio using skills learned throughout the Instructional Design and Learning Technology Program, including an assessment of the student’s overall skills related to their program specialization or track. Provides IDL students with a professional design portfolio to aid in the search for employment. Pre-requisite: Consent of the instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

IDT Interactive Digital Technology

IDT 100(3) Course ID: 005738
Fundamentals of Design
Introduces the basic drawing skills, elements and principles, color theory, terminology, and guidelines used to solve interactive design problems. Develops the ability and confidence to determine the appropriateness, feasibility and success of a potential design. Explores the integration of typography and visual elements using format structures. Pre-requisite or Co-requisite: Computer literacy course. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IDT 110(4) Course ID: 005739
3D Modeling & Animation I
Applies basic design principles to the solution of visual problems using elements of 3D design. Includes 3D coordinate systems, 3D models, and mathematical computations as they apply to geometric construction. Emphasizes a creative and critical approach to working in the medium of 3D computer animation. Pre-requisite or Co-requisite: Computer literacy course. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture Attributes: Technical

IDT 120(4) Course ID: 005740
Digital Design Tools
Includes the basic skills, terminology, file formats and specifications of visual design within the digital realm through the use of industry standard vector and raster software. Requires file management and project planning. Pre-requisite or Co-requisite: Computer literacy course. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture Attributes: Technical

IDT 170(3) Course ID: 005743
Project Strategy
Introduces marketing and design terms, information gathering, research, and data interpretation. Uses small groups to teach the challenges and rewards of creative collaboration. Includes group work to plan, prioritize, and set goals for a team project. Pre-requisite or Co-requisite: Computer literacy course. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IDT 210(3) Course ID: 005744
3D Modeling & Animation II
Covers advanced 3D modeling practices for artists and designers working with animation. Provides deeper knowledge of 3D modeling formats: Polygons, NURBS, and Subdivision Surfaces. Explores issues of integrating a model into animation production and application of advanced troubleshooting skills. Pre-requisite: IDT 110 with a grade of C or greater; or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC Interdisciplinary Early Childhood

IEC 101(3) Course ID: 004130
Orientation to Early Childhood Education
Introduces information related to designing appropriate environments and curricula for infants, toddlers, and preschoolers. Introduces the historical and current influences on early childhood education. Includes 20 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 102(3) Course ID: 004087
Foundations of Early Childhood Education
Focuses on creating an environment and curricula that support cognitive, physical, creative, language, social, and emotional development of infants, toddlers, and preschoolers. Students will engage in appropriate child assessment, ethical decision-making in the early childhood profession, and accommodations for children with disabilities. Includes 20 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 120(3) Course ID: 004131
Health, Safety and Nutrition
Examines the components and skills necessary for maintaining a healthy and safe environment for young children. Includes 10 hours of required field experience which may be waived by IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3 Credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 130(3) Course ID: 004132
Early Childhood Development
Addresses the physical, language, cognitive, social and emotional development of children beginning with conception. Includes methods of observation that are practiced during field experiences. Includes 10 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 170(3) Course ID: 005081
Observation and Assessment
Presents the process of observation, documentation, and assessment. Includes assessment skills, identification of appropriate methods and instruments, and linking results to planning, guidance, and instruction. Emphasizes recommended practices, ethical and legal responsibilities for educators, and the role of the family in the process. Includes 20 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 101 or IEC 102 or IEC 130 or permission of program coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 180(3) Course ID: 004088
Approaches to Early Childhood EducationCurriculum
Introduces theoretical perspectives for curriculum in early childhood programs. Teaches the design of curricula and examines the societal factors that impact programming for children. Includes 10 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 101 or IEC 102 or IEC 130 or permission of IEC program coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 190(3) Course ID: 004134
Applied Experiences in Early Childhood Education
Includes participation in supervised teaching experiences in early childhood settings. Covers observing, planning, implementing and assessing learning experiences based on developmentally appropriate practices. Any 100 level IEC course or permission of program coordinator. 3 credits (105 contact hours).
Components: Laboratory, Lecture Attributes: Technical
IEC 200(3) Course ID: 004133
Child Guidance
Examines appropriate methods for guiding children and promoting the development of prosocial behaviors. Includes 10 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 101 or IEC 130 or permission of program coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 210(3) Course ID: 005580
Families and Communities in Early Childhood Education
Examines community programs that focus on forming partnerships with families to support child development and family well-being. Builds an awareness of family in context of a diverse society to create respect, build reciprocal relationships, and empower families. Required: 10 hours of field experience. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 216(3) Course ID: 004135
Literacy and Language in IEC
Presents the interaction of language therapy and instruction techniques and the resulting effect on language and literacy development. Includes ten (10) hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 180 or permission of program coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 221(3) Course ID: 004136
Creative Expressions in IEC
Addresses the role of creativity as it relates to the development of young children. Studies a variety of art, music, drama, and movement experiences that encourage creative expression in young children. Includes the implementation of appropriate creative activities in a child-centered environment. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IEC 190 or IEC 291.). Pre-requisite: IEC 180 or consent of program coordinator. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 230(3) Course ID: 004569
Business Administration of ECE Programs
Introduces, establishing, operating and/or owning an early childhood program. Includes legal forms for early childhood programs, finance, accounting, insurance, governmental regulations and assistance, economics, marketing and management principles. 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 235(3) Course ID: 004137
Introduction to Inclusive Education
Presents the types of exceptionalities that occur in the development of children with an emphasis on state and federal laws that impact services. Introduces assessment, referral processes and sources, education plans, family service plans, center-based and home-based care, adaptations and assistive technology, and ethical considerations. Includes twenty (20) hours of required field experience, which may be waived by the IEC program coordinator if the student is concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 180 or permission of coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 240(3) Course ID: 004138
Administration of Early Childhood Education
Focuses on the administrative responsibilities of creating and implementing education programs for children and their families with an emphasis on the administrative, organizational, and legal responsibilities in operating early childhood programs. Includes ten (10) hours of required field experience. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 246(3) Course ID: 004139
Sciences and Math in IEC
Applies the concepts and principles of science, social studies, mathematics, and health in learning experiences for young children. Includes 10 hours of required field experience which may be waived by the IEC program coordinator if the student is concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 180 or permission of IEC program coordinator. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 250(3) Course ID: 004089
School Age Child Care
Provides the student with specialized knowledge, skills, and abilities for working with school age children. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 260(3) Course ID: 004140
Infant and Toddler Education and Programming
Examines the developmental and educational needs of children from birth to age three. Provides an opportunity for students to plan, prepare, and implement the care and educational environment for children birth to age three by integrating an understanding of the physical, social, emotional, and cognitive development with developmentally appropriate practices for each stage. Includes 10 hours of required field experience, which may be waived by the IEC program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 291). Pre-requisite: IEC 180 or consent of program coordinator. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IEC 291(3) Course ID: 004141
Instructor Consent Required
IECE Practicum/Cooperative Education Requires participation in supervised teaching experiences in early childhood settings where practical skills are applied. Includes observing, planning, implementing and assessing learning experiences based on developmentally appropriate practices. Required: Two hundred twenty-five (225) field hours of experience. Pre-requisite: Program Coordinator’s Approval. Practicum: 3 credits (225 contact hours/ratio 75:1).
Components: Practicum Attributes: Technical

IEC 299(1 - 3) Course ID: 004142
Department Consent Required
Special Topics in Early Childhood Education
An in-depth knowledge of a selected topic in early childhood education is the goal of this course. The topic of study may be the student’s choice per instructor’s approval or an issue or topic developed by an instructor for course presentation. Pre-requisite: Coordinator’s Approval. Lecture: 1-3 credits (15-45 contact hours).
Components: Lecture Attributes: Technical

IET Integrated Engineering Technology
IEC 102(2) Course ID: 007134
Preventive Maintenance
Introduces how routine work is done to keep equipment in good working order and to optimize its efficiency and accuracy. Addresses regular routine cleaning, lubricating, testing, checking for wear and tear and eventually replacing components to avoid breakdown. Introduces students to the various types and styles of predictive and preventative maintenance components, principles, and practices used in industrial applications. Lecture/Lab: 2.0 credits (40.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IEC 104(2) Course ID: 007137
Blueprint Reading/Schematics
Introduces the fundamental information in drafting necessary to retrieve read, manipulate and understand a mechanical part print. Instructs students to recognize, identify, describe, and relate the components used in schematics, along with their symbols and connections, to describe electrical, electronics, pneumatics, hydraulics, and piping circuits, as well as welding and joining symbols interpretation. Lecture/Lab: 2.0 credits (37.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IEC 107(3) Course ID: 007140
Basic Electricity/Electronics
Introduces the various elements of basic electricity including the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting sequential function charts, line drawings and line charts. Introduces the student to electrical measurement instruments, including digital and analog multimeters, clamp-on ammeters, megohmmeters, and the oscilloscope. Concentrates on control logic components and circuit function. Introduces the student to solid state devices and applications. Lecture/Lab: 3.0 credits (67.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IEC 108(5) Course ID: 007145
Mechanical Drive Systems
Introduces safety, maintenance techniques and procedures used to maintain industrial equipment, including industrial couplings, chains, sprockets, belts, bearings, shafts, brakes, clutches, gears and cams. Addresses the principles of power transmission, calculations of speed and force and how they affect a power transmission system. Lecture/Lab: 5.0 credits (112.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IEC 109(3) Course ID: 007152
Safety
Introduces OSHA and the OSHA regulations that apply to the auto manufacturing industry. Introduces safety rules and issues in the use of overhead cranes, hoists, rigging equipment, attachment components, calculating sling angle stresses, and safe lifting and turning loads. Provides the knowledge and skills necessary to help sustain life and minimize the consequences of injury or sudden illness to meet the various training needs of those in workplace, school or community settings. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IEC 110(4) Course ID: 007181
Welding and Fabrication
Introduces the power sources used in shielded metal arc welding (SMAW) and gas metal arc welding (GMAW), along with equipment and filler metals used to produce a welded joint and welding principles along with the metallurgy of steel and welding. Covers shielded metal arc welding safety and shielded metal arc welding processes including flat, horizontal, vertical, and overhead welding techniques. Presents the results of theory, safety practices, equipment and techniques required for gas metal arc welding including different transfer methods and position welding. Introduces oxy-fuel welding and cutting, including safety, setup and maintenance of oxy-fuel welding and cutting equipment. Includes cutting, brazing, and welding techniques. Lecture/Lab: 4.0 credits (100.5 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
IET 120(4) Course ID: 007186
Machine Tool Operations
Introduces machining operations, procedures and machines used by multi-skilled industrial maintenance technicians. Introduces the safe and correct operation of lathes, milling machines, drill presses, metal saws and hand and power tools. Requires students to work with various measuring and layout tools found in industrial environments. Lecture/Lab: 4.0 credits (102 credit hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 130(5) Course ID: 016096
Leam Manufacturing
Instructs the students in the basic concepts of a safety culture and hazard prediction training. Introduces the fundamental SS process, the Toyota Production System for Maintenance, the Toyota Problem Solving method, the Toyota Drive and Dedication model, and the Toyota Maintenance Reliability Process and Reliability Centered Maintenance Analysis. Lecture: 5.0 credits (75 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 201(6) Course ID: 007180
Electrohydraulics/Pneumatics
Explains the fundamental concepts of fluid power and electro-fluid power systems. Covers the principles of fluid power, calculations of physical properties of fluids and their ability to do work. Introduces the various fluid power components, symbols, circuits. Introduces troubleshooting of fluid power components and systems with an emphasis on safety. Addresses fluids, filters, reservoirs, piping, pumps, actuators, accumulators, control valves, and combination circuits. Lecture/Lab: 6.0 credits (120 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 203(5) Course ID: 007172
Programmable Logic Controllers
Introduces Programmable Logic Controllers (PLC) and elements needed for an automated industrial control system. Introduces memory and project organization within a PLC and provides instruction in basic numbering systems, computer and PLC terminology. Introduces PLC control functions, program structures, language standards, wiring and troubleshooting methods, as well as real world communications. Requires the student to program a PLC which may include a combination of ladder logic, structured text, sequential function chart and/or function block languages. Includes various protocols of industrial communications used between PLC controlled machines, PLC to PLC, PLC to computer, and computer to computer. Lecture/Lab: 5.0 credits (109.5 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 205(4) Course ID: 007167
Robot Maintenance
Introduces robotics in regard to industrial robotic safety standards, applications, types of classes for industrial robots, basic system components, robotic motion concepts, key programming techniques, definitions and the common terms associated with computer integrated manufacturing (CIM) as it relates to robotic cells. Instructs students on the mastering concepts of preventive maintenance techniques required for a robot and their backup systems in addition to recovery procedures needed to interpret robot error codes and perform a safe recovery start up procedure on robotics equipment, as well as integrating robotic applications in a PLC-controlled, automated system. Lecture/Lab: 4.0 credits (82.5 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 206(5) Course ID: 007161
Controls and Instrumentation
Covers the diversity of control devices including; theory of operation, applications in automation control and troubleshooting and repair. Introduces identification, installation, replacement, and troubleshooting of automation controller circuit boards and modules. Includes the installation, maintenance and troubleshooting of common input devices. Provides for discussion of methods of motor controls including on-off, proportional, integral, and derivative including PID loop tuning and quality. Covers automation output devices including AC, DC, and servo motors, variable speed drives, relays, motor starters and sizing of components for various applications. Lecture/Lab: 5.0 credits (105 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

IET 102(0.7) Course ID: 007135
Basic Preventive Maintenance
Introduces how routine work is done to keep equipment in good working order and to optimize its efficiency and accuracy. Addresses regular routine cleaning, lubricating, testing, checking for wear and tear and eventually replacing components to avoid breakdown. Lecture/Lab: 0.7 credits (15 contact hours).

Components: Lecture

IET 1022(1.3) Course ID: 007136
Advanced Technologies
Introduces various types and styles of predictive and preventive maintenance components, principles, and practices used in industrial applications. Lecture/Lab: 2.5 credits (50 contact hours).

Components: Lecture

IET 1041(0.9) Course ID: 007138
Drafing Fundamentals
Introduces the fundamental information in drafting necessary to retrieve read, manipulate and understand a mechanical part print. Requires student to be able to identify different types of prints as well as being able to analyze them. Lecture/Lab: 0.9 credits (16.5 contact hours).

Components: Lecture

IET 1042(1.1) Course ID: 007139
Orthographic Interpretation
Instructs the learner to recognize, identify, describe, and relate the components used in schematics, along with their symbols and connectors, to describe electrical, electronics, pneumatics, hydraulics, and piping circuits, as well as welding and joining symbols interpretation. Lecture/Lab: 1.1 credits (21 contact hours).

Components: Lecture

IET 1071(1) Course ID: 007141
Intro to Basic Electricity
Introduces the various elements of basic electricity including the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting sequential function charts, line drawings and time charts. Lecture/Lab: 1.0 credit (20 contact hours).

Components: Lecture

IET 1072(0.3) Course ID: 007142
Instruments
Introduces electrical measurement instruments, including digital and analog multimeters, clamp-on ammeters, megohmmeters, and the oscilloscope. Requires hands-on lab time spent with each device type. Emphasizes safe measuring techniques. Covers additional devices such as pressure gauges, chart recorders, heat sensors and chain stretch monitor. Lecture/Lab: 0.3 credits (7.5 contact hours).

Components: Lecture

IET 1073(1) Course ID: 007143
Control Circuits & Components
Concentrates on control logic components and circuit function. Examines combinational and sequential ladder logic designs with great attention to reliability of function. Requires construction of various circuits that demonstrate key component functionality concepts. Requires troubleshooting using analytical techniques, multimeters, chart recorders, and oscilloscopes. Lecture/Lab: 1.0 credit (22.5 contact hours).

Components: Lecture

IET 1074(0.7) Course ID: 007144
Solid State Devices
Introduces solid state devices and applications. Covers semiconductor theory and operational characteristics of devices such as the diode, bipolar junction transistor (BJT) and field effect transistor (FET). Examines the basic DC power supply in the lab. Addresses concepts such as polarity, biasing, rectification and amplification. Includes discussion of camera-type vision systems, barcode readers and laser etchers. Lecture/Lab: 0.7 credits (16.5 contact hours).

Components: Lecture

IET 1081(0.5) Course ID: 007146
Basic Mechanical Power Systems
Introduces the basic concepts of mechanical power transmission. Addresses the principles of power transmission, calculations of speed and force and how they affect a power transmission systems ability to perform work. Emphasizes the basics of mechanical drawing, safe work practices for working around machinery, common hand tools associated with maintenance work and some of the more common terms and definitions. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture

IET 1082(0.3) Course ID: 007147
Flexible Drives
Introduces various types and styles of flexible belt and chain drives, including V-belts, chains, sprockets, and components. Lecture/Lab: 0.3 credit (7.5 contact hours).

Components: Lecture

IET 1083(2.2) Course ID: 007148
Couplings and Alignment
Introduces types and functions of couplings used in industrial power transmissions, including how to install, align, and maintain shaft couplings. Lecture/Lab: 2.2 credits (55.5 contact hours).

Components: Lecture

IET 1084(1.1) Course ID: 007149
Bearings, Shafts, and Seals
Introduces basic types and functions of bearings, shafts and seals found on mechanical drive systems commonly used in industry. Lecture/Lab: 1.1 credits (24 contact hours).

Components: Lecture

IET 1085(0.2) Course ID: 007150
Brakes and Clutches
Introduces various types and styles of braking systems and clutch components used in industrial applications. Lecture/Lab: 0.2 credits (4.5 contact hours).

Components: Lecture

IET 1086(0.7) Course ID: 007151
Gears and Cams
Introduces various types and styles of gears and cam follower components used in industrial applications. Lecture/Lab: 0.7 credits (15.5 contact hours).

Components: Lecture

IET 1091(0.7) Course ID: 007153
Basic OSHA Safety
Introduces OSHA and the OSHA regulations that apply to the auto manufacturing industry. Lecture/Lab: 0.7 credits (12 contact hours).

Components: Lecture

IET 1092(0.4) Course ID: 007154
Hoists and Cranes
Introduces the basic concepts and safety rules and issues related to the use of overhead cranes and hoists. Lecture/Lab: 0.4 credit (6 contact hours).

Components: Lecture

IET 1093(1.2) Course ID: 007155
Rigging Awareness & Fundamentals
Introduces the basic concepts and safety rules and issues related to the use of rigging equipment, attachment components, calculating sling angle stresses, and safe lifting and turning loads. Lecture/Lab: 1.2 credits (25.5 contact hours).

Components: Lecture

IET 1094(1.0) Course ID: 007156
Lifting and Turning Loads
Introduces the fundamental concepts and safety rules and issues related to the use of rigging equipment, attachment components, calculating sling angle stresses, and safe lifting and turning loads. Lecture/Lab: 1.2 credits (25.5 contact hours).

Components: Lecture

313

Course Descriptions
IET 1094(0.7)  Course ID: 007156  
First Aid, CPR, & AED  
Provides knowledge and skills necessary to help sustain life and minimize the consequences of injury or sudden illness until advanced medical help arrives. Includes first aid, CPR and AED lessons to meet the various training needs of those in workplace, school or community settings. Lecture/Lab: 0.7 credits (16.5 contact hours).  
Components: Lecture

IET 1110(0.5)  Course ID: 007182  
Introduction to Arc Welding  
Introduces the power sources used in shielded metal arc welding (SMAW) and gas metal arc welding (GMAW), along with equipment and filler metals used to produce a welded joint and welding principles along with the metallurgy of steel and welding. Lecture: 0.5 credits (7.5 contact hours).  
Components: Lecture

IET 1102(1.6)  Course ID: 007183  
SMAW/Stick Welding  
Introduction of the skills necessary to enable the student to become a skilled stick welder in industry. Lecture/Lab: 1.6 credits (45 contact hours).  
Components: Lecture

IET 1103(0.9)  Course ID: 007184  
Gas Metal Arc Welding  
Introduces oxy-fuel welding and cutting, including safety, setup and maintenance of oxy-fuel welding and cutting equipment. Includes welding, brazing, and welding techniques. Lecture/Lab: 1.0 credits (25.5 contact hours).  
Components: Lecture

IET 1104(1)  Course ID: 007185  
Welding and Fabrication  
Introduces basic oxy-fuel welding and cutting, including safety, setup, and maintenance of oxy-fuel welding and cutting equipment. Includes welding, brazing, and welding techniques. Lecture/Lab: 1.0 credits (25.5 contact hours).  
Components: Lecture

IET 1201(0.1)  Course ID: 007187  
Intro to Machining Operations  
Introduces machining operations. Focuses on the safe application of the most common machining procedures and machines used by multi-skilled industrial maintenance technicians. Lecture: 0.1 credits (1.5 contact hours).  
Components: Lecture

IET 1202(0.6)  Course ID: 007188  
Turning  
Introduces safe operation of lathes, primarily engine and tool room lathes. Addresses various types of lathes used in industry, their component parts, and associated safety precautions. Emphasizes the most common lathe operations required by multi-skilled industrial maintenance technicians. Lecture/Lab: 0.6 credits (16.5 contact hours).  
Components: Lecture

IET 1203(0.8)  Course ID: 007189  
Milling  
Introduces safe operation of milling machines, primarily vertical milling machines. Addresses the various types of milling machines used in industry, their component parts, and associated safety precautions. Emphasizes the most common milling operations required by multi-skilled industrial maintenance technicians. Lecture/Lab: 0.8 credits (22.5 contact hours).  
Components: Lecture

IET 1204(0.5)  Course ID: 007190  
Drill Press  
Introduces safe operation of drill presses, primarily the sensitive drill presses. Addresses the various types of drilling machines used in industry, their component parts, and associated safety precautions. Emphasizes the most common drilling operations required by multi-skilled industrial maintenance technicians. Lecture/Lab: 0.5 credits (13.5 contact hours).  
Components: Lecture

IET 1205(0.4)  Course ID: 007191  
Saws  
Introduces safe operation of saws, primarily the horizontal and contour band saw. Addresses the various types of metal saws used in industry, their component parts, and associated safety precautions. Emphasizes the most common sawing operations required by multi-skilled industrial maintenance technicians. Lecture/Lab: 0.4 credits (10.5 contact hours).  
Components: Lecture

IET 1206(0.7)  Course ID: 007192  
Hand and Power Tools  
Introduces safe and effective use of hand and power tools. Emphasizes the application of the most common tools used by multi-skilled industrial maintenance technicians. Lecture/Lab: 0.7 credits (16.5 contact hours).  
Components: Lecture

IET 1301(1)  Course ID: 016097  
Safety Culture  
Introduces the importance of cultivating daily safe work habits and the predictable negative results of not being safety conscious in the work place. Instructs the students in basic safety culture and prepares them to participate in, conduct, and lead safety walk-throughs. Introduces the student to Kiken Yobi Training (KYT) or Hazard Prediction Training. Prepares the student to conduct risk assessment activities, construct safety boards, and formulate individual safety commitments. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture

IET 1302(1)  Course ID: 016098  
5S  
Introduces the fundamental 5S process involving the five step progression described by the Japanese words Seiri, Seiton, Seiso, Seiketsu, and Shitsuke. Instructs the students in the sequence involving classifying and sorting, ordering and aligning, cleaning and sweeping up, standardizing, and developing a process of sustainable practice in the workplace. Fosters the development of a workplace organization in which safety and efficiency are always paramount. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture

IET 1303(1)  Course ID: 016099  
Total Production Management  
Instructs the student in the concepts of value-added product, maintenance value-added product, value-added work and necessary work. Explains the process of how Toyota earns profit. Demonstrates the Toyota Production System for Maintenance using the House framework. Describes and explains the three Ms and the seven Mudas and their relationship to maintenance and production. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture

IET 1305(1)  Course ID: 016101  
Maintenance Reliability  
Introduces the Toyota Maintenance Reliability training. Describes the difference between corrective maintenance and preventive maintenance. Breaks down proactive maintenance and the underlying tools and constituent processes. Instructs the students in the various individual units in a system and the steps in evaluating failure mode risks and countermeasures. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture

IET 2011(1)  Course ID: 007179  
Electrohydraulics/Pneumatics Fundamentals  
Explains the fundamental concepts of fluid power. Covers the principles of fluid power, calculations of physical properties of fluids and their ability to do work. Introduces the various fluid power components, symbols, circuits. Introduces troubleshooting of fluid power components and systems with an emphasis on safety. Lecture: 1.0 credit (15 contact hours).  
Components: Lecture

IET 2012(0.7)  Course ID: 007178  
Reservoirs, Fluids, Filters  
Introduces functions of hydraulic/pneumatic reservoirs and reservoir component. Addresses properties and requirements for fluids, as well as how filters are used to maintain cleanliness in fluid power systems. Lecture/Lab: 0.7 credits (13.5 contact hours).  
Components: Lecture

IET 2013(0.4)  Course ID: 007177  
Hose, Piping, and Tubing  
Addresses various types of conductors that carry fluid through a system. Focuses on fittings, hose, and steel tubing used in fluid power systems. Lecture/Lab: 0.4 credits (9 contact hours).  
Components: Lecture

IET 2014(0.8)  Course ID: 007176  
Pumps, Actuators, Accumulators  
Introduces various types of pumps, actuators and accumulators used in fluid power systems which create flow, change fluid power into mechanical power and devises that store energy in the system. Lecture/Lab: 0.8 credits (16.5 contact hours).  
Components: Lecture

IET 2015(1.3)  Course ID: 007175  
Valves  
Explores hydraulic and pneumatic directional control, pressure control and flow control valves. Lecture/Lab: 1.3 credits (28.5 contact hours).  
Components: Lecture

IET 2016(0.9)  Course ID: 007174  
Electrohydraulics/Pneumatics  
Introduces the fundamentals of electro-fluid power, including basic electrical principles, basic fluid power principles, electro-fluid power limit devices, common electro-fluid power troubleshooting principles and practices. Lecture/Lab: 0.9 credits (18 contact hours).  
Components: Lecture

IET 2017(0.9)  Course ID: 007173  
Systems Troubleshooting  
Introduces troubleshooting of hydraulic and pneumatic systems, including tracing out systems, isolating problems, safety testing and inspecting systems that use combination circuits and combined electro-hydraulic/pneumatic systems. Lecture/Lab: 0.9 credits (19.5 contact hours).  
Components: Lecture

IET 2021(0.6)  Course ID: 007171  
Introduction to PLCs  
Introduces memory and project organization within a PLC processor, the installation, wiring and configuration of I/O modules, as well as how to start a new project. Lecture/ Lab: 1.4 credits (31.5 contact hours).  
Components: Lecture

IET 2032(1.4)  Course ID: 007170  
Hardware & Software  
Introduces memory and project organization within a PLC processor, the installation, wiring and configuration of I/O modules, as well as how to start a new project. Lecture/Lab: 1.4 credits (31.5 contact hours).  
Components: Lecture

IET 2033(1.5)  Course ID: 007169  
Programming PLCs  
Introduces various elements of programming PLCs. Addresses the basic elements of PLC programming and routine. Requires student to program using ladder logic, structured text, sequential function chart, and function block languages. Lecture/Lab: 1.5 credits (34.5 contact hours).  
Components: Lecture

IET 2042(1.5)  Course ID: 007168  
PLC Communication  
Introduces various elements of industrial communications using PLCs. Addresses common types of control communications in an industrial environment. Includes discussion of PLC addressing used in communications. Lecture/Lab: 1.5 credits (34.5 contact hours).  
Components: Lecture
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Course Type</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET 2051(0.6)</td>
<td>Introduction to Robotics</td>
<td>Lecture</td>
<td>0.6</td>
<td>18</td>
<td>Technical</td>
</tr>
<tr>
<td>IET 2052(1.5)</td>
<td>Programming/Editing Robots</td>
<td>Lecture</td>
<td>1.5</td>
<td>45</td>
<td>Technical</td>
</tr>
<tr>
<td>IET 2053(0.2)</td>
<td>Robot and Preventive Maintenance</td>
<td>Lecture</td>
<td>0.2</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>IET 2054(1.1)</td>
<td>Error Codes &amp; Troubleshooting</td>
<td>Lecture</td>
<td>1.1</td>
<td>22.5</td>
<td></td>
</tr>
<tr>
<td>IET 2055(0.8)</td>
<td>Integration of PLCs &amp; Robots</td>
<td>Lecture</td>
<td>0.8</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>IET 2061(0.5)</td>
<td>Fundamentals</td>
<td>Lecture</td>
<td>0.5</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>IET 2062(0.9)</td>
<td>Sensors and Photoeyes</td>
<td>Lecture</td>
<td>0.9</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>IET 2063(0.6)</td>
<td>Calibration and Loop Training</td>
<td>Lecture</td>
<td>0.6</td>
<td>13.5</td>
<td></td>
</tr>
<tr>
<td>IET 2064(3)</td>
<td>Final Control Elements</td>
<td>Lecture</td>
<td>3.0</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>
IMD 117(3) Course ID: 004767
Keyboarding and Basic Word Processing
Students use a microcomputer and software to develop proper techniques of touch keyboarding. Basic word processing skills are integrated with a thorough study of form, style, and arrangement of business documents. Speed, accuracy and control are emphasized. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Computer Literacy, Technical

IMD 124(3) Course ID: 016264
Introduction to Game Development
Presents an overview of the game development process including game development history, platforms, goals, genres, players, story and character development, gameplay, levels, interfaces, audio, development processes, development team roles, marketing, and maintenance. Provides opportunities to play and analyze games and to complete portions of game designs. Pre-requisite: CIT105 OR IMD100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Course Equivalents: CIT 124 Attributes: Technical

IMD 126(3) Course ID: 004781
Introduction to Desktop Publishing
The use of microcomputers for designing and producing various publications is introduced. Hands-on experience is provided in using desktop publishing software and a laser printer to produce high-resolution publications, such as flyers, brochures, business forms, and newsletters. Students are also introduced to basic design techniques, type and graphics layout, and the related terminology. Pre-requisite: IMD 100 or equivalent skills. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 127(3) Course ID: 005044
Vector Design with Adobe Illustrator
In this course, students will be introduced to and develop vector (line-based) graphics using industry-standard application(s). Topics covered will include examining the theory behind vector graphics, investigating the advertising and print industry's use of this type of graphic, creation of graphics from simple to increasingly complex, as well as development of a portfolio of vector art. Pre-requisite: IMD 115 or concurrent or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 128(3) Course ID: 005045
Raster Design with Adobe Photoshop
Introduces raster (photo or pixel-based) graphics using industry standard application(s). Covers the theory behind raster graphics, investigating the advertising and print industries' use of this type of graphic, creation and manipulation of raster-based graphics from simple to increasingly complex, the use of Photoshop in web design, video editing and compositing with Photoshop, as well as development of a portfolio of raster art and photo editing and manipulation samples. Pre-requisite: IMD 100 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 180(3) Course ID: 004786
Intermediate Web Design
Utilizes web design image creation software, used to create professional, aesthetically pleasing, effective, and fully-functional websites. Includes creation of complete websites using industry-standard software; create web graphics such as buttons, borders, and banners; and a comprehensive examination of web design fundamentals. Identifies fundamentals including website layout, navigation, font usage, color schemes, site architecture, with emphasis on creating visually-pleasing websites that effectively communicate the desired content for employers and clients. Pre-requisite: IMD 133. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 210(3) Course ID: 004787
Microsoft Office Applications
Presents advanced skills utilizing Microsoft Office applications for the creation, manipulation, and integration of information. Examines applications including word processing, spreadsheet, database management, and presentation. Pre-requisite: IMD 100 OR Digital Literacy Course OR Instructor Consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 221(3) Course ID: 016265
Computer Graphics
Introduces basic computer graphics with an emphasis on graphics for game design. Teaches students in practical aspects of graphics such as color, ray tracing, rasterization, shading, mapping, light, and shadow. Pre-requisite: CIT 105 OR IMD100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Course Equivalents: CIT 221 Attributes: Technical

IMD 222(3) Course ID: 016266
3D Modeling for Video Games
Teaches students in the use of industry-standard 3D modeling software specific to the video-game industry. Emphasizes both architectural and character modeling. Familiarizes the student with key 3D modeling concepts and methods, workflow, and the creation and preparation of 3D assets for use specifically in a video-game application. Pre-requisite: CIT 221 OR IMD 221 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Course Equivalents: CIT 222 Attributes: Technical

IMD 223(3) Course ID: 016267
3D Animation for Video Games
Introduces students to the specialized process of animating 3D assets for gaming applications. Familiarizes students with animating both organic and inorganic assets, lighting scenes, rendering and producing cut-scenes, and preparing character assets for in-game motion. Allows students to acquire the necessary skills and techniques to integrate audio with their animations using basic sound-engineering software and processes. 3 credits (45 contact hours).
Components: Lecture Course Equivalents: CIT 223 Attributes: Technical

IMD 226(3) Course ID: 004791
Advanced Desktop Publishing
Requires the demonstration of vital pre-press and print knowledge necessary for successful output of commercial graphic design projects. Emphasizes raster image creation, editing, and preparation for output, offset printing processes, color separations, spot color usage and preparation, vector graphic usage, font usages and standards, PDF document creation and preparation, and advanced desktop publishing techniques. Pre-requisite: IMD 126 and IMD 127 and IMD 128. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 228(3) Course ID: 006833
Advanced Photoshop
Introduces advanced techniques for manipulating and editing raster (photo or pixel-based) graphics using industry-standard application(s). Examines new software features, advanced methods for file optimization and color correction, making complex selections and combining multiple images to create works of art, as well as development of a professional portfolio of raster art and photo editing and manipulation samples. Pre-requisite: IMD 115 and IMD 128. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 229(3) Course ID: 006886
Advanced Illustrator
Introduces advanced techniques for the creation of vector-based (Bezier/geometry-based) artwork, including techniques for high-end illustrative and artistic projects. Emphasizes working with painterly and naturalistic brushes, photo-realistic vector-based image creation, advanced gradient mesh usage, advanced 3D techniques, integration with Adobe Flash, advanced workflow procedures, and other techniques intended for intermediate to advanced Adobe Illustrator users. Pre-requisite: IMD 127. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 230(3) Course ID: 004793
Advanced Web Design
Explores existing and emerging web technologies through the role of web designers. Covers topics and issues to include modification of prewritten scripts and applets as well as analysis of current client- and server-side technologies including PHP, MySQL and XML. Students will conclude the course via the creation of a comprehensive, database-driven dynamic website utilizing current client- and server-side technologies including PHP, MySQL, and XML. Pre-requisite: IMD 180 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 232(3) Course ID: 004794
Web Design with Adobe Dreamweaver
Utilizes an advanced web authoring software application for design and development. Uses a professional WYSIWYG (what-you-see-is-what-you-get) editor to develop and create web pages, automate production, and manage and maintain entire websites. Builds XHTML, CSS, and web development knowledge to customize features and integrate applications. Pre-requisite: IMD 133 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 235(3) Course ID: 004795
Advanced Word Processing
Students will learn current word processing software from intermediate skills through advanced utilities. Topics include producing customized documents, enhancing the visual display of documents, creating customized desktop publishing documents, organizing text in documents using advanced features, and integrating data utilizing various applications. Emphasis will be on mastering the software for optimal use. Pre-requisite: IMD 210 or CIT 130, or equivalent skills. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical
IMD 240(3) Course ID: 004796
Multimedia Development for the Web
Introduces students to the design and delivery of interactive and media-rich websites using professional, industry-standard software and web development technologies. Covers creating and integrating animation into web design, along with developing increasing interactivity and adding audio and video into a website. Covers publishing and integration with other web development applications. Pre-requisite: IMD 133 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IMD 250(3) Course ID: 005050
Digital Video Editing I
Covers the essentials of digital video within cinematic arts, including logging, capturing, editing, and basic composting. Students will capture and edit digital video using industry-standard desktop video software and export to DVD and the Internet for use in entertainment, documentary films, commercials, and newscasts. Students will learn to storyboard, plan, and produce a digital video project from conception to final packaging. Pre-requisite: IMD 100 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IMD 255(3) Course ID: 007327
Digital Video Editing II
Covers advanced techniques within cinematic arts and editing such as multi-cam editing, color correction, advanced composting, basic audio editing and production, alpha channels, and special effects. Building on Digital Video Editing I, students will also focus on creating storyboards, quicker workflows, and trim editing using an industry-standard software program. Increased levels of pacing, timing, continuity, and visual aesthetics are emphasized. Students will shoot and edit their own video footage in this course. Cameras will be provided. Pre-requisite: IMD 250 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IMD 258(3) Course ID: 007328
Visual Effects for Video
Covers the creation of visual effects in cinematic arts including basic animation with text and 2D objects and 3D object creation and animation using an industry-standard visual effects software program. Students will focus on animating layers and working with masks, distortion, color correction, motion stabilization, and particle simulation. Projects will be exported and packaged for the web and DVD. Pre-requisite: IMD 250 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

IMD 270(3) Course ID: 005214
Professional Practices
Designed to assist students develop strategies for entering the Information Management & Design profession by editing and refining portfolios and creating correspondence to meet professional standards, designing resumes and other self-promotional materials, developing job search strategy, practicing interview techniques, and professional presentations. Pre-requisite: sophomore status & preparing for job search. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Information Management and Design

IMD 271(1 - 3) Course ID: 004797
Instructor Consent Required
Internship
Requires a minimum of 40 clock hours per credit hour of on-the-job experience to include a learning plan agreed upon by the student, instructor, and site supervisor. Pre-requisite: Consent of Instructor, 2.0 GPA, IMD 270 and the completion of 9 additional credit hours of IMD course work. Practicum: 1.0 -3.0 credits (40-120 contact hours).
Components: Practicum
Attributes: Technical

IMD 272(3) Course ID: 016288
Game Design Theory
Introduces students to the experience-oriented standards and techniques of gaming on a digital platform. Includes hands-on conceptualization and writing of a game created by the student. Emphasizes creativity, player experiences and motivations, styles of play, types of games, character creation, world creation, and story-driven narrative within a video game. Requires students to write a complete and industry-quality Game Design Document as a final project in the course which can serve as the basis for a fully-produced, playable video game in CIT/IMD273. Pre-requisite: CIT124 OR IMD 124 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: CIT 272
Attributes: Technical

IMD 273(3) Course ID: 016289
Game Production
Provides students with the opportunity to produce a fully playable 3D video game using assets and materials created in previous courses; employs an industry-standard game engine to meld 3D content, audio, narrative, character, and environment into a professional and enjoyable video game experience. Pre-requisite: (CIT 222 OR IMD 222) AND (CIT 272 OR IMD 272) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: CIT 273
Attributes: Technical

IMD 274(3) Course ID: 016270
Seminar in Game Development
Encompasses the three phases of game design and development: conception, creation, and marketing in this project-oriented seminar. Requires participation in class presentations, individual and group projects, development of a game, and a portfolio. Pre-requisite: (CIT 223 OR IMD 223) AND (CIT 273 OR IMD 273) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Course Equivalents: CIT 274
Attributes: Technical

IMD 275(3) Course ID: 004798
Information Management and Communications
Introduces management principles and techniques as they apply to various types of businesses. Includes research emphasis on information management, team concepts, personnel management, communications and business plans. Explores concepts within freelance, small business, and corporate entities. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IMD 277(3) Course ID: 006837
Typography
Explores the use of typography in the context of graphic design and discover the importance of type as a tool for visual problem solving and communication. Explores origins of typography, font usage, the anatomy and different kinds of type, software used for type manipulation, and how basic principles and elements of design (color, hierarchy, form, rhythm, etc.) are applied to typography. Requires the development of portfolio of individual typography-based designs. Pre-requisite: (IMD 115 and IMD 126 and IMD 172) and consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IMD 280(3) Course ID: 004799
Portfolio Practicum: Graphic Design
Provides an opportunity to assemble a comprehensive graphic design portfolio using skills learned within the IMD Graphic Design core courses, which will assess students overall graphic design skills. Provides IMD students with a professional design portfolio to aid in the search for employment. Provides the capstone for students choosing the graphics option. Uses presentation, vector, raster, and desktop publishing software to create design-intensive portfolio pieces. Pre-requisite: (IMD 127 and IMD 128 and IMD 185 and IMD 226) or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
Components: Laboratory, Lecture
Attributes: Technical

**IMG 101(4)** Course ID: 004295

**Clinical I**
Provides experience in equipment operation, patient care technical factors for radiographic exposures, and in positioning patients accurately for radiographic exams.
Pre-requisite: Admission to the Radiography Program and BIO 139 with a minimum grade of C. Co-requisite: IMG 100. Clinical: 4.0 credits (240 contact hours).

Components: Clinical
Attributes: Technical

**IMG 104(2)** Course ID: 005040

**Introduction to Radiography**
Introduces radiography with emphasis on the historical perspective, professional requirements, health care environment, cultural diversity, and legal and ethical considerations. Incorporates basic tube function and radiation protection. Pre-requisite: BIO 137 with a minimum grade of C. Pre-requisite or Co-requisite: BIO 139. If taken as a pre-requisite, a minimum grade of C is required. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 106(2)** Course ID: 005065

**Patient Care in Radiography**
Examines basic concepts of care relative to patient physical circumstances as well as to the needs of patient and family. Includes communication skills, safety considerations, and infection control. Pre-requisite: BIO 137 with a minimum grade of C. Pre-requisite or Co-requisite: BIO 139. If taken as a pre-requisite, a minimum grade of C is required. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 108(4)** Course ID: 005066

**Radiographic Procedures I**
Covers the principles of human anatomy as applied to fundamental radiographic procedures. Includes exposure factors and patient positioning relative to different age groups and to upper and lower extremities, bony and visceral thorax, and abdomen with consideration given to the evaluation of optimal diagnostic images. Pre-requisite: BIO 137 with a minimum grade of C. Pre-requisite or Co-requisite: BIO 139. If taken as a pre-requisite, a minimum grade of C is required. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 109(1)** Course ID: 005067

**Clinical Practice I**
Provides structured clinical experience through sequential competency-based assignments that focus on the upper and lower extremities, bony and visceral thorax, and abdomen. Pre-requisite: BIO 137 with a minimum grade of C. Pre-requisite or Co-requisite: BIO 139. If taken as a pre-requisite, a minimum grade of C is required. Clinical: 1.0 credit (60 contact hours).

Components: Clinical
Attributes: Technical

**IMG 110(7)** Course ID: 004296

**Radiography II**
Emphasizes radiographic imaging, related technical factors, and accessories. Applies human anatomy principles to basic radiographic procedures. Includes study of tomography and procedures used for the basic and complex skulls, vertebral column, alimentary canal, and the biliary and urinary systems. Considers special radiographic examinations and equipment. Pre-requisite: IMG 100 with a minimum grade of C. Co-requisite: IMG 111. Lecture: 6.0 credits (90 contact hours). Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 111(4)** Course ID: 004297

**Clinical II**
Continues IMG 101 to provide experience with equipment operation, patient care, and procedures for accurate radiographic exposures. Encourages increasing responsibility and autonomy as students build on previously-learned procedures. Pre-requisite: IMG 101 with a grade of C or greater. Co-requisite: IMG 110. Clinical: 4.0 credits (240 contact hours).

Components: Clinical
Attributes: Technical

**IMG 112(4)** Course ID: 005068

**Image Production & Acquisition**
Provides knowledge-base related to image production and acquisition, and practical experience with digital imaging systems. Pre-requisite: IMG 104 and IMG 106 and IMG 108 and IMG 109) with a minimum grade of C. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 114(2)** Course ID: 005069

**Advanced Patient Care in Radiography**
Examines the basic concepts of medical emergency response and pharmacology related to radiography. Addresses informed consent practices and the use of imaging contrast agents, venipuncture and IV therapy. Includes familiarization to professional practice standards. Pre-requisite: (IMG 104 and IMG 106 and IMG 108 and IMG 109) with a minimum grade of C. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 116(4)** Course ID: 005070

**Radiographic Procedures II**
Continues procedures instruction with emphasis on the vertebral column, cranium, gastrointestinal, urinary, and special radiographic procedures. Focuses on the evaluation of optimal diagnostic images. Pre-requisite: (IMG 104 and IMG 106 and IMG 108 and IMG 109) with a minimum grade of C. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 118(4)** Course ID: 005071

**Clinical Practice II**
Provides structured clinical experience through competency-based assignments focusing on the upper and lower extremities, bony and visceral thorax, and abdomen. Pre-requisite: BIO 137 with a minimum grade of C. Pre-requisite or Co-requisite: BIO 139. If taken as a pre-requisite, a minimum grade of C is required. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Clinical
Attributes: Technical

**IMG 119(3)** Course ID: 005072

**Clinical Practice III**
Provides clinical experience through competency-based assignments for upper and lower extremities, bony and visceral thorax, abdomen, vertebral column, cranium, contrast studies of the digestive, urinary, and central nervous systems, and arteriography. Pre-requisite: (IMG 114 and IMG 116 and IMG 118 and IMG 119) with a minimum grade of C. Clinical: 3.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

**IMG 201(4)** Course ID: 004299

**Radiography IV**
Covers theories and principles involved in the production, control, and application of ionizing radiation in radiography. Emphasizes the development of a quality assurance program, quality control testing of radiographic equipment, and image intensification. Pre-requisite: IMG 201 with a grade of C or greater. Co-requisite: IMG 211. Lecture: 3.0 credit (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 211(6)** Course ID: 004300

**Clinical IV**
Continues IMG 201 to provide experience with equipment operation, application of patient care, set-up of correct technical factors for radiographic exposures, and positioning patients accurately for radiographic exams. Provides opportunities for more responsibility and independence with previously learned procedures. Pre-requisite: IMG 201 with a grade of C or greater. Co-requisite: IMG 210. Clinical: 6.0 credits (360 contact hours).

Components: Clinical
Attributes: Technical

**IMG 212(4)** Course ID: 005073

**Imaging Equipment**
Focuses on the types of imaging equipment used in radiography including x-ray imaging systems, fluoroscopy, tomography, screens, film, and automatic processing. Introduces quality management in radiography. Pre-requisite: IMG 209 with a minimum grade of C. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**IMG 216(1)** Course ID: 005074

**Basic Computed Tomography**
Examines basic computed tomography (CT), including imaging formation, equipment, and terminology, with focus on scanning techniques of the head, neck, chest, abdomen and pelvis, and sectional anatomy. Pre-requisite: IMG 209 with a minimum grade of C. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
Attributes: Technical

**IMG 219(6)** Course ID: 005075

**Clinical Practice IV**
Provides structured clinical experience through competency-based assignments that focus on the extremities, bony and visceral thorax, abdomen, vertebral column, and cranium. Includes arthrography and contrast studies of the digestive urinary, and central nervous systems, as well as basic CT scanning procedures. Pre-requisite: IMG 209 with a minimum grade of C. Clinical: 6.0 credits (360 contact hours).

Components: Clinical
Attributes: Technical

**IMG 220(4)** Course ID: 004301

**Radiography V**
Introduces equipment and advanced modalities used to complement diagnostic radiology. Includes principles of radiation biology, radiation protection, pathology and the systematic classifications of disease. Provides for a discussion of professional and legal standards. Pre-requisite: IMG 210 with a grade of C or greater. Co-requisite: IMG 221. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical
instructor defined by enrollment in an accredited Nuclear Medicine program or enrollment in second year of an accredited Radiography program or ARRT registry or NMTCB registry. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

IMG 230(3)  
Course ID: 004827
Computed Tomography Physics & Instruments
Explores the physical principles and instrumentation involved in computed tomography (CT). Examines the history and evolution of CT, and the physics of radiation and CT. Includes the study of configuration, collimation, functions, processing, and quality of CT systems operations. Pre-requisite: ([IMG 201 or IMG 216] with a minimum grade of C) or consent of instructor defined by enrollment in an accredited Nuclear Medicine program or enrollment in second year of an accredited Radiography program or ARRT registry or NMTCB registry. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

IMG 255(3)  
Course ID: 004828
Magnetic Resonance Physics & Instrumentation
Explores the physical principles and instrumentation involved in magnetic resonance imaging (MRI). Examines the history and evolution of MRI and the physics of radiation and MRI. Includes the study of configuration, collimation, functions, processing, and quality of MRI systems operations. Pre-requisite: ([IMG 201 or IMG 216] with a minimum grade of C) or consent of instructor defined by enrollment in an accredited Nuclear Medicine program or enrollment in second year of an accredited Radiography program or ARRT registry or NMTCB registry. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

Course Descriptions

IMT Industrial Maintenance Technology

IMT 100(3)  
Course ID: 001578
Welding for Maintenance
Provides basic instruction needed for student to weld using SMAW (Stick), GMAW (MIG), GTAW (TIG), and Oxy-Fuel processes. Co-requisite: (IMT 101 or IMT 1011 - IMT 1014) or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IMT 101(2)  
Course ID: 001579
Welding for Maintenance Lab
Provides application of basic welding skills used in SMAW (Stick), GMAW (MIG), GTAW (TIG) and Oxy-Fuel. Co-requisite: IMT 100 or consent. Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Course Also Offered in Modules, Technical

IMT 110(3)  
Course ID: 001580
Industrial Maintenance Electrical Principles
Introduces the theory of electricity and magnetism and the relationship of voltage, current, resistance, and power in electrical circuits. Develops an understanding of alternating and direct current fundamentals. Applies formulas to analyze the operation of AC and DC circuits. Co-requisite: IMT 111 or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IMT 111(2)  
Course ID: 001581
Industrial Maintenance Electrical Principles Lab
Verifies knowledge of basic theory by making measurements in working AC and DC circuits. Provides for the construction of various types of circuits and the measurement of their parameters. Stresses the use of test equipment, safety, and troubleshooting. Co-requisite: IMT 110 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Course Also Offered in Modules, Technical

IMT 115(2)  
Course ID: 001582
Maintenance Machining I
Includes fundamental machining operations necessary for the success of Maintenance Technicians in the field who are required to be proficient in basic machining operations. Co-requisite: IMT 116. Lecture: 2 credits (30 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IMT 116(5)  
Course ID: 001583
Maintenance Machining I Lab
Includes the application of fundamental machining operations necessary for the success of Maintenance Technicians in the field who are required to be proficient in basic machining operations. Co-requisite: IMT 115 or Consent. Laboratory: 5 credits (150 contact hours).

Components: Laboratory
Attributes: Course Also Offered in Modules, Technical

IMT 120(3)  
Course ID: 001584
Industrial Maintenance Rotating Machinery
Students will learn the basic principles needed for the proper maintenance of AC and DC motors. Pre-requisite: Permission of the instructor. 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

IMT 121(2)  
Course ID: 001585
Industrial Maintenance Rotating Machinery Lab
Provides practical experience in the construction, operation and maintenance of AC motors and alternators and DC motors and generators. Co-requisite: IMT 120 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Technical
IMT 140(3)  Course ID: 005594  
Industrial Mechanics  
Introduces the fundamental principles of fluid power, mechanical systems, and the relationship between voltage, current, resistance, and power in electrical circuits. Presents a broad range of technical information used in industry today by technicians, mechanics, and maintenance personnel. Co-requisite: IMT 141. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: Technical

IMT 141(1)  Course ID: 005595  
Industrial Mechanics Lab  
Provides laboratory experiences for constructing and adjusting basic fluid power circuits, installing and adjusting mechanical drive components, and taking measurements in operational AC and DC electrical circuits. Stresses the use of common hand tools, test instruments, safety, and troubleshooting. Co-requisite: IMT 140. Lab: 1 credit (30 contact hours).

Components: Laboratory  
Attributes: Technical

IMT 150(3)  Course ID: 001588  
Maintaining Industrial Equipment I  
Introduces the student to maintenance techniques and procedures used to maintain industrial equipment. Co-requisite: IMT 151 or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

IMT 151(2)  Course ID: 001589  
Maintaining Industrial Equipment I Lab  
Provides the student with lab experience in the maintenance of industrial equipment. Co-requisite: IMT 150 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory  
Attributes: Course Also Offered in Modules, Technical

IMT 178(1 - 8)  Course ID: 001590  
Instructor Consent Required  
Practicum  
Provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Practicum do not receive compensation. Pre-requisite: Permission of Instructor. Practicum: 1-8 credits (75-600 contact hours).

Components: Practicum  
Attributes: Technical

IMT 199(1 - 8)  Course ID: 001591  
Instructor Consent Required  
Cooperative Education  
Provides supervised on-the-job work experience related to the student's educational objective. Students participating in the Co-op program receive compensation for their work. Pre-requisite: Permission of Instructor. Co-op: 1 - 8 credits (75-600 contact hours).

Components: Co-op  
Attributes: Technical

IMT 200(4)  Course ID: 007372  
Industrial Robotics and Robotic Maintenance  
Provides the industrial maintenance student an introduction to the theory of robotics including applications, basic programming, components, industrial robotic safety standards, industrial robot classifications, key programming techniques, robotic motion concepts, and terminology. Instructs students on the concepts of preventive and predictive maintenance techniques required for a robot and its backup systems and recovery procedures. Provides the opportunity for the industrial maintenance student to develop, set up, and integrate work cells into manufacturing systems at a beginning level. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Lecture/Lab: 4.0 credits (90 contact hours).

Components: Lecture  
Attributes: Technical

IMT 220(3)  Course ID: 001592  
Industrial Maintenance Electrical Motor Controls I  
Addresses the common symbols used in motor control circuits, the fundamentals of electrical schematics and wiring diagrams, the principles of relays, motor starters, switches, pilot devices, sensing devices, and indicator lights, and introduces the different types and operations of basic motor control circuits. Pre-requisite: IMT 110, & IMT 111. Co-requisite: IMT 221. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

IMT 221(2)  Course ID: 001593  
Industrial Maintenance Electrical Motor Controls II  
Introduces an application of common symbols used in motor control circuits, fundamentals of electrical schematics and wiring diagrams, principles of relays, motor starters, switches, pilot devices, sensing devices, indicator lights, and the different types and operations of basic motor control circuits. Pre-requisite: (IMT 110 and IMT 111) or Consent of Instructor. Co-requisite: IMT 220. Laboratory: 2.0 credits (60 contact hours).

Components: Laboratory  
Attributes: Course Also Offered in Modules, Technical

IMT 222(2)  Course ID: 006422  
Industrial Maintenance Motor Controls II  
Provides study of motor controls in industry. Addresses open and closed loop control systems, servo motors, encoders, AC and DC motors and industry standard color coding. Pre-requisite: (IMT 110 and IMT 111) and IMT 220 and IMT 221) or consent of instructor. Co-requisite: IMT 223. Lecture: 2 credits (30 contact hours).

Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

IMT 223(2)  Course ID: 006437  
Industrial Maintenance Motor Controls II Lab  
 Provides advanced study of motor controls in industry. Addresses open and closed loop control systems, servo motors, encoders, AC and DC motors and industry standard color coding. Pre-requisite: (IMT 110 and IMT 111) and IMT 220 and IMT 221) or consent of instructor. Co-requisite: IMT 222. Lecture: 2 credits (30 contact hours).

Components: Laboratory  
Attributes: Course Also Offered in Modules, Technical

IMT 230(5)  Course ID: 001594  
Industrial Maintenance of PLCs  
This course includes the theory of programmable logic controllers to include installation, programming, interfacing, and troubleshooting of industrial PLC's. Pre-requisite: IMT 240 5 credits (135 contact hours).

Components: Lecture  
Attributes: Technical

IMT 231(2)  Course ID: 001595  
Industrial Maintenance of PLC's Lab  
Addresses the diversity of PLC control devices and applications used in industry today. Safety and electrical lockouts are also included. Pre-requisite: (IMT 110 and IMT 111) or IMT 130 and 131) with a grade of C or greater) or Consent of Instructor. Co-requisite: IMT 230 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory  
Attributes: Technical

IMT 232(2)  Course ID: 001596  
Industrial Maintenance Motor Control Concepts  
Addresses the diversity of control devices and applications used in industry today with safety and electrical lockouts included. The basic theory of programmable logic controllers is also included. Pre-requisite: (IMT 110 and IMT 111) or IMT 130 and IMT 131) with a grade of C or greater) or Consent of Instructor. Co-requisite: IMT 240 or Consent of Instructor. Laboratory: 6 credits (90 contact hours).

Components: Lecture  
Attributes: Technical

IMT 250(2)  Course ID: 001598  
Maintaining Industrial Equipment II  
Integrates the student's accumulative knowledge from the IMT 150 and IMT 151 courses. Emphasizes troubleshooting techniques and applied machine repair situations that require the student to apply learned skills from all areas of the curriculum. Pre-requisite: (IMT 150 and 151) with a grade of C or greater or consent of instructor. Co-requisite: IMT 251 or consent of instructor. Lecture: 2.0 credits (30 contact hours).

Components: Lecture  
Attributes: Technical

IMT 251(3)  Course ID: 001599  
Maintaining Industrial Equipment II Lab  
Provides the student with lab experiences in the diversity of control devices and applications used in industry today with safety and electrical lockouts included. Pre-requisite: IMT 150 and 151) with a grade of C or greater or consent of instructor. Co-requisite: IMT 250 or consent of instructor. Laboratory: 3.0 credits (90 contact hours). Lab: 5.0 credits (90 contact hours).

Components: Laboratory  
Attributes: Technical

IMT 260(7)  Course ID: 006546  
Presswork and Die Maintenance  
Provides the industrial maintenance technician to be proficient in the field of stamping press and die maintenance. Pre-requisite: IMT 100, IMT 101 and (IMT 115 & IMT 116) or (IMT 114) or (IMT 110 & IMT 112) or consent of instructor. Lecture: 2 credits (30 contact hours), Lab: 5 credits (150 contact hours).

Components: Lecture  
Attributes: Technical

IMT 280(3)  Course ID: 001600  
Advanced Programmable Logic Controllers  
Covers advanced theory of programmable logic controllers to include designing applications, programming, interfacing and troubleshooting of industrial PLCs. Pre-requisite: (IMT 220 and IMT 221 with a grade of C or greater) or (equivalent) or Consent of Instructor. Co-requisite: IMT 281 or Instructor Consent. 3 credits (45 contact hours).

Components: Lecture  
Attributes: Course Also Offered in Modules, Technical

IMT 281(2)  Course ID: 001601  
Programmable Logic Controllers Lab  
Provides practical applications of the theory in IMT 280 to include installation, programming, interfacing and troubleshooting of industrial PLCs. Pre-requisite: (IMT 220 and 221) with a grade of C or greater) or Consent of Instructor. Co-requisite: IMT 280 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory  
Attributes: Course Also Offered in Modules, Technical

IMT 289(1)  Course ID: 007373  
Industrial Maintenance Technology Capstone  
Serves as the capstone course for the Industrial Maintenance Technology degree program. Integrates prior learning outcomes into a single integrated learning experience. Includes preparation for an exit exam that all program graduates must take. Pre-requisite: (BRX 120 or ELT 102) and FPX 100 and FPX 101 and IMT 100 and IMT 101 and IMT 100 and IMT 111 and IMT 150 and 151 and IMT 220 and IMT 221 or consent of instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture  
Attributes: Technical

IMT 290(1 - 3)  Course ID: 001802  
Instructor Consent Required  
Special Problems  
Provides an opportunity to develop advanced skills in topics related to industrial maintenance. Pre-requisite: Consent of Instructor. Laboratory: 1-3 credits (30-90 contact hours).

Components: Laboratory  
Attributes: Technical

IMT 100(1.75)  Course ID: 005915  
Welding for Maintenance Safety  
Provides basic instruction needed for student to weld using Oxy-Fuel. Co-requisite: IMT 1011 (or consent of instructor). Lecture: 0.75 credit (11.25 contact hours).

Components: Lecture
IMT 2233(1) Course ID: 006436
Industry Standards for Installing Motors/Electronic Variable Speed Drives II
Provides the lab component for IMT 2233. Covers how to properly evaluate maintenance procedures used for installation of AC and DC motors, proper start up and shut down of electrical systems and fault recovery. Pre-requisite: (IMT 110 and IMT 111) or Consent of Instructor. Co-requisite: IMT 2233. Laboratory: 1 credit (30 contact hours).
Components: Laboratory

IMT 2601(0.5) Course ID: 006547
Stamping Press Basics
Addresses press and production safety, various types of presses, and press operations. Pre-requisite: (IMT 115 & IMT 116) or (MTT 114) or (MTT 110 & MTT 112) or Consent of Instructor. Lecture: 0.5 credits (Contact Hours 7.5).
Components: Lecture

IMT 2602(0.5) Course ID: 006548
Stamping Die Basics
Addresses the basics of stamping dies including the production of dies, die safety, rigging and setup of dies, die bolting and clamping, and OSHA die identification. Pre-requisite: IMT 2601 or Consent of Instructor. Lecture: 0.3 credits (4.5 contact hours), Lab: 0.2 credits (6 contact hours).
Components: Lecture

IMT 2603(1.3) Course ID: 006550
Stamping Die Processes
Addresses various stamping die processes such as bending, forming, drawing, squeezing, and coining. Pre-requisite: IMT 2602 or Consent of Instructor. Lecture: 1.3 (Contact Hours 36).
Components: Lecture

IMT 2604(0.6) Course ID: 006549
Metallurgy of Die Components
Addresses the characteristics of various tool and die steels, the properties of low carbon steels and cast iron, and die surface coatings and treatments. Pre-requisite: IMT 2603 or Consent of Instructor. Lecture: 0.1 credits (1.5 Contact Hours), Lab: 0.5 credits (15 contact hours).
Components: Lecture

IMT 2605(1.2) Course ID: 006551
Anatomy of Stamping Dies
Addresses pads and strippers, spring selection, and the characteristics of nitrogen die pressure systems. Pre-requisite: IMT 2604 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

IMT 2606(1.3) Course ID: 006552
Repair Decisions
Addresses the process for die repair decisions, basic considerations needed when repairing dies, and the control of bend by adjusting pad pressure. Pre-requisite: IMT 2605 or Consent of Instructor. Lecture: 1.3 (Contact Hours 34.5).
Components: Lecture

IMT 2607(1.6) Course ID: 006553
Die Repair
Addresses the repair of dies including good grinding practice, repairing worn edges, performing shimming of die components, repairing forming ribs and embossments, performing electrical and welding repairs, performing hand finishing, and explaining the repair of nitrogen pressure systems. Pre-requisite: IMT 2606 or Consent of Instructor. Lecture: 0.1 credits (1.5 contact hours), Lab: 1.5 credits (45 contact hours).
Components: Lecture

IMT 2802(0.75) Course ID: 006425
Programming Instructions in PLCs
Provides an overview in programming Programmable Logic Controller Timers and Counters. Co-requisite: IMT 2812 or Instructor Consent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

IMT 2803(0.75) Course ID: 006426
Number Systems and Data Manipulation in PLCs
Includes different numbering systems, their transfer from one location to another, comparing, manipulation and common math instructions used in PLC. Co-requisite: IMT 2813 or Instructor Consent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

IMT 2804(0.75) Course ID: 006427
Advanced Instructions and Troubleshooting PLCs
Provides an understanding of control instructions, sequencers, shift registers, troubleshooting, and forcing inputs and outputs. Co-requisite: IMT 2814 or Instructor Consent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

IMT 2811(0.5) Course ID: 006428
Introduction to Programmable Logic Controllers Lab
Provides hands-on experience in programming and addressing basic instructions, internal relays, and latching relays. Includes changing modes of operation. Pre-requisite: (IMT 220 and IMT 221 with a grade of C or greater) or (equivalent) or Consent of Instructor. Co-requisite: IMT 2801 or Instructor Consent. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

IMT 2812(0.5) Course ID: 006429
Programming Instructions in PLCs Lab
Provides practical experience in programming Programmable Logic Controller Timers and Counters. Co-requisite: IMT 2802 or Instructor Consent. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

IMT 2813(0.5) Course ID: 006430
Number Systems and Data Manipulation in PLCs Lab
Converts numbers and data from one system to another, comparing, manipulation, and die surface coatings and treatments. Pre-requisite: IMT 2803 or Instructor Consent. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

IMT 2814(0.5) Course ID: 006431
Advanced Instructions and Troubleshooting PLCs Lab
Covers program control instructions, sequencers, and shift registers. Includes troubleshooting PLC issues and using the forcing command. Co-requisite: IMT 2804 or Instructor Consent. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

INF 120(3) Course ID: 007283
Principles of Informatics
Multi-disciplinary exploration of the nature of information; how it is represented, processed, shared, preserved, and protected. Topics drawn from the fields of computing, communication, business, the natural and social sciences, and the humanities. Identifies enduring principles, examines impacts on individuals and society, provides practice with a variety of digital technologies. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

Attributes: University Course (Northern Kentucky University)

INF 260(3) Course ID: 007284
Object Oriented Programming I
Elementary object-oriented programming concepts and practice: types, decisions, loops, methods, arrays, classes, design and problem-solving. An intensive introduction intended for students with programming experience. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

Attributes: University Course (Northern Kentucky University)

INF 286(3) Course ID: 007287
Introduction to Web Development
An introduction to web design and development for majors in the informatics fields. Web page creation and HTML, site organization and best practices, e-business planning, models and strategies, overview of SML and CSS, introduction to client-side and server-side programming. Lecture 3.0 credits (45 contact hours).
Components: Lecture

Attributes: University Course (Northern Kentucky University)

INS Insurance

INS 100(3) Course ID: 006586
Introduction to Insurance and Risk Management
Introduces property-casualty insurance and is a foundation for the study of insurance. Provides information on types of insurance, providers, regulatory environment, and performance measures. Describes the function of marketing, underwriting and claims. Covers insurance as a contract, introduces both property and liability loss exposure and policy provisions, and provides a basic discussion of risk management as a means of managing loss exposures. Prerequisite: Reading, English, and Mathematics assessment scores above the KCTCS developmental placement level or successful completion of the prescribed developmental course(s). Lecture: 3.0 credits (45 contact hours).
Components: Lecture

Attributes: Technical
ITS 115(3) Course ID: 005590
Heritage and Culture of Deaf People
Overview of the psychological, sociological and cultural impacts of deafness upon children and adults. Explores how deafness can affect the individual’s development in language, communication, cognition and psychological-emotional growth. Examines historic relations between deaf and hearing, and compares deaf culture with that of the hearing world. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IVC 140(16) Course ID: 006576
Invasive Cardiology I
Examines the anatomy and physiology of the cardiovascular system and the diseases found within the system. Introduces the student to radiological procedures and protocols used in the cardiology catheterization lab and instruction in advanced cardiac life support (ACLS). Introduces correct techniques used by Invasive Cardiology Technologists during specific procedures performed in the cardiology catheterization lab. Discusses the hemodynamics, pharmacology and calculations encountered in the cardiology catheterization lab. Pre-requisite: DMS 105. Lecture: 16.0 credits (240 contact hours).
Components: Lecture
Attributes: Technical

IVC 150(3) Course ID: 006577
Invasive Cardiology II
Addresses radiology principles, scrub and circulating principles and devices used to obtain optimal outcomes in the cardiac catheterization lab. Introduces procedures, such as MRI and CT, used outside of the cardiac catheterization lab. Discusses the preparation, protocol and intervention procedures for a pediatric catheterization lab. Pre-requisite: DMS 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

IVC 160(6) Course ID: 006578
Invasive Cardiology Clinical Education I
Applies invasive cardiology instruction to the cardiac catheterization laboratory clinical setting. Introduces the responsibilities of the invasive cardiovascular technologist, with emphasis on radiological procedures. Pre-requisite: DMS 105. Clinical: 6.0 credits (360 contact hours).
Components: Clinical
Attributes: Technical

IVC 165(6) Course ID: 006579
Invasive Cardiology Clinical Education II
Applies invasive cardiology instruction to the cardiac catheterization laboratory clinical setting. Participation in the responsibilities of the invasive cardiovascular technologist, with emphasis on scrub and circulate duties. Introduces electrophysiology laboratory procedures. Pre-requisite: IVC 160. Clinical: 6.0 credits (360 contact hours).
Components: Clinical
Attributes: Technical
**JAT** Journalism - Advertising - Telecommunications

**JAT 101(3) Course ID: 002222**
**Introduction to Communication Media**
Lectures, readings, and other materials provide an introductory survey of the journalism, advertising, and telecommunications professions. This course will foster an understanding of the historical development, theory, effects, regulation, practice, and professional opportunities of these three industries. Students will gain an awareness of the possibilities and limitations of evolving communication technologies, preparing them to become intelligent consumers, producers, and managers of communication media. Lecture: 3 credits (45 contact hours).
Components: Laboratory Attributes: Other

**JAT 241(1 - 4) Course ID: 002223**
**Communications Practicum**
Supervised laboratory work in the media of mass communications, with meetings for evaluation of work, study of techniques, analyses of problems, and reports. May be repeated to a maximum of four credits. (Offered in Community College System only.) Independent Study 1.0 - 4.0 credit (15 contact hours).
Components: Independent Study Attributes: Other

**JPN Japanese**

**JPN 101(4) Course ID: 003862**
**Beginning Japanese I**
A course in first semester Japanese language. Lecture: 4 credits (60 contact hours).
Components: Lecture Attributes: Foreign Language, Cultural Studies

**JPN 102(4) Course ID: 003970**
**Beginning Japanese II**
A course in second semester Japanese language. Pre-requisite: JPN 101 or equivalent. Lecture: 4 credits (60 contact hours).
Components: Lecture Attributes: Foreign Language, Cultural Studies

**JPN 201(3) Course ID: 003994**
**Intermediate Japanese I**
Focuses on developing listening, speaking, reading and writing skills in early intermediate level of Japanese. Pre-requisite: JPN 102/RAE 121 or equivalent. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Other

**JPN 202(3) Course ID: 004208**
**Intermediate Japanese II**
Focuses on developing listening, speaking, reading and writing skills in upper intermediate level of Japanese. Pre-requisite: JPN 201. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Other

**KHP Kinesiology and Health Promotion**

**KHP 100(1) Course ID: 002299**
**Walking**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 101(1) Course ID: 002300**
**Weightlifting**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 104(1) Course ID: 002304**
**Beginning Swimming**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 106(1) Course ID: 002306**
**Beginning Bowling**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 107(1) Course ID: 002307**
**Fitness**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 109(1) Course ID: 002309**
**Dancing**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 115(1) Course ID: 002315**
**Martial Arts**
Provides students with beginning instruction and experience in self-defense, basic exercise, and disciplines associated with martial arts. Lab: 1 credit (30 contact hours).
Components: Laboratory Attributes: Other

**KHP 116(1) Course ID: 002316**
**Intermediate Martial Arts**
Provides students with intermediate instruction and experience in basic exercise and disciplines associated with martial arts. Pre-requisite: KHP 115. Lab: 1 credit (30 contact hours).
Components: Laboratory Attributes: Other

**KHP 121(1) Course ID: 002321**
**Aerobics**
Includes beginning conditioning activities and/or vigorous nonstop rhythmic movement patterns designed to improve or maintain cardiovascular endurance for students at all levels of fitness. Lab: 1 credit (30 contact hours).
Components: Laboratory Attributes: Other

**KHP 122(1) Course ID: 002322**
**Low-Impact Aerobics**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 123(1) Course ID: 002323**
**Basketball**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 124(1) Course ID: 002324**
**Conditioning**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 129(1) Course ID: 002329**
**Beginning Weight Training**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 130(1) Course ID: 002330**
**Water Aerobics**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 132(1) Course ID: 002332**
**Nautilus**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 134(1) Course ID: 002334**
**Cross-training**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 135(1) Course ID: 002335**
**Swimming for Fitness**
Instruction in a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours).
Components: Laboratory Attributes: Other

**KHP 136(1) Course ID: 002336**
**Advanced Walking for Fitness**
Instruction in a variety of motor skills activities. Courses are for students who already possess intermediate skills in the activity. Instructors will assess skill at start of course. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit. Assignment of specific title will occur internally in the department. Laboratory: 3 hours. Pre-requisite: Completion of comparable service course or demonstrated competency.
Components: Laboratory Attributes: Other

**KHP 138(1) Course ID: 003855**
**Beginning Yoga**
Provides students with instruction and activities associated with beginning yoga. Lab: 1 credit (30 contact hours).
Components: Laboratory Attributes: Other
KHP 139(1) Course ID: 003856
Lifetime Sports
Instruct a variety of motor skill activities. Courses are designed for students at a beginner level. Up to six hours of credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 contact hour (15 contact hours).
Components: Laboratory
Attributes: Other

KHP 140(1) Course ID: 002341
Advanced Weight Training
Instruct in a variety of motor skills activities. Courses are designed for students who already possess intermediate skills in the activity. Instructors will assess skill at the start of the course. Up to six hours of credit may be earned in service courses; however, the same activity may not be repeated for credit. Assignment of specific title will occur internally in the department. Laboratory: 3 hours. Pre-requisite: Completion of comparable service course or demonstrated competency.
Components: Laboratory
Attributes: Other

KHP 142(1) Course ID: 002342
Advanced Aerobics
Instruct in a variety of motor skills activities. Courses are designed for students who already possess intermediate skills in the activity. Instructors will assess skill at the start of the course. Up to six hours of credit may be earned in service courses; however, the same activity may not be repeated for credit. Assignment of specific title will occur internally in the department. Laboratory: 3 hours. Pre-requisite: Completion of comparable service course or demonstrated competency.
Components: Laboratory
Attributes: Other

KHP 143(1) Course ID: 002343
Intramurals
Instruct in a variety of motor skills activities. Courses are designed for students who already possess intermediate skills in the activity. Instructors will assess skill at the start of the course. Up to six hours of credit may be earned in service courses; however, the same activity may not be repeated for credit. Assignment of specific title will occur internally in the department. Laboratory: 3 hours. Pre-requisite: Completion of comparable service course or demonstrated competency.
Components: Laboratory
Attributes: Other

KHP 145(2) Course ID: 003870
Concepts of Health and Fitness
Current concepts of health and fitness covering such topics as the benefits of physical fitness, principles of fitness training, prevention of cardiovascular disease, and basic concepts of nutrition and weight management. Emphasis will be on the promotion of health lifestyles. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

KHP 146(1) Course ID: 016371
Intermediate Yoga
Provides students with intermediate instruction and activities associated with yoga. Laboratory: 1 credit (30 contact hours).
Components: Laboratory
Attributes: Other

KHP 149(1) Course ID: 016372
Advanced Yoga
Provides students with advanced instruction and activities associated with yoga. Laboratory: 1 credit (30 contact hours). Pre-requisite or Co-requisite: KHP 146.
Components: Laboratory
Attributes: Other

KHP 150(3) Course ID: 006816
Personal Health Behavior
Prepares students to make informed choices about health issues and behaviors and to take responsibility for their health and well-being. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

KHP 160(3) Course ID: 006817
Personal Nutrition and Fitness
Introduces the importance of daily diet and nutrition. Addresses the role of the personal trainer in helping clients to recognize and decrease risks for chronic diseases. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

KHP 190(2) Course ID: 000029
First Aid and Emergency Care
A study of first aid subject matter and orientation in the various first aid teaching methods. Lectures and demonstrations on first aid measures with skill training. American Red Cross Certificate made available. Lecture: 1 hour; Laboratory: 2 hours.
Components: Laboratory, Lecture
Attributes: Other

KHP 225(3) Course ID: 006818
Exercise Techniques and Physical Training
Focuses on the core components of personal training. Provides information and resources necessary to pass personal fitness trainer certification. Pre-requisite: BIO 135 or MSG 100. Co-requisite: KHP 235. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

KHP 230(3) Course ID: 000379
Human Health and Wellness
The study of health promotion, wellness, and disease prevention concepts as applied to individual, familial, and community health. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

KHP 235(2) Course ID: 006820
Personal Trainer Practicum
Students will apply personal training principles and techniques and demonstrate skills with clients in various settings under instructor and preceptor supervision. Pre-requisite: BIO 135 or MSG 100. Co-requisite: KHP 225. Practicum: 2.0 credits (80 contact hours).
Components: Practicum
Attributes: Other

KHP 240(3) Course ID: 002226
Nutrition and Physical Fitness
Focuses on the inter-relationship between nutrition and physical fitness. Provides the student with the information necessary to formulate an individualized plan for achievement and maintenance of adequate nutrition and physical fitness while addressing weight control. Lecture: 3 credits (45 contact hours).
Components: Laboratory, Lecture
Attributes: Other

KMA Kentucky Medication Aide
KMA 100(5) Course ID: 001629
Kentucky Medication Aide
Prepares a Kentucky Medicaid Nurse Aide to administer specific medications in a long term care facility as delegated and supervised by a licensed nurse. Pre-requisite: (MNA 100 or NAA 100 or NAA 125) and six months of work experience as a Kentucky Medicaid Nurse Aide) or Consent. Lecture/Lab: 5 credits (105 contact hours).
Components: Lecture
Attributes: Technical

KLIT Library Information Technology
KLIT 120(3) Course ID: 007416
Readers’ Advisory Services
Examines library reference services and services. Includes reference interview techniques, print and digital information sources, bibliographic and full text databases, and digital access and retrieval skills. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

KLIT 124(3) Course ID: 004802
Library Administration
Introduces basic principles of library organization and management. Includes the planning process, policies, ethical and legal issues, budgeting, and human resources. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

KLIT 132(3) Course ID: 004803
Library Technical Services
Provides an overview of library technical services, including acquisitions, processing, cataloging and classification. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LAS Latin America
LAS 201(3) Course ID: 015525
Introduction to Latin America
An interdisciplinary approach to the people, culture, and development of the Latin American republics. Attention will be concentrated on significant aspects of the indigenous peoples, geography, economic processes, gender roles, social structures and politics of Latin America, with special attention paid to value structures and value conflicts. Musical, literary and artistic expression in Latin America will also be introduced. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, University Course (University of Kentucky)
LIT 200(3) Course ID: 005218
Seminar in Kentucky Literature
This is an online or computer-assisted seminar course in Kentucky literature recognizing, examining, and studying distinct regional differences and similarities with concentrations on major contemporary and traditional Kentucky writers and their texts. Topics will vary, from a group of authors, and historical period or aesthetic movements, to a genre, a theme, or an aspect of literary theory. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: HUM 245 Attributes: Technical

LIT 230(3) Course ID: 004804
Web Publishing for Libraries
This is a course in web publishing for library web sites, including HTML code, web page authoring software, web page and web site design, and trends in library web sites. This is a distance education course with a service learning component. Pre-requisite: LIT 115 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 240(3) Course ID: 004805
Literature of Appalachian Kentucky
This is an online or computer-assisted introductory survey course in the Appalachian literature of Kentucky concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period or aesthetic movement, a genre, a theme, or an aspect of literary theory. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 242(3) Course ID: 004806
Literature of Western Kentucky
This is an online or computer-assisted introductory survey course in the literature of Western Kentucky which concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period, or aesthetic movement, a genre, a theme or an aspect of literary theory. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 243(3) Course ID: 004807
Library Services for Children
Introduces library services for children grades K - 6 and their caregivers. Includes surveys of child development, library programming, children’s literature, collection development, and legal issues. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 245(3) Course ID: 005083
Library Services for Young Adults
Introduces library services for young adults from 6th to 12th grades. Includes programming, collection development, young adult literature, the use of the Internet, and ethical and legal issues. Emphasizes the development and promotion of young adult library services. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 247(3) Course ID: 004808
Library Services for Adults
Introduces library services for adults. Includes adult literature, collection development, programming, circulation services, reference services, and customer relations. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 248(3) Course ID: 004809
Library Services for Preschool Children
Introduces library services for preschool children, age infant to 5 years. Includes library programming development and production, preschool children’s literature, services for parents and for child care services, collection development, and legal issues. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 260(3) Course ID: 004810
Genealogy Services in Libraries
Introduces genealogy services in libraries. Surveys genealogy data sources, research methods, collection development, patron referrals, legal and ethical issues, library programming, and marketing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 285(3) Course ID: 005051
History of Libraries
This course is a survey of the development of libraries from ancient times to the present, with emphasis on academic and public libraries in the United States. Attention is given to the interaction of libraries with economic, social and political trends in the larger society. Pre-requisite: LIT 115 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 298(1 - 3) Course ID: 004811
Selected Topics in Library Information Technology
Expands library course offerings as new technologies develop and/or as new issues evolve. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture
Attributes: Technical

LOM 100(3) Course ID: 006827
Introduction to Logistics Management
Presents an overview of general logistics concepts and organizational issues; inventory management and customer service in logistics; and transportation and third party logistics. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 101(3) Course ID: 006828
Transportation Management
Presents an overview of the role of transportation and pricing issues. Pre-requisite: LOM 100. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 102(3) Course ID: 006829
Supply Chain Management
Presents an overview of supply chain management and financial analysis; inventory management skills and techniques; and supply chain design and sustainability solutions. Pre-requisite: LOM 100. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 103(3) Course ID: 006827
Introduction to Supply Chain Management
Provides an understanding of the importance of individual components (supplies, manufacturers, distributors, and customers) in the operations of a supply chain. Pre-requisite: LOM 102. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 104(3) Course ID: 006828
Transportation Activities
Presents an overview of transportation and third party logistics. Pre-requisite: LOM 1002. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 105(3) Course ID: 006829
Supply Chain Overview
Presents an overview of transportation risk management and global management issues. Pre-requisite: LOM 1001. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 106(3) Course ID: 006830
Transportation Modes
Presents transportation modes and terminals. Pre-requisite: LOM 111. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 107(3) Course ID: 006831
Global Transport
Presents an overview of transportation risk management and global management issues. Pre-requisite: LOM 1012. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 108(3) Course ID: 006832
Supply Chain Skills
Presents inventory management skills and techniques. Pre-requisite: LOM 1021. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 109(3) Course ID: 006833
Supply Chain Sustainability
Presents supply chain design and sustainability solutions. Pre-requisite: LOM 1022. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LIT 280(3) Course ID: 004810
Genealogy Services in Libraries
Introduces genealogy services in libraries. Surveys genealogy data sources, research methods, collection development, patron referrals, legal and ethical issues, library programming, and marketing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LIT 285(3) Course ID: 005051
History of Libraries
This course is a survey of the development of libraries from ancient times to the present, with emphasis on academic and public libraries in the United States. Attention is given to the interaction of libraries with economic, social and political trends in the larger society. Pre-requisite: LIT 115 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 100(3) Course ID: 006827
Introduction to Logistics Management
Presents an overview of general logistics concepts and organizational issues; inventory management and customer service in logistics; and transportation and third party logistics. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 101(3) Course ID: 006828
Transportation Management
Presents an overview of the role of transportation and pricing issues; transportation modes and terminals; and transportation risk management and global management issues. Pre-requisite: LOM 100. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 102(3) Course ID: 006829
Supply Chain Management
Presents an overview of supply chain management and financial analysis; inventory management skills and techniques; and supply chain design and sustainability solutions. Pre-requisite: LOM 100. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 103(3) Course ID: 006827
Introduction to Supply Chain Management
Provides an understanding of the importance of individual components (supplies, manufacturers, distributors, and customers) in the operations of a supply chain. Pre-requisite: LOM 102. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

LOM 104(3) Course ID: 006828
Transportation Activities
Presents an overview of transportation and third party logistics. Pre-requisite: LOM 1002. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 105(3) Course ID: 006829
Supply Chain Overview
Presents an overview of transportation risk management and global management issues. Pre-requisite: LOM 1001. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 106(3) Course ID: 006830
Transportation Modes
Presents transportation modes and terminals. Pre-requisite: LOM 111. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 107(3) Course ID: 006831
Global Transport
Presents an overview of transportation risk management and global management issues. Pre-requisite: LOM 1012. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 108(3) Course ID: 006832
Supply Chain Skills
Presents inventory management skills and techniques. Pre-requisite: LOM 1021. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

LOM 109(3) Course ID: 006833
Supply Chain Sustainability
Presents supply chain design and sustainability solutions. Pre-requisite: LOM 1022. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
This is an introductory course to managing essential resources, people, and deadlines, and real-world challenges required to bring any project in on time, on target, and on budget. Pre-requisite: Digital Literacy or consent of instructor. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1801(1) Course ID: 016373
Project Management Overview
Introduces practical approach to managing essential resources, people, and deadlines, and real-world challenges required to bring any project in on time, on target, and on budget. Pre-requisite: Digital Literacy or consent of instructor. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1802(1) Course ID: 016374
Project Management Activities
Covers skills and concepts of essential project management processes, including requirements, schedules, risks, management assessment change control, and project management software applications. Pre-requisite: L1801. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1803(1) Course ID: 016375
Using Microsoft Project
Provides students with a practical approach to developing projects with opportunities to apply skills and elements by completing activities based upon real-time projects and case studies. Pre-requisite: L1801. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1808(1) Course ID: 016376
Intro to Supply Chain Mgmt
Explains the key drivers in a supply chain and their relationship to manufacturers and distributors and the benefits of integration with those departments. Pre-requisite: L1802. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1809(1) Course ID: 016377
Benefits of Supply Chain Mgmt
Demonstrates the benefits of supply chain management in achieving supply cost reductions utilizing charts and flow plans to integrate into the workplace. Pre-requisite: L1802. Lecture: 1 credit (15 contact hours).

Components: Lecture

L1810(1) Course ID: 016378
Utilizing Supply Chain Mgmt
Analyzes and develops customer focused supply chain utilizing effective strategies. Pre-requisite: L1811. Lecture: 1 credit (15 contact hours).

Components: Lecture

LSILockmasters Security Institute

LSI 120(4) Course ID: 004403
Comprehensive Security Specialist
Training for the security professional in all aspects of security, addressing current trends in policies and procedures, including physical security, crime prevention, security surveys and contingency planning for internal and external threats. Pre-requisite: Students will be required to undergo a criminal background investigation. If a student is presently employed by a law enforcement or federal agency that requires criminal checks, this requirement may be waived. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture Attributes: Technical

LSI 130(4) Course ID: 004404
GSA Locks, Vaults & Containers Certified Technician Training
Instruction to successfully service, maintain, perform covert and forced entry, and repair GSA approved security containers. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours). Pre-requisite: Instruction to successfully service, maintain, perform covert and forced entry, and repair GSA approved security containers.

Components: Laboratory, Lecture Attributes: Technical

LSI 140(1) Course ID: 004406
Managing Terrorism and Other Crises
An overview of domestic and international terrorist groups, introducing the concept of contingency planning in comparison to other types of operations planning, and providing basic knowledge regarding the management of a bomb threat and identification of explosives and incendiary devices. Pre-requisite: Students will be required to undergo a criminal background investigation. If a student is presently employed by a law enforcement or federal agency that requires criminal checks, this requirement may be waived by LSI. Lecture: 1 credit (15 contact hours).

Components: Lecture Attributes: Technical

LSI 150(4) Course ID: 004407
Professional Locksmithing
Comprehensive hands-on knowledge of locks, providing the student with the knowledge necessary to become a competent technician who can service, maintain, troubleshoot, and master key any industrial key lock system. Pre-requisite: Students will be required to undergo a criminal background investigation. If a student is presently employed by a law enforcement or federal agency that requires criminal checks, this requirement may be waived by LSI. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture Attributes: Technical

LSI 151(1) Course ID: 004659
Basic Penetration of Safes
Techniques and skills that are required to strategically drill into a container and defeat the locking mechanism in order to penetrate a safe or security container. Pre-requisite: LSI 153. Lecture: 1 credit (15 contact hours).

Components: Lecture Attributes: Technical

LSI 152(1) Course ID: 004660
Combination Lock Manipulation
Complex and in-depth investigation of the working of the combination lock that will provide the technician with the capability of determining the combination without drilling the lock. Pre-requisite: LSI 153. Lecture: 0.5 credits (8 contact hours). Laboratory: 0.5 credits (15 contact hours).

Components: Laboratory, Lecture Attributes: Technical

LSI 153(2) Course ID: 004661
Safe Lock Servicing - Mechanical and Electronic
Instruction in the operation and servicing of mechanical and electronic safe locks. Pre-requisite: Students will be required to undergo a criminal background investigation. If a student is presently employed by a law enforcement or federal agency that requires criminal checks, this requirement may be waived by LSI. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture Attributes: Technical

LSI 160(2) Course ID: 004408
Fundamentals of Electricity
Instruction in basic electrical principles, circuit design and application, and electrical components needed to comprehend the principles of electronic security systems. Pre-requisite: Students will be required to undergo a criminal background investigation. If a student is presently employed by a law enforcement or federal agency that requires criminal checks, this requirement may be waived by LSI. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture Attributes: Technical

LSI 170(2) Course ID: 004409
Electronic Access Control
Instruction in the latest security technology utilizing electronic access control systems, enabling the technician to design, install, and troubleshoot the latest electronic access control systems. Pre-requisite: LSI 160. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture Attributes: Technical

MA Mathematics

MA 108R(3) Course ID: 006621
Intermediate Algebra
This course is remedial in nature and covers material commonly found in second year high school algebra. Specific topics to be discussed include numbers, fractions, algebraic expression, simplifying, factoring, laws of exponents, linear equations, simple graphs and polynomial algebra. This course is not available for degree credit toward a bachelor’s degree. Credit not available on the basis of special examination. Pre-requisite: One year of high school algebra. Recommended for students with a Math ACT score of 19 or less, or consent of department. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Remedial - Mathematics, University Course (University of Kentucky)

MA 109(3) Course ID: 005805
College Algebra
Selected topics in algebra. Develops manipulative algebraic skills and mathematical reasoning required for further study in mathematics. Includes brief review of basic algebra, quadratic formula, systems of linear equations, introduction to functions and graphing. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 112, 123, 162, 201 and 202. Credit not available on the basis of special examination. Pre-requisite: Two years of high school algebra and a Math ACT score of 21 or above. Pre-requisite: Two years of high school algebra and a Math ACT score of 20 or above; or MA 108R (UK); or appropriate score on the math placement test. Lecture: 3 credits (45 contact hours).

Components: Lecture Course Equivalents: MAT 150
Attributes: University Course (University of Kentucky)

MA 110(4) Course ID: 006622
Algebra and Trigonometry for Calculus
This is a course specifically designed for students intending to enroll in a calculus sequence. Topics will include trigonometric functions, exponentials and logarithms, graphs, polar coordinates, conic sections and systems of conics. Students may not receive credit for MA 110 and either of MA 109 or MA 112. This course is not available for credit to students who have received credit in any higher numbered mathematics course except for MA 123, 162, 199, 201 or 202. Credit is not available by special examination. Lecture, three hours; recitation, two hours per week. Pre-requisite: Two years of high school algebra and a Math ACT score of 23 or above, or consent of department. Lecture: 3.5 credits (45 contact hours). Discussion: 1.0 credit (30 contact hours).

Components: Discussion, Lecture Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)

MA 111(3) Course ID: 004907
Contemporary Mathematics
An introduction to concepts and applications of mathematics, with examples drawn from such areas as voting methods, apportionment, consumer finance, graph theory, tiling, polyhedra, number theory and game theory. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 112, 123, 162, 201 and 202. This course does not serve as a Pre-requisite for any calculus course. Credit not available on that basis of special examination. Pre-requisite: Two years of high school algebra and a Math ACT score of 18 or above, or MA 108, or math placement test. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)
MA 112(2)
Course ID: 006624
Trigonometry
A standard course. Includes trigonometric functions, identities, multiple-angle formulas, laws of sines and cosines, and graphs of trigonometric functions. This course is not available to persons who have received credit for any mathematics course of a higher number with the exception of MA 113, 123, 132 and 162. Credit not available by special examination. Pre-requisites: Two years of high school algebra and a Math ACT score of 21 or above or a Math SAT score of 510 or above; or MA 108R; or appropriate score on the math placement test. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 113(4)
Course ID: 006625
Calculus I
A course in one-variable calculus, including topics from analytic geometry. Derivatives and integrals of elementary functions (including the trigonometric functions) with applications. Lecture, three hours; recitation, two hours per week. Pre-requisites: Math ACT of 27 or above, or math SAT of 620 or above, or MA 109 (UK) and MA 112 (UK), or MA 110 (UK), or consent of the department. Students who enroll in MA 113 based on their test scores should have completed a year of pre-calculus study in high school that includes the study of the trigonometric functions. Note: Math placement test recommended. Lecture: 3.0 credits (45 contact hours). Discussion: 1.0 credit (30 contact hours).
Components: Discussion, Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 114(4)
Course ID: 006626
Calculus II
A continuation of MA 113, primarily stressing techniques of integration. Lecture, 3 hours; recitation, 2 hours per week. Pre-requisites: Math ACT of 27 or above, or Math SAT of 620 or above, or MA 109 (UK) or MA 112 (UK), and a grade of C or better in MA 113 (UK) or MA 122 (UK). Lecture: 3.0 credit hours (45 contact hours). Discussion: 1.0 credit (30 contact hours).
Components: Discussion, Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 123(4)
Course ID: 006627
Elementary Calculus and Its Applications
An introduction to differential and integral calculus, with applications to business and the biological and physical sciences. Not open to students who have credit in MA 113. Students who have received credit for MA 113 cannot receive credit for MA 123. Pre-requisites: Math ACT score of 26 or above, or Math SAT of 600 or above, or MA 109 (UK) or appropriate math placement score, or consent of department. Note: Math placement test recommended. Lecture: 4.0 credit hours (60 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 162(3)
Course ID: 006628
Finite Mathematics and Its Applications
Finite mathematics with applications to business, biology, and the social sciences. Linear functions and inequalities, matrix algebra, linear programming, probability. Emphasis on setting up mathematical models from stated problems. Pre-requisites: MA 109 (UK) or equivalent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 193(1)
Course ID: 006629
Supplementary Mathematics Workshop I
Laboratory offered (only) as an adjunct to certain mathematics lecture courses. Offered only on a pass/fail basis. Co-requisites: Set by instructor. Lab 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: University Course

MA 194(1)
Course ID: 006630
Supplementary Mathematics Workshop II
Laboratory offered (only) as an adjunct to certain mathematics lecture courses. Offered only on a pass/fail basis. Co-requisites: Set by instructor. Lab 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: University Course

MA 201(3)
Course ID: 006631
Mathematics for Elementary Teachers
Sets, numbers and operations, problem solving and number theory. Recommended only for majors in elementary and middle school education. Pre-requisites: MA 109 (UK) or MA 111 (UK). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 202(3)
Course ID: 006632
Mathematics for Elementary Teachers
Algebraic reasoning, introduction to statistics and probability, geometry, and measurement. Pre-requisites: A grade of "C" or better in MA 201 (UK). Also recommended: a course in logic (e.g. PHI 120) or a course in calculus (e.g. MA 123 (UK)). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 213(4)
Course ID: 006633
Calculus III
MA 213 is a course in multivariate calculus. Topics include three dimensional vectors calculus, partial derivatives, double and triple integrals, sequences, and infinite series. Lecture, 3 hours; recitation, 2 hours per week. Pre-requisites: MA 114 (UK) or equivalent. Lecture: 3.0 credits (45 contact hours). Discussion: 1.0 credit (30 contact hours).
Components: Discussion, Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 214(3)
Course ID: 006634
Calculus IV
MA 214 is a course in ordinary differential equations. Emphasis is on first and second order equations and applications. The course includes series solutions of second order equations and Laplace transform methods. Pre-requisites: MA 213 or equivalent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MA 241(3)
Course ID: 006635
Geometry for Middle School Teachers
A course in plane and solid geometry designed to give middle school mathematics teachers the knowledge needed to teach a beginning geometry course. Cannot be counted toward the mathematics minor or major. Pre-requisites: One semester of calculus or MA 201 (UK) with a grade of C or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course

MAT 11(3)
Course ID: 015623
Transitional Algebra
Provides individualized, accelerated, mastery-level progression through entry-level college mathematics pre-requisite competencies as defined by KY Council of Postsecondary Education. Note: A passing grade in this course does not necessarily indicate that all pre-requisites for all entry-level college mathematics courses have been met. Pre-requisite: KCTCS Placement Exam. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 65(3)  Course ID: 004556
Basic Algebra
Includes linear equations and inequalities, integer exponents, polynomials, factoring, equations of lines and their graphs, systems of linear equations, and applications. Pre-requisite: MAT 055 or KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics, Course Also Offered in Modules

MAT 65A(0.8)  Course ID: 007341
Linear Equations and Inequalities
Includes solving linear equations in one variable, literal equations for a specified variable, and linear inequalities. Covers writing sets using interval and set-builder notations and translating verbal statements into algebraic expressions. Pre-requisite: MAT 055 or KCTCS Placement examination. Lecture: 0.8 credits (12 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 65B(0.5)  Course ID: 007342
Polynomials
Includes the application of rules of integer exponents; addition, subtraction, and multiplication of polynomials of one or more variables, and division of polynomials of one variable. Pre-requisite: MAT 055A. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 65C(0.8)  Course ID: 007344
Factoring
Includes the factoring of polynomials by finding the greatest common factor, by grouping, and by using special products. Covers factoring general trinomials and solving polynomial equations by factoring. Pre-requisite: MAT 065C. Lecture: 0.5 credits (7.5 contact hours).

Components: Laboratory
Attributes: Remedial - Mathematics

MAT 65D(0.5)  Course ID: 007345
Systems of Linear Equations
Includes solving systems of linear equations in two variables using multiple methods; determining the slope of a line given the two points, a graph, or an equation; determining the intercepts of a line; and determining if two lines are parallel, perpendicular, or neither based on slope. Pre-requisite: MAT 055B. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 65E(0.4)  Course ID: 007349
Lines
Includes plotting points in the rectangular coordinate plane; graphing a linear equation in two variables using multiple methods; determining the slope of a line given the two points, a graph, or an equation; determining the intercepts of a line; and determining if two lines are parallel, perpendicular, or neither based on slope. Pre-requisite: MAT 065D. Lecture: 0.4 credits (6.0 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 75(4)  Course ID: 015659
Mathematical Literacy
Develops the mathematical thinking skills and understanding needed for non-math and non-science majors, in a one-semester course integrating numeracy, proportional reasoning, algebraic reasoning, and functions. Provides an alternate path to college-level math courses other than college algebra. Pre-requisite: MAT 055 or equivalent as determined by KCTCS placement examination. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 83(3)  Course ID: 007045
Intermediate Algebra
Includes rational expressions, radical expressions, rational exponents, graphing parabolas, inequalities, equations of lines, functions and applications, with emphasis on solving quadratic, rational, and radical equations. Pre-requisite: MAT 065 or MAT 075 or KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 98(1 - 2)  Course ID: 015815
Supplemental Mathematics
Provides academic support for students scoring below the system-wide standard into a quantitative-reasoning course. Serves as supplemental co-requisite for students with borderline test scores, as defined in the KCTCS course placement policy. If students withdraw from MAT 096, they must also withdraw from the co-requisite course. Co-requisite: A quantitative-reasoning course requiring supplemental instruction. Lecture: 1.0 - 2.0 credits (15 - 30 contact hours).

Components: Lecture
Attributes: Remedial - Mathematics

MAT 100(2)  Course ID: 002374
College Algebra Workshop
Provides parallel and supplemental review of algebra skills needed for success in college algebra for students with a Math ACT of 19-21. (Credit not available by special exam; withdrawal from MAT 100 requires withdrawal from MAT 150; can be offered pass/fail or letter grade basis.) Lecture: 2 credits (30 contact hours); Pre-requisite: Concurrent enrollment in MAT 150. NOTE: Effective Fall 2010 ACT 19.

Components: Lecture
Attributes: Other, Course Also Offered in Modules

MAT 105(3)  Course ID: 004557
Business Mathematics
Covers basic mathematical concepts as applied to finance. Includes percentages, simple and compound interest, annuities, sinking funds, depreciation, and consumer debt, including installment buying, credit cards, and mortgages. Pre-requisite: MAT 062 or MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Quantitative Reasoning AAS

MAT 110(3)  Course ID: 004558
Applied Mathematics
Includes the concepts of ratio and proportion, units and conversions, linear equations in two variables, inequalities, graphing and writing equation of a line, percents, interest, descriptive statistics, and logical symbolism. Emphasizes applications in the various technologies. Pre-requisite: MAT 062 or MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Quantitative Reasoning AAS

MAT 116(3)  Course ID: 004559
Technical Mathematics
Includes some mathematical concepts from algebra, geometry, and trigonometry and applications relevant to these topics. Includes unit conversions, variation, measurement of geometric figures, vectors, and solving right and oblique triangles using trigonometry. Emphasizes applications in the various technologies. Pre-requisite: MAT 062 or MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Quantitative Reasoning AAS

MAT 126(3)  Course ID: 002376
College Algebra
Includes algebraic concepts from algebra, geometry, and trigonometry and applications relevant to these topics. Includes unit conversions, variation, measurement of geometric figures, vectors, and solving right and oblique triangles using trigonometry. Emphasizes applications in the various technologies. Pre-requisite: MAT 062 or MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: QR - Quantitative Reasoning, Course Also Offered in Modules

MAT 146(3)  Course ID: 002375 03-JAN-2015
Contemporary College Mathematics
Serves as a course in quantitative reasoning and problem solving intended for non-science majors. Includes voting methods, finance, population growth; and at least two additional topics chosen from: apportionment, geometry, logic, probability and statistics, graph theory, number theory, game theory, and set theory. Pre-requisite: 1. Math ACT score of 19 or above. 2. Successful completion of Intermediate Algebra, MAT075, MAT 126, or equivalent, or 3. KCTCS placement exam recommendation. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: QR - Quantitative Reasoning

MAT 150(3)  Course ID: 002376
College Algebra
Includes selected topics in algebra and analytic geometry. Develops manipulative skills and concepts required for further study in mathematics. Includes linear, quadratic, polynomial, rational, exponential, logarithmic and piecewise functions, systems of equations; and an introduction to analytic geometry. (Students may not receive credit for both MAT150 and any other College Algebra or Precalculus course. Credit not available on the basis of special exam.) Lecture: 3 credits (45 contact hours); Pre-requisites: 1. Math ACT score of 22 or above, 2. Math ACT score of 19 21 with concurrent MAT 100 workshop, 3. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 4. KCTCS placement exam recommendation.

Components: Lecture
Course Equivalents: MA 109 Attributes: QR - Quantitative Reasoning, Course Also Offered in Modules

MAT 154(2)  Course ID: 000552
Trigonometry
Includes trigonometric functions, identities, multiple analytic formulas, laws of sines and cosines, graphs of trigonometric functions, and inverse trigonometric functions. Pre-requisite: Completion of a college intermediate algebra course or two years of high school algebra. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Course Equivalents: MAT 155 Attributes: QR - Quantitative Reasoning

MAT 155(3)  Course ID: 004563
Trigonometry
Includes the trigonometric functions, identities, multiple analytic formulas, laws of sines and cosines, graphs of trigonometric functions in rectangular and polar coordinates, and solving trigonometric equations. Emphasizes applications in each topic. (Students may not receive credit for both MAT155 and any other trigonometry or precalculus course.) Lecture: 3 credits (45 contact hours); Pre-requisite: 1. Math ACT score of 22 or above, 2. Math ACT score of 19 21 with concurrent MAT 150, 3. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 4. Placement exam recommendation.

Components: Lecture
Course Equivalents: Course MAT 154 Attributes: QR - Quantitative Reasoning

MAT 159(4)  Course ID: 000543
Analytic Geometry and Trigonometry
Includes trigonometric functions, trigonometric identities, graphs of trigonometric functions, and inverse trigonometric functions, polynomial and rational functions, the Algebra of functions, exponential and logarithmic functions, and systems of equations. The course is not available for credit by special examination. The course is not available for credit to persons who have received credit for college algebra or trigonometry course. Pre-requisite: Two years of high school algebra and a Math ACT score of 19 or above, or MA 108R (UK) or math placement test. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Course Equivalents: MAT 160 Attributes: QR - Quantitative Reasoning
MAT 160(5)  Course ID: 005312
Precalculus
Prepares students to enroll in a calculus sequence. Includes trigonometric functions, exponentials and logarithms, graphs, polar coordinates, conic sections, and systems of nonlinear equations. Students may not receive credit for both MAT 160 and either College Algebra or Trigonometry. Credit is not available by special examination. Lecture: 5 credits (75 contact hours). Pre-requisite: 1. Math ACT score of 23 or above, 2. Placement exam recommendation, or 3. Consent of instructor.
Components: Lecture
Course Equivalents: MAT 159
Attributes: QR - Quantitative Reasoning
MAT 165(3)  Course ID: 005313
Finite Mathematics and its Applications
Examines finite mathematics with applications to business, biology and the social sciences including linear functions and inequalities, matrix algebra, linear programming, probability with emphasis on setting up mathematical models from stated problems. Lecture: 3 credits (45 contact hours). Pre-requisite: MAT 150 or equivalent.
Components: Lecture
Attributes: QR - Quantitative Reasoning
MAT 170(3)  Course ID: 005314
Brief Calculus with Applications
Provides an introduction to differential and integral calculus with applications in biological sciences, social sciences, physical sciences, or business with an analysis of algebraic, exponential, and logarithmic functions. (Students may not receive credit for both MAT 170 and MAT 175.) Lecture: 3 credits (45 contact hours). Pre-requisite: Successful completion of MAT 150 or Math ACT 27 or above.
Components: Lecture
Attributes: QR - Quantitative Reasoning
MAT 174(4)  Course ID: 000553
Calculus I
Includes topics from analytic geometry, derivatives and integrals of elementary functions, trigonometric functions, exponential functions, and logarithmic functions, and their applications. A course in one variable calculus. Pre-requisite: MATH ACT score of 27 or above, or MAT 150 and MAT 154, or MAT 159, or consent of instructor. Lecture/Lab: 4.0 credits (75 contact hours).
Components: Lecture
Course Equivalents: MAT 175
Attributes: QR - Quantitative Reasoning
MAT 175(5)  Course ID: 005315
Calculus I
Examines one-variable calculus including limits, differentiation and integration of algebraic, trigonometric, exponential, logarithmic, hyperbolic, and inverse trigonometric functions with applications. Lecture: 5 credits (75 contact hours). Pre-requisite: 1. College Algebra and Trigonometry, or equivalent, with grades of "C" or higher, 2. Math ACT 27 or above, 3. Placement exam recommendation, or 4. Consent of instructor.
Components: Lecture
Course Equivalents: MAT 174
Attributes: QR - Quantitative Reasoning
MAT 184(4)  Course ID: 000557
Calculus II
Stresses techniques of integration and infinite series. Includes transcendental functions and polar coordinates. A continuation of MAT 174. Pre-requisite: MAT 174 with a grade of "C" or above. Lecture/Lab: 4.0 credits (75 contact hours).
Components: Lecture
Course Equivalents: MAT 185
Attributes: QR - Quantitative Reasoning
MAT 185(5)  Course ID: 005316
Calculus II
Includes applications of integration, advanced integration techniques, sequences and infinite series, and parametric and polar equations. Pre-requisite: Calculus I, or equivalent, with grade of "C" or higher, or consent of the instructor. Lecture: 5.0 credits (75 contact hours).
Components: Lecture
Course Equivalents: MAT 184
Attributes: QR - Quantitative Reasoning
MAT 190(1 - 2)  Course ID: 004584
Mathematics Workshop
Instructor Consent Required
Mathematics Workshop
Promotes student success in mathematics by providing supplemental instruction in the form of extra class sessions. Pre-requisite: Mathematics course numbered higher than MAT 100. Lab: 1.0 - 2.0 credits (30-60 contact hours).
Components: Laboratory
Attributes: Other
MAT 195(1 - 2)  Course ID: 015479
Mathematics Workshop
Instructor Consent Required
Mathematics Workshop
Promotes student success in mathematics by providing supplemental instruction in the form of extra class sessions. Co-requisite: Mathematics course numbered higher than MAT 100. Lab: 1.0-2.0 credits (30-60 contact hours).
Components: Laboratory
Attributes: Other
MAT 205(3)  Course ID: 005622
Mathematics For Elementary and Middle School Teachers I
Introduces problem solving, number and numeration systems, whole numbers, integers, rational and irrational numbers, and elementary number theory. Requires demonstration of basic skills in mathematics to receive credit in this course. Pre-requisite: MAT 146 or MAT 150 or equivalent, with a minimum grade of "C". Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other
MAT 206(3)  Course ID: 005623
Mathematics For Elementary and Middle School Teachers II
Introduces probability and statistics; geometric concepts including congruence and similarity; and measurement. Required demonstration of basic skills in mathematics to receive credit in this course. Pre-requisite: MAT 146 or MAT 150 or equivalent, with a minimum grade of "C". Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other
MAT 213(4)  Course ID: 006894
Calculus III with Linear Algebra
Examines multivariate calculus. Includes partial differentiation, multiple integration, vector calculus, and selected topics from linear algebra including matrices, linear independence of vectors, linear transformations, characteristic values and vectors. Offered primarily for STEM majors. Pre-requisite: Successful completion of Calculus II. Lecture/Lab: 4.0 credits (75 contact hours).
Components: Lecture
Attributes: Other
MAT 214(3)  Course ID: 006895
Calculus IV
Focuses primarily first and second order equations. Includes matrix solutions of systems of linear differential equations, both homogeneous and nonhomogeneous. Also includes series solutions, Bessel equations, Laplace transforms, and operator methods. Primarily for STEM majors. Pre-requisite: Successful completion of Calculus III with Linear Algebra. Lecture: 3.0 credits (75 contact hours).
Components: Lecture
Attributes: Other
MAT 261(3)  Course ID: 003966
Introduction to Number Theory
Investigates topics from classical number theory, including discussions of mathematical induction, prime numbers, division algorithms, congruences, and quadratic reciprocity. Pre-requisite: Consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning
MAT 275(4)  Course ID: 005318
Calculus III
Examines multivariate calculus including parametric equations; rectangular, cylindrical, and spherical coordinate systems; vectors and vector-valued functions, limits and derivatives of functions of several variables; multiple integration; and line and surface integrals. Pre-requisite: MAT 185 or equivalent, or Consent of instructor. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning
MAT 285(3)  Course ID: 005319
Differential Equations
Examines ordinary differential equations emphasizing first and second order equations and applications. Includes series solutions of second order equations and Laplace transform methods. Pre-requisite: MAT 275 or Consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning
MAT 851(0.3)  Course ID: 007329
Equations of Lines
Covers the writing equations of lines from given data, verbal descriptions, and graphs; and writing the equation of a line parallel or perpendicular to a given line. Pre-requisite: MAT 065, or MAT 075 or KCTCS placement examination. Lecture: 0.3 credits (4.5 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 852(0.6)  Course ID: 007330
Absolute Value and Inequalities
Includes solving absolute value equations, compound inequalities, solving and graphing absolute value inequalities, and graphing linear inequalities in two variables. Pre-requisite: MAT 0851. Lecture: 0.6 credits (9.0 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 853(0.4)  Course ID: 007331
Rational Expressions
Includes the simplification of rational expressions, performing basic operations with rational expressions, and solving equations with rational expressions. Pre-requisite: MAT 0852. Lecture: 0.4 credits (6.0 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 854(0.6)  Course ID: 007332
Radicals
Covers the conversion between radical and rational exponent form, simplification of radicals, performance of operations with radicals, and the solution of equations involving radicals. Pre-requisite: MAT 0853. Lecture: 0.6 credits (9.0 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 855(0.3)  Course ID: 007333
Quadratics
Includes solving quadratic equations with complex solutions using completing the square and the quadratic formula. Covers graphing parabolas by finding the vertex, finding the axis of symmetry, and plotting points. Pre-requisite: MAT 0854. Lecture: 0.3 credits (4.5 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 858(0.8)  Course ID: 007334
Functions
Includes the evaluation of a function using function notation, determination of whether a given correspondence or graph represents a function, determination of the domain of a function, [and] identification of the range of a function. Includes modeling and solving applications based on linear, quadratic, and exponential functions. Pre-requisite: MAT 0855. Lecture: 0.8 credits (12 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics
MAT 1101(0.7) Course ID: 006142
Logic and Reasoning
Investigates concepts of logical symbolism, valid and invalid arguments. Uses applications throughout. Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 0.7 credit (10.5 contact hours).
Components: Lecture

MAT 1102(0.8) Course ID: 006143
Statistics
Develops concepts of descriptive statistics. Emphasizes applications throughout. Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

MAT 1103(0.7) Course ID: 006144
Algebra and Graphing
Develops concepts of ratio and proportion, linear equations in two variables, inequalities, graphing and writing the equation of a line. Emphasizes applications throughout. Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 0.7 credit (10.5 contact hours).
Components: Lecture

MAT 1104(0.8) Course ID: 006145
Consumer Math, Geometry and Measurement
Develops concepts of ratio and proportion, measurement, units and conversions, percents and interest. Emphasizes applications throughout. Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

MAT 1161(1) Course ID: 006438
Technical Trigonometry
Investigates mathematical concepts from trigonometry including vectors and solving right and oblique triangles. Uses applications relevant to trigonometry from the various technologies. Pre-requisite: MAT 65 or equivalent as determined by KCTCS placement examination. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

MAT 1162(1) Course ID: 006439
Technical Measurement
Investigates mathematical concepts from algebra and geometry. Uses applications from the various technologies relevant to these topics including unit conversion and measurement of geometric figures. Pre-requisite: MAT 65 or equivalent as determined by KCTCS placement examination. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

MAT 1163(1) Course ID: 006440
Technical Geometry and Variation
Investigates mathematical concepts from algebra and geometry. Uses applications from the various technologies relevant to these topics including variation and measurement of geometric figures. Pre-requisite: MAT 65 or equivalent as determined by KCTCS placement examination. Lecture: 1.0 credit (15 contact hours)
Components: Lecture

MAT 1461(0.4) Course ID: 015855
Voting Theory
Explain voting theory and describe voting methods. Pre-requisite: Math ACT score of 19 or above. 2. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 3. KCTCS placement exam recommendation. Lecture: 0.4 credits (6 contact hours)
Components: Lecture

MAT 1462(1.1) Course ID: 015856
Finance
Analyze finances, calculate compound interest, analyze savings plans and investments, calculate installment loan payments, calculate income taxes, and analyze budgets. Pre-requisite: MAT 1461. Lecture: 1.1 credits (16.5 contact hours)
Components: Lecture

MAT 1463(0.5) Course ID: 015857
Population Growth
Calculate linear, exponential, and logarithmic growth. Pre-requisite: MAT 1462. Lecture: 0.5 credits (7.5 contact hours)
Components: Lecture

MAT 1464(1) Course ID: 015858
Contemporary Math Special Topics
Analyze concepts and perform calculations in at least two of the special topics in contemporary college mathematics: Apportionment, probability and statistics, geometry, logic, graph, theory, number theory, game theory and set theory. Pre-requisite: MAT 1463. Lecture: 1.0 credits (15 contact hours)
Components: Lecture

MAT 1501(0.8) Course ID: 006146
Linear and Quadratic Functions
Develops manipulative skills and concepts of linear and quadratic functions required for further study in mathematics. Includes systems of equations. Students may not receive credit for both MAT 150 and any other College Algebra or Precalculus course. Credit not available on the basis of a special exam. Pre-requisite: Math ACT score of 22 or above. Successful completion of Intermediate Algebra or MAT 120 or equivalent; or KCTCS placement exam recommendation. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

MAT 1502(0.8) Course ID: 006147
Polynomial, Rational and Piecewise Functions
Develops manipulative skills and concepts of polynomial, rational and piecewise functions required for further study in mathematics. Students may not receive credit for both MAT 150 and any other College Algebra or Precalculus course. Credit not available on the basis of a special exam. Pre-requisite: MAT 1501. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

MAT 1503(0.8) Course ID: 006148
Exponential and Logarithmic Functions (Exponential & Logarithmic Fnc)
Develops manipulative skills and concepts of exponential and logarithmic functions required for further study in mathematics. Students may not receive credit for both MAT 150 and any other College Algebra or Precalculus course. Credit not available on the basis of a special exam. Pre-requisite: MAT 1502. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

MAT 1504(0.6) Course ID: 006149
Applications of Functions
Includes selected topics in algebra and analytic geometry. Develops manipulative skills and concepts required for further study in mathematics. Includes an introduction to analytic geometry. Students may not receive credit for both MAT 150 and any other College Algebra or Precalculus course. Credit not available on the basis of a special exam. Pre-requisite: MAT 1503. Lecture: 0.6 credit (9 contact hours)
Components: Lecture

MAT 1701(0.6) Course ID: 016157
Limits
Approximate limits graphically and numerically; evaluate limits analytically; list the conditions for the continuiy of a function at a point; determine if a function is continuous or discontinuous at a point; determine the intervals of continuity of a function; and evaluate infinite limits and limits at infinity. Pre-requisite: Successful completion of MAT 150 or Math ACT 27 or above. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

MAT 1702(0.8) Course ID: 016158
Differentiation
Define the derivative of a function; evaluate the derivative of a function using the definition; evaluate the derivative of a function using differentiation rules for algebraic functions and the product, quotient, and chain rules; use the derivative of a function to find the equation of a tangent line; perform implicit differentiation; define the differential; and use differentials to approximate function values. Pre-requisite: MAT 1701. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

MAT 1703(0.6) Course ID: 016159
Differentiation Applications
Determine critical points; determine intervals on which a function is increasing or decreasing; identify relative extrema; identify inflection points and intervals on which a function is concave up or concave down. Solve application problems involving relative rates and optimization for biological, social, or physical sciences and business. Determine whether a function is differentiable at a point. Find the derivative of functions including polynomial, rational, root, exponential, and logarithmic functions. Pre-requisites: MAT 1702. Lecture: 0.6 credits. (9 contact hours).
Components: Lecture

MAT 1704(0.5) Course ID: 016160
Integration
Discuss the fundamental theorem of calculus. Find the average value of a function. Find indefinite and definite integrals of a function using integration rules for algebraic functions. Find definite and indefinite integrals using substitution. Pre-requisite: MAT 1703. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

MAT 1705(0.5) Course ID: 016161
Applications of Integration
Use definite integrals of find the area under a curve and between two curves. Find the integral of functions using polynomial, rational, root, exponential, and logarithmic functions. Solve application problems using integrals for biological, social, and physical sciences or business. Pre-requisite: MAT 1704. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

MAI Medical Assisting

MAI 105(3) Course ID: 004342
Introduction to Medical Assisting
Introduces rights, roles, responsibilities and functions of the medical assistant including personal and professional awareness, communication, interpersonal relationships, psychological concepts, ethics and legalities. Lecture: 3 credits (45 contact hours). Pre-requisite: Acceptance into the Medical Assisting program or consent of Medical Assisting Coordinator/Director.
Components: Lecture
Attributes: Technical

MAI 120(3) Course ID: 004090
Medical Assisting Laboratory Techniques I
Introduces theory and practical application in the physician’s office laboratory including anatomy and physiology, patient preparation, specimen collection and transport, processing and testing, blood collection and prevention of disease transmission. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours). Pre-requisite: Acceptance into the Medical Assisting Program or consent of Medical Assisting Coordinator/Director.
Components: Laboratory, Lecture
Attributes: Technical

MAI 140(4) Course ID: 004091
Medical Assisting Clinical Procedures I
Introduces clinical skills and techniques used in the physician’s office for patient examination, diagnosis and treatment. Introduces concepts related to electronic health records (EHR). Presents principles and practical applications related to medical asepsis, infection control, vital signs, routine and specialty patient examinations, diagnostic testing, and treatments with an emphasis on OSHA regulations. Pre-requisite: Acceptance into the Medical Assisting Program or Consent of Medical Assisting Coordinator/Director. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
MAI 150(3) Course ID: 004092
Medical Assisting Administrative Procedures I
Provides knowledge of the duties required in an office with emphasis placed on a medical office environment. Course content includes communication with patients and co-workers, completion of medical office forms, telephone techniques, filling office correspondence, mail processing, appointment scheduling, processing medical records, and an introduction to medical office computer software. Lecture: 3 credits (45 contact hours). Pre-requisite: Acceptance into the Medical Assisting program or consent of Medical Assisting Coordinator/Director.
Components: Lecture Attributes: Technical

MAI 170(2) Course ID: 004093
Department Consent Required
Dosage Calculations
Provides a review of basic mathematical skills related to dosage calculations, a thorough knowledge of the systems of measurement and conversion, and application skills to perform dosage calculations. Lecture: 2 credits (30 contact hours). Pre-requisite: Consent of Medical Assisting Coordinator/Director.
Components: Lecture Attributes: Technical

MAI 200(3) Course ID: 004094
Pathophysiology for the Medical Assistant
Provides instruction related to common acquired diseases, congenital conditions, injuries, illnesses, and trauma situations as related to the major body systems. Pre-requisite: (BIO 135 or BIO 137 and BIO 139) and (CLA 131 or AHS 115 or AHS 120 or MIT 103) or Consent of Medical Assisting Coordinator/Director. All pre-requisites must be achieved with a grade of "C" or greater. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

MAI 220(3) Course ID: 004095
Medical Assisting Laboratory Techniques II
Relates to laboratory procedures waived complexity testing performed in the physician's office laboratory. Stresses CLIA and OSHA regulations. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours). Pre-requisite: MAI 120 with a grade of "C" or greater.
Components: Laboratory, Lecture Attributes: Technical

MAI 230(3) Course ID: 004096
Department Consent Required
Medical Insurance
Introduces fundamentals of insurance processing and coding for the medical office, with focus on proper procedures for accurate coding systems using the ICD, CPT and HCPCS coding system. Lecture: 3 credits (45 contact hours). Pre-requisite: Consent of Program Coordinator/Director.
Components: Lecture Attributes: Technical

MAI 240(4) Course ID: 004097
Medical Assisting Clinical Procedures II
Continues instruction and application techniques for specialty examination, diagnostic testing and treatment modalities. Emphasizes fundamentals and practical applications of minor office surgical procedures. Lecture: 3 credits (45 contact hours); Lab: 1 credit (45 contact hours). Pre-requisite: MAI 140 with a grade of "C" or greater OR Consent of Program Coordinator.
Components: Laboratory, Lecture Attributes: Technical

MAI 250(3) Course ID: 004098
Medical Assisting Administrative Procedures II
Focuses on completion and continuing financial and insurance claim forms. Includes banking concepts, accounting systems frequently used in the medical office, payment procedures, insurance plans and claims, paper and electronic billing methods, and professional fees. Pre-requisite: MAI 150 with a grade of "C" or greater OR Consent of Program Coordinator. Lecture:Lab: 3.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical

MAI 270(3) Course ID: 004100
Pharmacology for the Medical Assistant
Examines pharmacology with concentration on prescriptions, drug nomenclature, classification of drugs, patient education, medication preparation and administration. Pre-requisite: MAI 170 and (BIO 135 or BIO 137 and BIO 139) and (AHS 115 or AHS 120 or CLA 131 or MIT 103) with a grade of "C" or better or Consent of Medical Assisting Program Coordinator/Director. Lecture: 2.0 credits (30 contact hours), Lab: 1.0 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

MAI 281(1) Course ID: 004101
Medical Assisting Practicum
Provides introductory practical experience (unpaid) through observation and work assignments in a healthcare setting. Clinical: 1 credit (50 contact hours). Pre-requisite: Consent of Medical Assisting Program Coordinator/Director.
Components: Clinical Attributes: Technical

MAI 282(3) Course ID: 004102
Medical Assisting Externship
Allows the student to apply knowledge, perform administrative and clinical procedures, and develop professional attitudes for interacting with other professionals and consumers in the health care field by means of externship assignments (unpaid). Pre-requisite: MAI 281 and Consent of Medical Assisting Program Coordinator/Director. Clinical: 3.0 credits (180 contact hours).
Components: Clinical Attributes: Technical

MAI 284(2 - 3) Course ID: 015672
Medical Assisting Externship
Allows the student to apply knowledge, perform administrative and clinical procedures, and develop professional attitudes for interacting with other professionals and consumers in the health care field by means of externship assignments (unpaid). Pre-requisite: MAI 281 and Consent of Medical Assisting Program Coordinator/Director/Practicum. 2.0 - 3.0 credits (120-180 contact hours).
Components: Practicum Attributes: Technical

MAI 299(1 - 4) Course ID: 004341
Instructor Consent Required
Selected Topics: Medical Assisting: (Topic)
Various medical assisting topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of six credit hours. Lecture: varies; Laboratory: varies. Pre-requisite: Consent of instructor.
Components: Laboratory, Lecture Attributes: Technical

MBS 100(2) Course ID: 001673
Introduction to the Health Care Field
This course is designed to acquaint/teach the student with legal issues and ethical concerns as they apply to the patients’ medical records. *Student must maintain a 2.0 GPA in A&P to continue in the program. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

MBS 110(6) Course ID: 001676
Medical Insurance and Claims Processing
Provides an in-depth knowledge of the various insurance programs, rules, regulations and guidelines, and follow-up for Medicare, Medicaid, Commercial Insurance, and managed care (HMO), and complete insurance forms manually for reimbursement. Lecture: 6 credits (90 contact hours). Pre-requisite: (AHS 109 or BIO 130 or 135) or (BIO 137 and BIO 130) and (AHS 115 or CLA 131 or OST 103) and Computer Literacy and MBS 100 with a grade of "C" or better) or consent. Corequisite: MBS 120.
Components: Lecture Attributes: Technical

MBS 120(8) Course ID: 001678
Coding for Reimbursement
Prepares the student to code for optimum reimbursement using the ICD, CPT, and HCPCS codes for patient diagnoses and procedures. Pre-requisite: (AHS 109 or BIO 130 or 135 or (BIO 137 and BIO 130) and (AHS 115 or CLA 131 or OST 103) and Computer Literacy and MBS 100) with a grade of C or better) or consent. Corequisite: MBS 110.
Components: Lecture Attributes: Technical

MBS 199(1 - 8) Course ID: 001680
Internship
Applies practical knowledge to the outpatient healthcare setting. The student will be assigned a healthcare preceptor at the affiliate site. *This course may be taken for 1-8 credits. Pre-requisites: (MBS 110 and MBS 120 or Consent
Components: Practicum Attributes: Technical

ME 205(3) Course ID: 004291
Introduction to Computer Graphics
Combines freehand sketching techniques, both orthographic and pictorial, and the use of a solid modeling program to describe and define mechanical objects using current industrial standards. An introduction to basic dimensioning and tolerancing techniques is included. Lecture: 2 hours, Laboratory: 4 hours per week.
Components: Laboratory, Lecture Attributes: Technical

ME 220(3) Course ID: 000837
Engineering Thermodynamics I
Fundamental principles of thermodynamics. Pre-requisite: PHY 231. Pre-requisite or concurrent: MA 214. Lecture: 3 credits (45 contact hours)
Components: Lecture Attributes: Technical

MES 110(4) Course ID: 005485
Mechatronic Systems Electrical Components
Introduces the systems approach to the operation of electrical components and the relationship to voltage, current, resistance, and power in industrial systems. Provides an overview of alternating and direct current fundamentals. Pre-requisite: (COMPASS Scores of Pre-Alg-31; Reading-70; English-39) or (ACT Score of 19 in Math and Reading and 18 in English). Lecture: 3.0 credits (45 contact hours) Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

MES 120(4) Course ID: 005486
Mechatronic Systems Mechanical Components
Introduces the systems approach to the operation of mechanical components and the relationship of their application in industrial systems. Provides an overview of rotating machinery fundamentals. Pre-requisite: (COMPASS Scores of Pre-Alg-31; Reading-70; English-39) or (ACT Score of 19 in Math and Reading and 18 in English). Lecture: 3.0 credits (45 contact hours) Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

MES 130(4) Course ID: 005487
Mechatronic Systems Hydraulic / Pneumatic Components
Introduces the systems approach to the operation of hydraulic/pneumatic components and the relationship of their application in industrial systems. Provides an overview of digital fundamentals. Pre-requisite: (COMPASS Scores of Pre-Alg-31; Reading-70; English-39) or (ACT Score of 19 in Math and Reading and 18 in English) Lecture: 3.0 credits (45 contact hours) Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical
MES 150(4)  Course ID: 005488
Mechatronics Systems Programmable Logic Controllers
Introduces the systems approach to the operation of Programmable Logic Control components and the relationship of their application in industrial systems. Provides an overview of Programming fundamentals. Pre-requisite: (COMPASS Scores of Pre-Alg 31; Reading 70; English 39) or (ACT Score of 19 in Math and Reading 18 and English) Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

MFG Manufacturing

MFG 102(4 - 6)  Course ID: 015604
Certified Production Technician
Provides industry-led training, assessment, and certification system focused on the industry-wide core skills and knowledge needed by the nation’s production workers. Includes the nationwide Manufacturing Skill Standards Council (MSSC) System, based upon federally-endorsed standards. Offers both entry-level and incumbent workers the opportunity to demonstrate that they have mastered the skills increasingly needed in the high-growth, technology-intensive jobs of the 21st century. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 - 3.0 credits (30 - 90 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

MFG 125(3)  Course ID: 006669
Fundamentals of Mechatronics A
Introduces the student to the basics of Mechatronics systems and the operation of electrical, mechanical, pneumatic/hydraulic, and Programmable Logic Control components in an advanced manufacturing system. Presents a detailed explanation of the relationships of voltage, current, resistance, power, the operation of mechanical, pneumatic/hydraulic components, and programming fundamentals in industrial systems. Includes an overview of the fundamentals of alternating and direct current, rotating machinery, digital devices, and programming. (Credit may not be earned for this course if the student has earned credit for MFG 135). Pre-requisite: ENGT 110 and at least five other hours of approved technical electives (see Manufacturing Engineering Technology technical elective list) or consent of instructor. Lecture/Lab: 3 credit hours (60 contact hours).
Components: Lecture
Attributes: Technical

MFG 130(3)  Course ID: 006670
Fundamentals of Mechatronics B
Combines previously learned basic operational and analytical skills as related to a Mechatronics/Advanced Manufacturing system. Applies concepts to a complete advanced manufacturing system wherein various subsystems are collectively used to build a more complex manufacturing system. Teaches the students to troubleshoot a multitude of problems involved in electrical, mechanical, and hydraulic/pneumatic systems. (Credit may not be earned for this course if the student has earned credit for MFG 135). Pre-requisite: MFG 125 Fundamentals of Mechatronics A or consent of instructor. Lecture/Lab: 3 credit hours (60 contact hours).
Components: Lecture
Attributes: Technical

MFG 135(6)  Course ID: 006671
Fundamentals of Mechatronics
Introduces the student to the basics of Mechatronics systems and the operation of electrical, mechanical, pneumatic/hydraulic, and Programmable Logic Control components in an advanced manufacturing system. Combines basic operational and analytical skills with critical thinking and applied troubleshooting. Teaches the students to troubleshoot a multitude of problems involved in typical electrical, mechanical, and hydraulic/pneumatic systems. (Credit may not be earned for this course if the student has earned credit for MFG 125 or MFG 130). Pre-requisite: ENGT 110 and at least five other hours of approved technical electives (see Manufacturing Engineering Technology technical elective list) or consent of instructor. Lecture/ Lab: 6 credit hours (120 contact hours).
Components: Lecture
Attributes: Technical

MFG 175(2)  Course ID: 006672
Lean Operations
Introduces students to the principles and practices of lean operations. Emphasizes a lean simulation and examples from Toyota and other lean practitioners to introduce students to lean practices. Discusses Total Productive Maintenance. Lecture/ Lab 2 credit hours (30 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MFG 265(4)  Course ID: 000713
Robotics and Industrial Automation
A study of principles and techniques used in automated industrial systems are studied. Emphasis is placed on programming, applications, and interfacing of automated machinery to manufacturing workcells. Lecture: 3 hours; Laboratory: 2 hours. Pre-requisite: ET 256 or consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical

MFG 1751(0.5)  Course ID: 006673
Lean Simulation
Uses a lean simulation to introduce students to lean practices. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

MGT Management

MGT 101(3)  Course ID: 004892
Quality Management Principles
Students are introduced to fundamental concepts, principles, and practices used to improve quality in organizations. The need for organizational change is reviewed and paradigms of quality are introduced. An overview of areas of change, methods of quality planning and methods for implementing quality policies are provided. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 120(3)  Course ID: 004897
Personal Finance
Information needed to make intelligent choices and take effective action in the management of personal resources is provided. Topics include financial planning, buying, borrowing, saving, budgeting, investing, insurance, and taxes. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 160(3)  Course ID: 004899
Introduction to Business
Business careers, terminology, and the interrelationships and complexities of business are introduced and examined in this survey course. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 200(3)  Course ID: 004900
Small Business Management
Students are introduced to the many facets of establishing, operating and/or owning a small business. Topics include legal forms of business organization, finance, accounting, insurance, governmental regulations and assistance, economics, marketing, and management principles. Pre-requisite: MGT 160 or B&E 100, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: BAS 200
Attributes: Technical

MGT 240(3)  Course ID: 005460
Business Ethics and Self Management
Emphasizes the need for managers to be self-directed to make ethical decisions. Explores moral principles, community standards and the ethics of decision making at personal and professional levels. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 256(3)  Course ID: 004901
Operations Management
Concepts and methods for economical planning and control of activities required for transforming a set of inputs into specified goods or services are introduced. Emphasis is given to forecasting, decision analysis, cost analysis, design of production systems, production/marketing relationships, operations planning and control, and the importance of global competitiveness. Pre-requisite: MGT 283 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 258(3)  Course ID: 006642
Project Management
Provides tools used in project management to accomplish the goals of society’s varied organizations. Provides insight into human behavior, knowledge of organizational issues, and skill with quantitative methods to allow successful project management. Pre-requisite: MGT283. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 267(3)  Course ID: 004913
Introduction to Business Law
The student is introduced to the state and federal court systems, tort and criminal law, law of contracts, partnerships, sale of goods, government regulations, bailments and negotiable instruments. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 274(3)  Course ID: 004914
Human Resource Management
The student is introduced to the basic methods of recruiting, selecting, training, compensating, and maintaining a productive workforce. Concepts of effective employee relations including collective bargaining, contract administration, and safety and health programs are introduced. Techniques for systematic human resource planning and development of policies consistent with government regulations are emphasized. Pre-requisite: MGT 283 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 283(3)  Course ID: 004916
Principles of Management
The functional framework of planning, organizing, leading, and controlling is utilized to introduce the management process. The interdisciplinary nature of management theory is introduced also, with the inclusion of relevant aspects of human behavior and rational decision making. Pre-requisite: BA 100 or MGT 160, B&E 100 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
MIT 284(3)  Course ID: 004917
Applied Management Skills
A capstone course in which management theories and techniques are applied with emphasis on the action-skills that managers need for success. Course topics include delegation, motivating employees, team-building, conflict management, coaching and managing change. Pre-requisite: BE 283/MIT 283 or prior supervisory experience. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 287(3)  Course ID: 005217
Supervisory Management
Students study the roles and responsibilities of the supervisor, emphasizing human relations skills while recognizing the behavioral factors of individuals and groups in the work environment. Conceptual knowledge and skills to support the supervisor’s role and responsibilities are identified and developed. Pre-requisite: MGT 283 or consent of the instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MGT 288(3)  Course ID: 004918
Self-Management
The need for managers to be self-directed before they can manage successfully the work of others is emphasized. Contemporary approaches to developing the behavioral skills needed to improve personal effectiveness are explored. Topics include personal planning and goal setting, time management, stress management, interpersonal and human relations skills. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 103(3)  Course ID: 004510
Medical Office Terminology
Introduces students to medical terminology including familiar elements, body systems, operative procedures, pharmacology, and methods of researching medical information including, but not limited to, names and descriptions of diseases and drugs. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 104(3)  Course ID: 004103
Medical Insurance
Introduces students to the basics of medical insurance including: insurance terminology, various coding systems, government programs, and general insurance procedures. Pre-requisite Or Co-requisite: MIT 103 or AHS 115 or CLA 131. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 106(3)  Course ID: 004104
Introduction to Medical Transcription
Provides experience in transcription of basic medical dictation: incorporating English usage, transcription skills, medical knowledge, and proofreading and editing skills while meeting progressively demanding accuracy and productivity standards. Pre-requisite: Computer Literacy course and OST 110 and (ENG 101 or OST 108) and (AHS 115 or CLA 131 or MIT 103). Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 204(3)  Course ID: 004105
Medical Coding
Develops medical coding skills using government mandated coding systems as applied. Includes other reimbursement methods and medical insurance concepts. Pre-requisite Or Co-requisite: MIT 104, BIO 135 or Equivalent. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 205(3)  Course ID: 004509
Advanced Medical Coding
Applies advanced coding rules for various coding systems and applies the rules to code patient services for a variety of payment systems emphasizing payment fraud and/ or abuse. Pre-requisite: MIT 204. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 206(3)  Course ID: 004106
Medical Transcription
Applies advanced concepts of medical transcription and provides advanced practice. Pre-requisite: MIT 106 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 208(3)  Course ID: 004507
Instructor Consent Required
Pre-requisite: Consent of Instructor.

MIT 212(1)  Course ID: 004506
Medications
Introduces the student to Pharmacology; the most commonly used drugs, their names, and classification; and drug reference books while stressing spelling. Pre-requisite: (MIT 103 or AHS 115 or CLA 131) or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

MIT 213(3)  Course ID: 004107
Medical Office Procedures
Provides a working knowledge of the duties required in a medical office. Includes professional and career responsibilities, interpersonal communication, administrative responsibilities, and financial administration. Pre-requisite Or Co-requisite: OST 110. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 219(3)  Course ID: 006970
Coding Exam Preparation
Designed to prepare medical coding students to take a certifying exam to become a professional outpatient coder as offered by AAPC or PHIA. Includes outpatient coding cases and review of medical terminology, basic anatomy, basic pathophysiology, reimbursement issues, and advanced coding guidelines for CPT, ICD-9-CM, and HCPCS coding systems. Pre-requisite: (MIT 204 and MIT 205) or MBS 120. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 223(3)  Course ID: 004108
Medical Office Software
Provides a working knowledge of computer management software in a simulated medical office setting. Pre-requisite: (MIT 103 or AHS 115 or CLA 131) and Computer Literacy. Co-requisite: MIT 217. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 224(3)  Course ID: 016402
Medical Practice Management
Introduces students to medical practice management from roles of staff members in healthcare to skills and responsibilities of the manager in relation to compliance and regulatory agencies. It identifies the requirements of managing the revenue cycle, compliance regulations, human resources, health information, and the general business processes. Pre-requisite Or Co-requisite: MIT 230, MIT 217, MIT 104. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 226(3)  Course ID: 006340
Electronic Medical Records
Develops medical coding skills using government mandated coding systems as applied. Includes other reimbursement methods and medical insurance concepts. Pre-requisite: MIT 217. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIT 228(3)  Course ID: 004109
Medical Information Management
Components: Lecture
Attributes: Technical

MIT 230(3)  Course ID: 006971
Medical Information Technology Capstone
Enhances the student's transition from class to work by providing unpaid learning activities related to the MIT field. Integrates work experience with academic instruction. Includes an internship, field experiences, and/ or simulated work experiences in which the student applies previously or concurrently learned concepts to practical work situations within the MIT field. Pre-requisite: Consent of Program Coordinator. Lecture: 1.0 credit (15 contact hours), Practicum: 2.0 credits (120 credit hours).
Components: Lecture, Practicum
Attributes: Technical

MIT 295(3)  Course ID: 007326
Medical Information Technology Internship
Enhances transition from school to work by providing non-paid work experience which provides the opportunity to apply acquired occupational skills in a realistic setting. Requires approval of the MIT Program Coordinator. Pre-requisite: Consent of Program Coordinator. Practicum: 1.0 - 3.0 credits (45-135 contact hours).
Components: Practicum
Attributes: Technical

MIT 296(1 - 3)  Course ID: 016393
Intro to Med Terms & Systems
Introduces medical terminology including root words, prefixes and suffixes as well as general medical terms. Introduces medical terms related to the skeletal, muscular, blood, lymph, cardiovascular and respiratory systems. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

MIT 103(1)  Course ID: 004104
Medical Practice Management
Introduces students to medical practice management from roles of staff members in healthcare to skills and responsibilities of the manager in relation to compliance and regulatory agencies. It identifies the requirements of managing the revenue cycle, compliance regulations, human resources, health information, and the general business processes. Pre-requisite Or Co-requisite: MIT 230, MIT 217, MIT 104. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MIL 101(2)  Course ID: 015681
Military Mountaineering and Leadership
This course is designed to be an introductory course to military science with emphasis on the following: Goal-setting, Physical Fitness Planning, Stress and Time Management. Mountaineering (which includes terminology, tools, and skills, rope management, knots, and rappelling/belaying techniques), and Basic Marksmanship. Additionally, cadets will receive an overview of Army Officerhip and the leadership skills necessary to succeed in any chosen career. Special attention will be given to the opportunities afforded an Army officer. Satisfactory completion of this course may be used to fulfill a General Education Category F requirement at Western Kentucky University (WKU). Lecture: 2.0 credits (2 contact hours).
Components: Lecture
Attributes: University Course (Western Kentucky University)
MIT 1032(1)  Intermediate Body Systems
Introduces medical terms related to the blood, lymph, cardiovascular, respiratory, digestive and urinary systems as well as skin. Pre-requisite: MIT 1031. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 1033(1)  Diagnostics and Pharmacology
Introduces the nervous, endocrine, reproductive systems as well as eyes and ears. Introduces medical terms related to pharmacology and diagnostic and imaging procedures. Pre-requisite: MIT 1032. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 1041(1)  Intro to Medical Insurance
Introduces the basics of medical insurance including: insurance terminology and government programs. Pre-requisite OR Co-requisite: MIT 103 or MIT 1033 or AHS 115 or CLA 131. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 1042(1)  Medical Coding Overview
Introduces various coding systems. Pre-requisite: MIT 1041. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2041(1)  Coding Systems
Develops medical coding skills using government mandated coding systems. Includes review of health records, selection of codes, interaction with physicians, and more. Pre-requisite: MIT 104 or Consent of instructor. Co-requisite: BIO 135 or Equivalent; MIT 104. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2042(1)  Inpatient Coding
Develops medical coding skills for inpatient coding systems. Includes reimbursement methodologies and advanced coding practices for inpatient coding. Pre-requisite: MIT 2041 or Consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2043(1)  Outpatient Coding
Develops medical coding skills for outpatient coding systems. Includes reimbursement methodologies and advanced coding practices for outpatient coding. Pre-requisite: MIT 2042 or Consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2281(1)  Intro to E-Health Records
Provides an introduction to electronic health records and gives students a working knowledge of industry-standard electronic medical records software program emphasizing ethical and regulatory issues and methods. Pre-requisite: MIT 227 or consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2282(1)  Clinical Office Administration
Provides a working knowledge of computerized medical records software to simulate tasks including to create/ maintain patient records and maintain office scheduling. Pre-requisite: 2281 or consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2283(1)  Clinical Tools and Procedures
Provides a working knowledge of computerized medical records software to complete scenario based projects to use templates and create/analyze reports. Emphasizes test and diagnosis codes. Pre-requisite: 2282 or consent of instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2301(1)  Intro to Medical Info Mgmt
Identify rules and regulations of medical filing systems and procedures. Pre-requisite: Digital Literacy. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2302(1)  Applied Medical Info Mgmt
Apply rules and regulations of medical filing systems and procedures. Emphasizes management of both hard copy and magnetic media using alphanumeric, numeric, chronologic, and color-coded filing systems. Pre-requisite: MIT 2301. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MIT 2303(1)  Records Mgmt/Legal Issues
Master file retention and archiving. Discusses legal and ethical aspects of medical records. Reinforces rules and regulations of medical filing systems and procedures. Pre-requisite: MIT 2302. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MKT 100(3)  Introduction to Marketing
This course introduces the essentials of marketing for small and large organizations and develops concepts such as publicity, promotion, and market research; while emphasizing the importance of communication, interpersonal and management skills. (Keyboarding recommended) Lecture: 3. credits (45 contact hours).
Components: Lecture

Attributes: Technical

MKT 155(3)  Personal Selling
The professional selling process which involves a series of interrelated activities is introduced. Emphasis is placed on planning and delivery of sales presentations. The six selling steps are examined - prospecting, qualifying, presenting, answering objections, closing, and the after-sale service. Students demonstrate effective sales techniques through simulation and role playing. Lecture: 3 credits (45 contact hours).
Components: Lecture

Attributes: Technical

MKT 202(3)  Principles of Marketing
The marketing function is introduced and applied to various types of businesses with attention to the marketing concept. Topics include the marketing mix of product, price, promotion, and distribution decisions; international marketing; and social responsibility. Pre-requisite: MGT 160 or B&E 100, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture

Attributes: Technical

MKT 291(3)  Retail Management
Retail structure, merchandising, promotions, store control, and decision making are examined in this course. Fundamental principles of store organization, consumer behavior, and customer service are addressed. Retailing trends, opportunities, and problems are included also. Lecture: 3 credits (45 contact hours).
Components: Lecture

Attributes: Technical

MKT 293(3)  Buying and Merchandising
Decision making strategies are used to solve problems inherent in merchandise selection. Analysis of financial statements and their relationship to buying situations are included, along with cost control and the establishment of sales goals and objectives. Mark-ups, reduction planning, unit cost control, and other computations are emphasized. Pre-requisite: BE 201/MKT 291. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture

Attributes: Technical

MLT Medical Laboratory Technology

MLT 101(3)  Introduction to the Clinical Laboratory
Includes an orientation to the laboratory and management structure, professional organizations, professional ethics, communication, and record keeping. Covers medical terminology and abbreviations, quality assurance procedures, laboratory safety rules and procedures, specimen processing, laboratory automation, and basic immunology. Introduces the student to the various laboratory departments. Pre-requisite: Admission into the MLT program or permission of the MLT Program Director or MLT Clinical Coordinator. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours).
Components: Laboratory, Lecture

Attributes: Technical

MLT 112(2)  Urinalysis
Focuses on methodology and clinical significance of urine chemical analysis, interferences with chemical analysis procedures, screening methods used in diagnostic determinations, collection and handling of specimens, and the characteristics and clinical significance of formed elements of the urine. Includes the physiological function of the kidneys and diseases which affect the urinary system. Pre-requisite: Admission into the MLT program; permission of the MLT program director/coordinator. Pre-requisite Or Co-requisite: MLT 101. If taken as a pre-requisite, a minimum grade of ‘C’. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture

Attributes: Technical

MLT 115(2)  Serology
Introduces basic immunological principles. Includes applications of serological testing for the diagnosis and monitoring of diseases and other diagnostic responses. Pre-requisite: Admission into the MLT program or permission of MLT program director/coordinator. Lecture: 1.5 credits (22.5 contact hours). Lab: 0.5 credits (15 contact hours).
Components: Laboratory, Lecture

Attributes: Technical

MLT 119(3)  Applied Laboratory
Prepares the MLT student for clinical rotation into the major areas of the laboratory. Includes practical application in Hematology, Clinical Microbiology, Immunohematology, Urinalysis, Serology, and Clinical Chemistry. Pre-requisite: MLT 101 with a grade of ‘C’ or greater. Admission into the MLT program or permission of the MLT program director coordinator. Lecture: 1.0 credits (15 contact hours). Lab: 2.0 credit (90 contact hours).
Components: Laboratory, Lecture

Attributes: Course Also Offered in Modules, Technical
MLT 205(3)  Course ID: 004181
Clinical Microbiology I
Introduces the application of microbiological principles to clinical laboratory practice. Includes safety and use of standard precautions, staining, selection and use of media, specimen processing, cultivation and identification of bacteria, and antimicrobial susceptibility testing. Pre-requisite: (MLT 101 and MLT 119) or BIO 225 with a grade of "C" or greater; admission into the MLT program; permission by MLT program director/coordinator. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 206(2)  Course ID: 004182
Clinical Microbiology II
Continues with the application of microbiological principles to clinical laboratory practice. Includes mycology, parasitology, virology, and mycobioculture. Pre-requisite: Admitted into the MLT program; permission of the MLT program director/coordinator. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 207(2)  Course ID: 000282
Introduction to Clinical Diagnostic Microbiology
Reviews the basic concepts of bacterial cell structure, physiology, nomenclature and classification. Emphasizes safety in the microbiology department of the laboratory. Introduces specimen processing as it relates to the microbiology department in the clinical laboratory. Covers the practical importance of identifying microorganisms through morphology on culture media, appearance on gram stain, and biochemical reactions. Pre-requisite: Admission into the MLT program; OR permission of the MLT Program Director/MLT Clinical Coordinator. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 208(3)  Course ID: 006399
Clinical Diagnostic Microbiology I
Discusses theoretical concepts, disease processes, identification schemas, diagnostic characteristics, biochemical reactions, susceptibility testing, and isolation techniques of gram positive and gram negative microorganisms associated with infections diagnosed in the clinical laboratory microbiology department. Pre-requisite: MLT 207 with a grade of "C" or greater; OR permission of the MLT Program Director/MLT Clinical Coordinator. Lecture: 2.0 credit (30 contact hours). Lab: 1.0 credit (45 contact hours).

Components: Lecture
Attributes: Technical

MLT 209(2)  Course ID: 006400
Clinical Diagnostic Microbiology II
Exposes the student to a study of anaerobes, spore forming gram positive bacilli, virology, mycobacterium, mycoplasma, spirochetes, mycology and parasitology with focus on the clinical diseases and diagnostic procedures in the microbiology department of the clinical laboratory. Pre-requisite: MLT 208 with a grade of "C" or greater; OR permission of the MLT Program Director/MLT Clinical Coordinator. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Lecture
Attributes: Technical

MLT 215(4)  Course ID: 004183
Hematology I
Covers hematopoiesis and classic methodologies of standard hematologic procedures. Includes the principles of various automated hematologic analyzers, histograms and scattergrams. Provides students with the opportunity to perform basic hematologic and coagulation procedures, correlate laboratory data to aid in diagnosis, and describe methodology of procedures and their clinical significance. Includes mechanisms of coagulation, routine coagulation testing, disease states associated with coagulation abnormalities, platelet evaluation, fibrinolysis and anticoagulant therapy. Pre-requisite: MLT 101 with a grade of "C" or greater; OR permission into the MLT program; OR permission by MLT program coordinator. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 216(3)  Course ID: 004184
Hematology II
Continues the study of hematologic. Includes a study of anemias, leukemias, lymphomas, miscellaneous abnormal white blood cell disorders to assess hematologic changes and correlate laboratory data to diagnosis. Covers body fluids and other special hematologic procedures. Pre-requisite: MLT 215 with a grade of "C" or greater; permission by MLT program director/coordinator. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 217(3)  Course ID: 006401
Fundamentals of Hematology
Presents classic methodologies related to standard hematologic procedures. Includes collection and processing of proper specimens, performance of quality control, and analysis of fundamental hematologic parameters to aid in diagnosis. Pre-requisite: Admission into MLT program; OR permission of MLT Program Director/MLT Clinical Coordinator. Lecture: 2.0 credit (30 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Lecture
Attributes: Technical

MLT 218(4)  Course ID: 006402
Clinical Hematology
Continues the study of hematology. Includes hemostasis, anemias, leukemias, lymphomas, miscellaneous abnormal white blood cell disorders, body fluid analysis and other special hematologic procedures. Pre-requisite: (MLT 215 or MLT 217) with a grade of "C" or greater; OR permission of MLT Program Director/MLT Clinical Coordinator. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Lecture
Attributes: Technical

MLT 225(2)  Course ID: 004185
Immunohematology I
Includes the principles of immunology in relation to blood banking, blood group systems, donor processing and screening, antibody screening, and blood components. Pre-requisite: MLT 210 with a grade of "C" or greater; admission into the MLT program; permission by MLT program director/coordinator. Lecture: 1.0 credit (15 contact hours). Laboratory: 1.0 credit (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 226(2)  Course ID: 004186
Immunohematology II
Includes antibody screening and panel interpretation, compatibility testing, viral markers and related disease states, hemolytic disease, and HLA markers. Pre-requisite: MLT 225 or Permission by MLT program director/coordinator. Lecture: 1.0 credit (15 contact hours). Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 227(4)  Course ID: 004570
Immunohematology
Covers principles and practices in blood banking, including topics such as blood group systems, blood components, antibody identification and compatibility testing. Pre-requisite: MLT 210 with a grade of "C" or greater; OR permission of MLT program director/coordinator. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (75 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 233(5)  Course ID: 004187
Clinical Chemistry I
Provides a review of basic inorganic chemistry and organic chemistry principles and types of instrumentation commonly used in a medical laboratory. Covers carbohydrates, non-protein nitrogen compounds, proteins, lipids and enzymes as related to clinical diagnosis. Introduces quality control procedures, including statistical calculations for graph preparation and interpretation of gathered data. Pre-requisite: (MLT 101 with a grade of "C" or greater and admission into the MLT program) or MLT Program Coordinator/Director. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 234(2)  Course ID: 004188
Clinical Chemistry II
Presents the physiology and testing of liver function, hormones, electrolytes and acid-base metabolism. Includes toxicology and therapeutic drug monitoring, tumor markers, and special chemistries. Pre-requisite: MLT 101 with a grade of "C" or greater; permission by MLT program director/coordinator. Pre-requisite Or Co-requisite: MLT 233. If taken as a pre-requisite, a minimum grade of C. Lecture: 1.0 credit (15 contact hours). Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MLT 247(3)  Course ID: 006403
Advanced Clinical Chemistry
Continues the study of clinical chemistry. Presents a study of lipids and lipoproteins, acid-base balance, electrolytes, endocrine system, liver, gastrointestinal and pancreatic function, therapeutic drug monitoring, and toxicology. Pre-requisite: MLT 247 with a grade of "C" or greater. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Lecture
Attributes: Technical

MLT 275(1)  Course ID: 006831
Clinical Experience
Familiarizes the student with the clinical laboratory environment as it relates to phlebotomy and front office responsibilities. Includes blood collection procedures, handling and answering internal phone calls, communication with and registration of patients, insurance filing and data entry. Pre-requisite: Admission into the MLT program or permission of the MLT program director or coordinator. Clinical: 1.0 credit (30 contact hours).

Components: Clinical

MLT 278(4 - 5)  Course ID: 004253
Practicum I
Develops performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Utilizes and depends upon external institutions to insure adequate clinical education and training. Each clinical laboratory affiliate has designated personnel to assist the student in all assigned areas of the clinical laboratory. Provides a prescribed schedule of rotations in various departments of the laboratory for each individual student by the MLT program director. This practicum is designed to develop skills with strong supervisory instruction in all assigned departments. Pre-requisite: MLT 101 with a grade of "C" or better OR Admission into the MLT program; OR permission by MLT program director/coordinator. Components: Practicum

Attributes: Course Also Offered in Modules, Technical
MLT 279(4 - 5)  Course ID: 004254  

Practicum I  
Develops career entry level performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Provides opportunities for more responsibility and independence with previously learned procedures. Enhances the student's transition to the world of work by providing work experiences in a clinical setting. Utilizes and depends upon external institutions to insure adequate clinical education and training. Each clinical laboratory affiliate has designated personnel to assist the student in assigned areas of the clinical laboratory. Provides a prescribed schedule of rotations in various departments of the laboratory for each individual student by the CLT program director. Pre-requisite: MLT 101 with a grade of "C" or greater. OR admission into the MLT program. OR permission by MLT program director/coordinator.  
Components: Practicum  
Attributes: Course Also Offered in Modules, Technical

MLT 1191(1.5)  Course ID: 005338  

Applied Laboratory Part I  
Prepares the MLT student for clinical rotation into the major areas of the laboratory. Includes practical application in Hematology, Clinical Microbiology, andUrinalysis. Pre-requisite: MLT 101 with a grade of "C" or greater and admission into the program. Lecture: 0.5 credit (7.5 contact hours). Laboratory: 1.0 credit (45 contact hours).  
Components: Laboratory, Lecture  

MLT 1192(1.5)  Course ID: 005339  

Applied Laboratory Part II  
Prepares the MLT student for clinical rotation into the major areas of the laboratory. Includes practical application in Clinical Microbiology, Immunohematology, Serology, and Clinical Chemistry. Pre-requisite: MLT 1191 with a grade of "C" or greater. Lecture: 0.5 credit (7.5 contact hours). Lab: 1.0 credit (45 contact hours).  
Components: Laboratory, Lecture  

MLT 2781(2 - 2.5)  Course ID: 005340  

Practicum I Part 1  
Develops performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Utilizes and depends upon external institutions to insure adequate clinical education and training. Each clinical laboratory affiliate has designated personnel to assist the student in all assigned areas of the clinical laboratory. Provides a prescribed schedule of rotations in various departments of the laboratory for each individual student by the MLT program director. This practicum is designed to develop skills with strong supervisory instruction in all assigned departments. Pre-requisite: MLT 101 with a grade of "C" or greater and admission into the program. Practicum: 2 - 2.5 credits (120-150 contact hours).  
Components: Practicum  

MLT 2782(2 - 2.5)  Course ID: 005341  

Practicum I Part 2  
Develops performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Utilizes and depends upon external institutions to insure adequate clinical education and training. Each clinical laboratory affiliate has designated personnel to assist the student in all assigned areas of the clinical laboratory. Provides a prescribed schedule of rotations in various departments of the laboratory for each individual student by the MLT program director. This practicum is designed to develop skills with strong supervisory instruction in all assigned departments. Pre-requisite: MLT 2781 with a grade of "C" or greater. Practicum: 2 - 2.5 credits (120-150 contact hours).  
Components: Practicum  

MLT 2792(2 - 2.5)  Course ID: 005343  

Practicum II Part 2  
Develops career entry level performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Provides an opportunity for more responsibility and independence with previously learned procedures. Enhances the student's transition to the world of work by providing work experiences in a clinical setting. Utilizes and depends upon external institutions to insure adequate clinical education and training. Each clinical laboratory affiliate has designated personnel to assist the student in assigned areas of the clinical laboratory. Provides a prescribed schedule of rotations in various departments of the laboratory for each individual student by the MLT program director. Pre-requisite: MLT 101 with a grade of "C" or greater. Practicum: 2 - 2.5 credits (120-150 contact hours).  
Components: Practicum

MNG 100(3)  Course ID: 001772  

Medicaid Nurse Aide  
Provides knowledge and skills for nurse aides to assume the role and responsibility required in a long term care setting. Focuses on communication, infection control, safety, resident/patient rights, and basic nursing skills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1-450. Lecture/ Lab: 3 credits (75 contact hours). (45:1 ratio).  
Components: Lecture  
Course Equivalents: NAA 100  
Attributes: Technical

MNG 102(3)  Course ID: 007356  

Introduction to Mine Engineering and Mining Technology  
Provides orientation to the mining engineering and mining technology professions. Includes introduction to key mining engineering activities and functions, mining methods and equipment, and health and safety subsystems. Lecture: 3 credits (45 contact hours).  
Components: Lecture  

MNG 123(4)  Course ID: 000576  

Mining Electricity I  
Qualifies students to take the Mine Electrical Certification Exam administered by Kentucky Office of Mine Safety and Licensing. Includes topics of basic electricity, direct current circuits, impedance, reactance, power, electrical energy, permissible, underground and surface law, solid-state, and national instruments and applications. Co-requisite: MNG 125. Lecture: 4.0 credit hours (60 contact hours).  
Components: Lecture  
Attributes: Technical

MNG 125(1)  Course ID: 005286  

Mining Electricity I Lab  
Encompasses an elementary lab for mining technology students. Includes construction of circuits using electrical-measuring instruments in the analysis of the circuits with focus on electrical safety. Emphasizes mining electrical equipment circuits, permissible and maintenance. Co-requisite: MNG 123. Laboratory: 1.0 credits (30 contact hours).  
Components: Laboratory  
Attributes: Technical

MNG 150(3)  Course ID: 000587  

Mining Laws  
Provides the theory, intent, construction and application of state and federal regulations pertaining to underground and surface coal mining. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

MNG 160(3)  Course ID: 006646  

Elements of Underground Mining  
Introduces underground mining methods, operations, and procedures. Includes topics of miners' rights, work environments, health and safety standards, roof control, mine ventilation, transportation, communication, compressed gas cylinders, explosives, mine gases and instruments, electrical hazards, accident prevention, and emergency procedures. Co-requisite: MNG 161. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Pilot Course, Technical

MNG 161(1)  Course ID: 006647  

Elements of Underground Mining Lab  
Applies the principles and policies of mining methods, operations, and procedures in a controlled laboratory environment. Focuses on the skills associated with the information taught in the paired underground mining lecture course. Co-requisite: MNG 160. Lab: 1.0 credit (30 contact hours).  
Components: Laboratory  
Attributes: Pilot Course, Technical

MNG 170(2)  Course ID: 006648  

Elements of Surface Mining  
Introduces study of surface mining methods, operations, and procedures. Includes topics of miners' rights, work environments, ground control, health and safety standards, transportation, communication, compressed gas cylinders, explosives, mine gases and instruments, electrical hazards, accident prevention, and emergency procedures. Co-requisite: MNG 171. Lecture: 2.0 credits (30 contact hours).  
Components: Lecture  
Attributes: Pilot Course, Technical

MNG 171(1)  Course ID: 006649  

Elements of Surface Mining Lab  
Examines the underground mining laws and regulations impact the environment in a multitude of ways. Includes basic information related to geological formations in mining and structure of coal material. Relationships methods to mitigate negative effects of mining. Discusses methods to repair damage to environment. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Pilot Course, Technical

MNG 180(3)  Course ID: 006789  

Environmental Issues in Mining  
Introduces topic of how underground and surface mining operations impact the environment in a multitude of ways. Includes basic information related to geological formations in mining and structure of coal material. Relationships methods to mitigate negative effects of mining. Discusses methods to repair damage to environment. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical

MNG 185(3)  Course ID: 007371  

Mining Permissibility  
Covers the requirements of federal and state law of mining permissibility with a focus on proper methods of checking and maintaining underground permissible equipment in a permissible condition. Includes plane flange joints, step flange joints, slip joints, threaded joints, restraining cables, power centers, fire extinguishers, cables, and other areas of permissibility. Lecture/Lab: 3.0 credits (60 contact hours).  
Components: Lecture  
Attributes: Technical
Attributes: Technical

MOR 286(3)  Course ID: 000738

Roof Control and Ventilation
Introduces underground and surface mining methods and practices in coal and hard rock mines. Includes topics in method classification; support, safety and equipment requirements; general mine planning; sequence of development, cycle of operations and method application and variation. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MOR 299(1 - 4)  Course ID: 006790

Selected Topics in Mining Technology: (Topic)
Addresses various mining technology topics, issues and trends. Includes topics that may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of four credit hours. Lecture/Lab: 1.0 - 4.0 credits (contact hours 15 - 120).

Components: Lecture
Attributes: Technical

MOR 115(3)  Course ID: 001775

Medical Office Limited Radiography Clinical
Apply the principles and procedures learned to afford the student the opportunity to observe, assist, and perform diagnostic radiographic examinations. Mandated by the State Radiation Control Board, the student shall accrue a total of 360 contact hours and perform the minimum of (50) radiographic examinations in each of the following areas: Chest, Extremities, and Musculoskeletal. Pre-requisite: AHS 109 and AHS 115 with a grade of "C" or better. Co-requisite: MOR 100 Medical Office Limited Radiography Clinical. 3.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

MOR 117(6)  Course ID: 007111

Advanced Medical Office Radiography
Provides knowledge and lab experience necessary to meet requirements for Limited Medical Radiography licensure. Consists of patient care and management, radiographic procedures, image production and evaluation, equipment operation and maintenance. Pre-requisite: MOR 100 and MOR 115 with a grade of "C" or better. Co-requisite: MOR 119 Advanced Medical Office Radiology Clinical. Lecture: 4.0 credits (60 contact hours). Lab: 2.0 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

MOR 119(3)  Course ID: 007112

Advanced Medical Office Limited Radiography Clinical
Apply the principles and procedures learned in MOR 100 and MOR 115 to afford the student the opportunity to observe, assist, and perform diagnostic radiographic examinations. Mandated by the State Radiation Control Board, the student shall accrue a total of 360 contact hours and perform the minimum of (50) radiographic examinations in each of the following areas: Chest, Extremities, and Musculoskeletal. Pre-requisite: MOR 100 and MOR 115 with a grade of "C" or better. Co-requisite: MOR 117 Advanced Medical Office Radiology Clinical. 3.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

MRN 100(3)  Course ID: 006705

Intro to Marine Technology
Provides fundamental concepts of nautical science expected of personnel working aboard an inland towing vessel. Includes basic terminology, types of equipment encountered aboard the vessel, skill sets needed in day-to-day operations, and a general knowledge of towboat operations. Pre-requisite: Instructor consent. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MRN 101(3)  Course ID: 006706

Anatomy of a Towboat
Introduces components found on modern towboats with emphasis on an overview of all areas of the vessel from the wheelhouse to the engine room to the external components. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MRN 102(3)  Course ID: 006707

Basic Marine Safety
Provides an overview of risk-based decision making skills for assessing and managing marine hazards to prevent marine accidents or casualty. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MRN 103(3)  Course ID: 007412

Applied Marine Weather
Covers fundamental maritime weather concepts to plan safe and efficient voyages. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MRN 104(3)  Course ID: 007413

Marine Crew Wellness
Examines how nutrition, exercise, and disease affect the crewmembers’ ability to maintain a U.S. Coast Guard license. Focuses on nutrition and exercise programs while working, and prevention of disease. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, Technical

MRN 199(6)  Course ID: 006708

Marine Co-Op Experience I
Gives students experience in a higher level position in the marine industry. Provides compensated on-the-job work experience under the supervision of a qualified affiliate of the industry. Pre-requisite: 360 hours of river industry experience. Co-requisite: Current employment with the company providing the co-op experience. Co-Op: 6 credits (450 contact hours).

Components: Co-Op
Attributes: Technical

MRN 200(3)  Course ID: 006709

Shipboard Deck Operations
Provides specifics of responsibilities, policies, training, safety and rigging procedures for towboat personnel. Pre-requisite: MRN 100. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MRN 201(3)  Course ID: 006710

Rules of the Road
Provides an in-depth analysis of the United States Coast Guard (USCG) Navigation Rules with an emphasis on the history and interpretation of the rules. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MRN 202(5)  Course ID: 006711

Piloting and Navigation
Identifies the effect of inland waterway prevailing conditions on vessels; provides instruction on locking procedures, radio telephone regulations, hydrology, and piloting skills. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MRN 203(3)  Course ID: 006712

Environmental Protection Rules
Provides analysis of environmental regulations governing the marine industry. Explores the environmental practices of vessels on the inland waterway systems and the governing agencies which establish industry regulations. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MRN 204(5)  Course ID: 006713

Marine Electrical Systems
Explores and applies the theory of electricity with an emphasis on power systems, circuits, safety procedures, and maintenance measures needed to maintain electrical systems aboard towing vessels. Lecture/Lab: 5.0 credits (105 contact hours).

Components: Lecture
Attributes: Technical

MRN 205(3)  Course ID: 006714

Marine Electrical Systems II
Explores the maintenance measures needed to maintain electrical systems aboard towing vessels on the inland river system. Pre-requisite: MRN 204. Lecture/Lab 3 credits (60 contact hours).

Components: Lecture
Attributes: Technical

MRN 206(5)  Course ID: 006715

Marine Diesel
Introduces the operation and components of a marine diesel engine with emphasis on diesel engine theory, safety precautions, internal and external components, and contributing operation systems. Lecture/Lab: 5.0 credits (105 contact hours).

Components: Lecture
Attributes: Technical

MRN 207(5)  Course ID: 006716

Marine Diesel II
Identifies the various systems involved in the operation of a marine diesel engine, including the application of the knowledge of diesel operation to maintenance and troubleshooting exercises. Pre-requisite: MRN 206. Lecture/Lab: 3 credits (90 contact hours).

Components: Lecture
Attributes: Technical
Course Descriptions

MRN 208(3) Course ID: 006717
Inland River Systems
Explores the U.S. inland waterway system and its tributaries as they relate to the inland marine industry and the movement of cargos. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MRN 212(5) Course ID: 007414
Marine Fluid Systems
Introduces fundamental fluid power theory, component identification and application, schematic reading, and basic calculations related to marine fluid systems. Lecture/Lab: 5 credits (105 contact hours).
Components: Lecture
Attributes: Technical

MRN 214(4) Course ID: 007415
Marine Refrigeration Systems
Introduces the fundamentals of refrigeration, including use of tools, test equipment, materials, environmental issues, and safety. Lecture/Lab: 4.0 credits (69 contact hours).
Components: Lecture
Attributes: Technical

MRN 299(6) Course ID: 006720
Marine Co-Op Experience II
Provides experience directly in line with the students’ educational objective. Pre-requisite: MRN 199. Co-requisite: Current employment with the company providing the co-op experience. Co-Op: 6 credits (450 contact hours).
Components: Co-Op
Attributes: Technical

MRN 1001(1) Course ID: 015787
Marine Terminology and Safety
Provides fundamental terminology and safety concepts expected of personnel working aboard an inland towing vessel. Pre-requisite: Instructor Consent. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 1002(1) Course ID: 015788
Seamanship, Rigging, and Tows
Provides basic seamanship expected of personnel working aboard an inland towing vessel. Pre-requisite: MRN 1001. Lecture: 1.0 credit (15 contact hours).
Components: Laboratory

MRN 1003(1) Course ID: 015789
Marine Operations & Equipment
Introduces the responsibilities of the engineering department and systems on board an inland towing vessel. Pre-requisite: MRN 1002. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 1011(1) Course ID: 015790
Basic Towboat Design
Introduces components found on modern towboats with emphasis on towboat design and arrangement of equipment. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 1012(1) Course ID: 015791
Wheelhouse Equipment
Introduces basic arrangement of wheelhouse equipment and use. Pre-requisite: MRN 1012. Lecture: 1.0 credit (15 contact hours).
Components: Laboratory

MRN 1013(1) Course ID: 015792
Mechanical Support Systems
Introduces mechanical support equipment aboard an inland towing vessel. Pre-requisite: MRN 1012. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 1021(1) Course ID: 015793
Marine Safety
Introduces risk-based assessment and decision making factors for marine safety on an inland marine vessel. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 1022(2) Course ID: 015794
Marine Risk-Based Analysis
Provides analyses for assessing and managing marine hazards to prevent marine accidents or casualty. Pre-requisite: MRN 1021. Lecture: 2.0 credits (30 contact hours).
Components: Lecture

MRN 1031(1.5) Course ID: 015795
Maritime Weather
Introduces marine weather as it relates to voyage. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 1032(1.5) Course ID: 015796
Weather Forecasting
Introduces weather forecasting for safe and efficient voyage. Pre-requisite: MRN 1031. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 1041(1.5) Course ID: 015797
Crew Wellness
Examines how nutrition, exercise, and disease affect the crewmember’s ability to maintain a U.S. Coast Guard license. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 1042(1.5) Course ID: 015798
Crew Lifestyle
Focuses on nutrition and exercise programs while working and the prevention of disease. Pre-requisite: MRN 1041. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 2002(1) Course ID: 016380
Shipboard Deck Safety
Components: Lecture

MRN 2003(1) Course ID: 016381
Shipboard Deck Rigging
Provides specifics on rigging procedures for towboat personnel. Pre-requisite: MRN 2002. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2011(1.5) Course ID: 016382
History of Navigation Rules
Provides an in-depth analysis of the history and effects of development changes on navigational rules. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 2021(1) Course ID: 016384
River Conditions
Identifies the effect of inland waterway prevailing conditions on vessels and hydrology. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2023(1) Course ID: 016386
Piloting
Provides instruction on locking procedures, radio telephone regulations and piloting skills. Pre-requisite: MRN 2022. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2031(1) Course ID: 015799
Environmental Regulations I
Provides analysis of environmental regulations governing the marine industry. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 2032(1) Course ID: 015800
Environmental Regulations II
Provides analysis of Marine Pollution Convention and the National Pollution Discharge Elimination System. Pre-requisite: MRN 2031. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 2033(1) Course ID: 015801
Environmental Regulations III
Explores the environmental practices of vessels on the inland waterway systems and the governing agencies which establish industry regulations. Pre-requisite: MRN 2031 and MRN 2032. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 2041(1.66) Course ID: 016387
Intro to Marine Electrical
Explores the theory of electricity with an emphasis on power systems, circuits, and safety procedures needed to maintain electrical systems aboard towing vessels. Lecture/Lab: 1.66 credits (35 contact hours).
Components: Lecture

MRN 2042(1.67) Course ID: 016388
Marine Electrical Application
Applies the theory of electricity with an emphasis on power systems, circuits, and maintenance measures needed to maintain electrical systems aboard towing vessels. Pre-requisite: MRN 2041. Lecture/Lab: 1.67 credits (35 contact hours).
Components: Lecture

MRN 2043(1.67) Course ID: 016389
Marine Electrical Hardware
Applies the theory of electricity with an emphasis on maintenance measures needed to maintain electrical systems aboard towing vessels. Pre-requisite: MRN 2042. Lecture/Lab: 1.67 credits (35 contact hours).
Components: Lecture

MRN 2081(1) Course ID: 016408
Intro to Inland River Systems
Explores the U.S. inland waterway system and its tributaries for the lower Mississippi river region as they relate to the inland marine industry and the movement of cargos. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2082(1) Course ID: 016410
Upper Mississippi River System
Explores the U.S. inland waterway system and its tributaries for the upper Mississippi river region as they relate to the inland marine industry and the movement of cargos. Pre-requisite: MRN 2081. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2083(1) Course ID: 016411
Inland River Systems
Explores the U.S. inland waterway system and its tributaries for the Ohio River region as they relate to the inland marine industry and the movement of cargos. Pre-requisite: MRN 2082. Lecture: 1 credit (15 contact hours).
Components: Lecture

MRN 2121(1.66) Course ID: 016412
Intro to Marine Fluid Systems
Incorporates practical experience in fluid power theory and schematic reading related to fluid power systems. Lecture/Lab: 1.66 credits (35 contact hours).
Components: Lecture

MRN 2123(1.67) Course ID: 016414
Maintenance & Control Devices
Incorporates practical experience in fluid power theory and basic calculations related to marine fluid systems. Pre-requisite: MRN 2122. Lecture/Lab: 1.67 (35 contact hours).
Components: Lecture

MRN 2141(1) Course ID: 016415
Introduction to Marine HVAC
Introduces the fundamentals of refrigeration. Lecture: 1 credit (15 contact hours).
Components: Clinical

MRN 2142(1) Course ID: 016416
Marine HVAC Safety
Introduces refrigeration tools, test equipment, and safety. Pre-requisite: MRN 2141. Lecture: 1 credit (15 contact hours).
Components: Lecture
MSE 201(3) Course ID: 005596
**Introduction to Materials Science**
Microscopic and macroscopic structure as related to the properties of materials with engineering applications. Pre-requisite: CHE 105, MA 113. Co-requisite: MA 114. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

**MSE 204(3) Course ID: 001660**
**Advanced Masonry**
Provides experience in laying window sills, brickwork, and construction of brick veneer. Includes bricklaying, laying of doors, and laying of window sills. Provides opportunity for students to construct masonry projects. Pre-requisite: Consent of Instructor. Co-requisite: 3.0 credits (90 contact hours).
Components: Laboratory

**MSG 100(4) Course ID: 003986**
**Musculoskeletal Anatomy & Physiology I**
Provides extensive knowledge of the skeletal system and the basic structure of muscles, joints, and nerves, and the ways they are involved in movement. Pre-requisite Or Co-requisite: (CLA131 or OSTS103 or ASTS115). Co-requisite: MSG 125. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

**MSG 125(3) Course ID: 003990**
**Musculoskeletal Anatomy and Physiology II**
Details muscular interactions at major joint articulations including biomechanical concepts and muscles, joints, and innervations of the upper and lower extremities. Pre-requisite: MSG 125. Pre-requisite Or Co-requisite: MSG135. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

**MSG 135(3) Course ID: 003991**
**Massage Techniques I**
Introduces theory and technique of Swedish massage, including the history and benefits of massage, scope of practice, and performance of a one-hour full body systemic Swedish massage. Co-requisite: MSG 100. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

**MSG 205(3) Course ID: 005521**
**Advanced Clinical Massage I**
Prepares the student in the knowledge and skills of advanced massage techniques and integrates them in a medical context. Pre-requisite: MSG 205. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

**MSG 215(2) Course ID: 003993**
**Massage Therapy Student Clinic**
Applies principles and techniques by providing students with experience through a student massage clinic. Co-requisite: MSG 210. Lab: 2.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

**MSG 220(3) Course ID: 005522**
**Massage Therapy Pathology**
Prepares students to recognize and know common pathologies that they may encounter as a massage therapist. Covers pathologies directly related to the biological systems of the body. Co-requisite: MSG 215. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

**MSG 287(1 - 6) Course ID: 016249**
**Massage Therapy Practicum and Special Topics**
This course addresses various massage therapy topics, issues, and trends. It also allows students to practice techniques already acquired, and to demonstrate mastery of new ones covered in the topics portion. Topics may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of six credit hours. Pre-requisite: Massage Therapy Certificate, Practicum: 1-6 credits (60-360 contact hours).
Components: Practicum
Attributes: Technical

**MST 150(9) Course ID: 007258**
**Multi-Skilled Systems Technician**
Introduces the systems approach to the operation of electrical components and the relationship of voltage, current, resistance, and power in industrial systems. Provides an overview of alternating and direct current fundamentals. Introduces the systems approach to the operation of mechanical components and the relationship of their application in industrial systems. Provides an overview of operating machinery fundamentals. Introduces the systems approach to the operation of hydraulic / pneumatic components and the relationship of their application in industrial systems. Provides an overview of digital fundamentals. Lecture/Lab: 9.0 credits (180 contact hours).
Components: Lecture
Attributes: Technical

**MST 200(3) Course ID: 001778**
**Advanced Hydraulic Systems**
The advanced hydraulic systems class will cover design, repair, and troubleshooting of hydraulic systems. Pre-requisite: FPX 100, FPX 101. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

**MST 201(2) Course ID: 001779**
**Advanced Hydraulic Systems Lab**
The advanced hydraulic systems lab will cover design, repair, and troubleshooting of hydraulic systems. Pre-requisite: FPX 100, FPX 101. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

**MST 204(3) Course ID: 001780**
**Advanced Pneumatic Systems**
Design, repair, and troubleshooting of pneumatic systems will be covered in this course. Pre-requisite: FPX 100, FPX 101. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

**MST 205(2) Course ID: 001781**
**Advanced Pneumatic Systems Lab**
Component repair and system troubleshooting will be covered in this lab. Pre-requisite: FPX 100, FPX 101. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

**MST 206(3) Course ID: 005259**
**Electrohydraulics**
Introduces electronic/electrical controls as it pertains to hydraulic valve control with the emphasis on automation, robotic and servo control. Lecture: 3 credits (45 contact hours).
Pre-requisite: (ENG 111 and FPX 101) or Consent of Instructor. Co-requisite: MST 207.
Components: Lecture
Attributes: Technical

**MST 207(2) Course ID: 005260**
**Electrohydraulics Lab**
Introduces electronic/electrical controls as it pertains to hydraulic valve control with the emphasis on automation, robotic and servo control. Laboratory: 2 credits (90 contact hours).
Pre-requisite: (ENG 111 and FPX 101) or Consent of Instructor. Co-requisite: MST 206.
Components: Laboratory
Attributes: Technical

**MSY 105(3) Course ID: 001655**
**Introductory Masonry**
Introduces various types of mortar and cement along with the use of basic masonry tools. Emphasizes different methods of spacing materials on a construction site, the 6-8-10 method, and the use of the transit level, brick spacing and modular rule focusing on laying straight and plumb brick to the line, bricking gables and building columns. Covers application techniques for setting up different types of masonry materials, marking off layout lines and erecting batter boards along with techniques employed in different types of weather and climates. Laboratory: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

**MSY 115(3) Course ID: 001656**
**Intermediate Masonry**
Builds on proficiency in competencies learned in MSY 105. Focuses on laying straight and plumb brick to the line with emphasis on bricking gables and building columns. Pre-requisite: MSY 105 with a grade of “C” or higher or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

**MSY 198(3) Course ID: 001657**
**Instructor Consent Required Practicum I**
Provides supervised on-the-job work experience related to the students educational objectives. Students participating in the Practicum do not receive compensation. Pre-requisite: Consent of Instructor: Practicum: 3.0 credits (90 contact hours).
Components: Practicum
Attributes: Technical

**MSY 199(3) Course ID: 001658**
**Instructor Consent Required Practicum II**
Provides supervised on-the-job work experience related to the students educational objectives. Students participating in the Co-op Education program receive compensation for their work. Pre-requisite: Consent of Instructor. Co-Op: 3.0 credits (90 contact hours).
Components: Co-Op
Attributes: Technical

**MSY 205(3) Course ID: 001660**
**Advanced Masonry**
Provides experience in laying field corners, bricking in around electrical and plumbing units, and laying door and window brick sills. Provides opportunity for students to construct expansion joints, piers, pilasters and retaining and splitface block walls. Pre-requisite: (MST 105 and MST 115 with a grade of “C” or higher) or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
MSY 215(3)  Course ID: 001661
Masonry Lab
Provides practice and application of principles, theories and skills taught in MSY 105, MSY 115, and MSY 205. Pre-requisite: MSY 105 and MSY 115 and MSY 205 with a grade of “C” or higher or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 225(3)  Course ID: 001662
Brick Construction
Covers the application of laying brick to a line overhand, laying a rowlock course, and making weep holes. Emphasizes tying intersecting walls with masonry ties and construction cavity walls and planters. Pre-requisite: MSY 205 with a grade of “C” or higher or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 235(3)  Course ID: 001663
Special Techniques in Brick Construction
Provides practice in constructing a variety of walls including arches. Pre-requisite: MSY 205 with a grade of “C” or higher or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 245(3)  Course ID: 001664
Anchors and Reinforcement
Presents different types of reinforcement used in masonry units such as installing wall ties and reinforcing wire, tying intersecting walls with metal ties, installing masonry anchor bolts, setting and anchoring door and window frames, and setting steel lintels and bearing plates. Covers the installation of dovetail ties to concrete, setting preformed masonry lintels, and laying of paving brick in a herringbone pattern. Pre-requisite: MSY 105 with a grade of “C” or higher or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 251(3)  Course ID: 001665
Concrete Finishing
Focuses on theory and techniques inherent in the art of concrete finishing. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 253(3)  Course ID: 001666
Masonry Floors and Steps
Provides students with the opportunity to lay paving brick, steps, and flagstone floors including laying different types of patterns. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MSY 255(3)  Course ID: 001667
Glass Blocks and Tile
Provides students with the opportunity to lay structural clay tile, glazed tile, glass block, and set coping tile. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MTT 216(8)  Course ID: 005456
Machining Technologies
Provides students with additional opportunities in the field of machining. Pre-requisite: Consent of instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical

MU 101(3)  Course ID: 000910
Folk and Traditional Music of the Western Continents
Described for non-music majors. The major purpose of the course is to survey the body of music called Ethnics, folk, or traditional, as it is found in Europe, most of Africa, and the Americas, from a geographic approach. Lecture: 3 hours. Components: Lecture Attributes: AH - Arts and Humanities

MUC 175(1)  Course ID: 002238
Jazz Ensemble
The study of jazz performance technique and literature through the participation in a jazz ensemble. Can be repeated for a total of 4 credits. Pre-requisite: Consent of instructor. Laboratory: 3.0 credits (90 contact hours). Components: Laboratory Attributes: Technical, University Course (University of Kentucky)

MUC 190(1)  Course ID: 005593
Marching Band
Preparation for performance at university athletic functions, primarily football games. May be repeated to a maximum of four credits. Pre-requisite: Audition and permission of the instructor. Lab: 1 credit (45 contact hours). Components: Laboratory Attributes: Other, University Course (University of Kentucky)
MUS 100(3)  Course ID: 000883
Introduction to Music
Introduces the elements of music as they apply to the listening experience. Emphasizes the development of an awareness and understanding of musical styles from the Middle Ages to the present. Designed for the non-music major with no prior knowledge of music and is not intended to fulfill a program course requirement for music majors. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, Course Also Offered in Modules

MUS 104(3)  Course ID: 004548
Introduction to Jazz History
A survey of the many facets of jazz music. Designed to follow stylistic trends as developed from 19th century African and European influences to the modern forms of today. The study of significant composers, performers, and terminology associated with this uniquely American art form through listening assignments, reading and discussion activities. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

MUS 106(3)  Course ID: 006188
Music in Film
Presents a survey of the history of film from the silent era to the present. Develops critical listening, viewing, and analytical skills in relation to the function of music in film. Explores various cultural, artistic traditions which inform the musical styles in film. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities, University Course (Morehead State University)

MUS 113(1)  Course ID: 006900
Class Instruction in Guitar I
Introduces the fundamentals of guitar playing to beginners. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other, Pilot Course

MUS 114(1)  Course ID: 006899
Class Instruction in Guitar II
Develops the fundamentals of guitar playing on an intermediate level. Pre-requisite: Guitar I or consent of instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other, Pilot Course

MUS 120(3)  Course ID: 004609
Music Technology I
Introduces the use of technology as a tool for music creativity and productivity. Includes knowledge of how to create various styles of contemporary music utilizing loop and sampling based technology, creation of wav files, MP3 files, CD layout, and class projects. Pre-requisite: MUS 174 or Consent of Instructor. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Other

MUS 121(3)  Course ID: 004610
Music Technology II
Continues the process of integrating computer based technology into the creation and design of music through artistic and commercial applications. Covers intermediate skills in music notation, MIDI (Musical Instrument Digital Interface) sequencing, and electronic keyboarding. Includes the exploration of many ways to incorporate these skills into computer/MIDI applications. Pre-requisite: MUS 120 or consent of the instructor. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: Other

MUS 150(1)  Course ID: 002231
Class Instruction in Piano I
Introduces the fundamentals of piano playing to beginners. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other

MUS 151(1)  Course ID: 002232
Class Instruction in Piano II
Develops the fundamentals of piano playing on a second level, with advanced beginner music and technique. Pre-requisite: MUS155. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other

MUS 152(1)  Course ID: 002233
Class Instruction in Piano III
Develops the fundamentals of piano playing on an early intermediate level, with an emphasis on expanded repertoire. Pre-requisite: MUS 151. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other

MUS 153(1)  Course ID: 002234
Class Instruction in Piano IV
Develops the technique and musical content of piano playing on an upper intermediate level, with an emphasis on upper intermediate repertoire. Pre-requisite: MUS152. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Other

MUS 155(1)  Course ID: 002235
Instructor Consent Required
Voice Class for Non-Music Majors
Includes applied voice group instruction for non-music majors with emphasis on basic breathing and vocal technique, elements of music notation, and diction. May be repeated for a maximum of 2 credits. Pre-requisite: Consent of instructor. Lab: 1 credit (15 contact hours).
Components: Laboratory
Attributes: Other

MUS 174(3)  Course ID: 002249
Theory for Nonmusic Majors
Introduces basic materials of musical organization, focusing on music reading, rudiments of notation, pitch, scale, tonal, and rhythmic organization, melodic construction, simple harmonic vocabulary, and beginning aural training. Uses individual composition and improvisation exercises to approach much of this material. Ability to read music is not a pre-requisite. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

MUS 175(1)  Course ID: 006791
Instructor Consent Required
Jazz Ensemble
Introduces the study of jazz through performance and may be repeated to a maximum of four credits. Pre-requisite: Consent of Instructor. Lab: 1.0 credit (45 contact hours).
Components: Laboratory
Attributes: Other

MUS 187(1)  Course ID: 002237
Instructor Consent Required
Concert Band
Continues instrumental music experience through participation in a large concert band. May be repeated to a maximum of four credits. Pre-requisite: Ability to read music and play a band instrument. Lab: 1 credit (15 contact hours).
Components: Laboratory
Attributes: Other

MUS 206(3)  Course ID: 000857
American Music History
Includes a history of music in America from c. 1620 to the present. Requires listening to recordings, reading the primary text and suggested readings in books, periodicals, and documents. Focuses on important names, places, events, and styles in music, as well as important historical and sociological trends and movements. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

MUS 297(3)  Course ID: 004774
African American Music History
A history of African American music from Pre-colonial West African diaspora through American colonial times to the present. Requires listening to recordings, reading the primary text and suggested readings in books and periodicals. Important names, places, events, and styles in music, as well as important historical and sociological trends will be presented within the context of the African American experience. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

MUS 208(3)  Course ID: 004775
World Music
A geographic survey of selected music cultures throughout the world with hands-on experience playing the music of diverse cultures, audio/video examples of music-cultures in performances, reading and writing assignments, and attendance and reporting at live music events. Includes informational presentations by students, group listening and discussion, simple musical instrument construction, and small group projects. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

MUS 222(3)  Course ID: 002253
History and Sociology of Rock Music
Provides a listening survey course, with a chronological approach, covering the years 1950- present. Emphasizes both the music and the sociological climate reflected and advocated by the music. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

MUS 223(3)  Course ID: 006581
Music for Elementary Teachers
Covers music rudiments of music theory and methods for teaching music to elementary school children. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other, Pilot Course

MUS 260(2)  Course ID: 000692
Teaching Music in the Elementary Grades I
Develops musicianship, skills, and techniques teachers need to direct musical activities effectively in the elementary classroom. Introduces music fundamentals and teaching materials through active participation in musical activities, focusing on music education appropriate for elementary grades. Should be taken by classroom teachers and non-music majors and followed by MUS 261. Lecture/Lab: 2 credits (45 contact hours).
Components: Lecture
Attributes: Other

MUS 261(2)  Course ID: 000699
Teaching Music in the Elementary Grades II
Builds on the musicianship skills and techniques learned in MUS 260. Develops the process of selecting and teaching musical materials appropriate for elementary-aged children. Introduces methods of integrating music across the elementary curriculum. Should be taken immediately following completion of MUS 260. Pre-requisite: MUS 260. Lecture/Lab: 2 credits (45 contact hours).
Components: Lecture
Attributes: Other
### Nurse Aide Skills Laboratory

**Course Code:** NAA 1002 (0.56)  
**Course ID:** 006251  
**Components:**  
- Lecture
- Laboratory

**Credit:** 0.56 credits (25 contact hours).

**Description:** Includes the laboratory component for application of skills and concepts taught in the nurse aide program. Pre-requisite: NAA 1001. Lab: 0.56 credit (25 contact hours).

### Nurse Aide Skills I

**Course Code:** NAA 1001(2)  
**Course ID:** 006250  
**Components:**  
- Lecture  
- Laboratory

**Credit:** 2.0 credits (30 contact hours).

**Description:** Long Term Care Nurse Aide. Provides knowledge and skills for nurse aides to assume the role and responsibility required in a long term care setting. Focuses on communication, infection control, safety, resident/patient rights while preparing the student to perform advanced nursing assistant skills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1:450. Lecture/Lab: 0.50 credits (15 contact hours).

### Nurse Aide Aids Laboratory

**Course Code:** NAA 1003(0.44)  
**Course ID:** 006252  
**Components:**  
- Laboratory

**Credit:** 0.44 credit (20 contact hours).

**Description:** Nurse Aide Clinical Rotation. Includes the supervised practical training component. Provides a working knowledge of the physiological, psychological, and sociological impact of institutionalization on the nursing facility resident. Pre-requisite: NAA 1002. Clinical: 0.44 credit (20 contact hours).

### Nurse Aide Skills Laboratory

**Course Code:** NAA 125(6)  
**Course ID:** 004613  
**Components:**  
- Lecture
- Laboratory

**Credit:** 6.0 credits (45 contact hours).

**Description:** Provides knowledge and skills for nurse aides to assume the role and responsibility required in a variety of health care settings. Builds upon MNA 100/NAA 100 and prepares the student to perform advanced nursing assistant skills. Pre-requisite: (MNA 100 or NAA 100) with a grade of "C" or above within one year) or Active Status on the Kentucky Nurse Aide Registry (in good standing)) or consent of instructor. Lecture: 2.0 credits (30 contact hours) Lab: 1.0 credit (45 contact hours).

### Nurse Aide Registry (in good standing))

**Course Code:** NAA 115(3)  
**Course ID:** 004612  
**Components:**  
- Lecture

**Credit:** 3.0 credits (45 contact hours).

**Description:** Provides knowledge and skills for nurse aides to assume the role and responsibility required in a variety of health care settings. Builds upon MNA 100/NAA 100 and prepares the student to perform advanced nursing assistant skills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1:450. Lecture/Lab: 0.50 credits (15 contact hours).

### Nurse Aide Skills I

**Course Code:** NAA 100(3)  
**Course ID:** 004611  
**Components:**  
- Lecture
- Course Equivalents: MNA 100

**Credit:** 3.0 credits (45 contact hours).

**Description:** Provides knowledge and skills for nurse aides to assume the role and responsibility required in a long term care setting. The focus is communication, infection control, safety, resident/patient rights, and basic nursing skills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1:450. Lecture 3.0 credits (75 contact hours).

### Professor of Nursing

**Title:** Professor of Nursing  
**Course Code:** NFA 107  
**Course ID:** 001368  
**Components:**  
- Lecture

**Credit:** 1.5 credits (22.5 contact hours).

**Description:** Provides a foundational knowledge base to prepare students for the practice of nursing. Focuses on the role and responsibility required in a variety of health care settings. Builds upon MNA 100/NAA 100 and prepares the student to perform advanced nursing assistant skills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1396r and 907 KAR 1:450. Lecture/Lab: 0.50 credits (15 contact hours).

### Transcription of Orders

**Course Code:** NAA 1023(1)  
**Course ID:** 016421  
**Components:**  
- Lecture

**Credit:** 1.0 credit (15 contact hours).

**Description:** Presents order entry duties and responsibilities of the health unit coordinator. Pre-requisites: NAA 1022. Lecture: 1 credit (15 contact hours).
NGT 1006(0.5)  Course ID: 006451  Records & Compliance Reports
  Focuses on the Department of Transportation reporting requirements, reading maps of natural gas systems, and preparing field sketches. Lecture: 0.5 credits (7.5 contact hours).  Components: Lecture

NGT 1101(1.25)  Course ID: 006452  Controlling/Preventing Fires
  Introduces factors related to the fire extinguishing process, ways to prevent gas fires, and ways to extinguish natural gas fires. Lecture: 0.25 credits (3.75 contact hours); Lab: 1.0 credits (30 contact hours).  Components: Laboratory, Lecture

NGT 1102(0.75)  Course ID: 006461  Safe Working Environment
  Emphasizes safety practices, proper use of equipment, hazards of escaping gas, and drug testing and rehabilitation programs. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.5 credits (16 contact hours).  Components: Laboratory, Lecture

NGT 1103(0.5)  Course ID: 006462  Preventing Accidental Ignition
  Identifies conditions, causes, and hazards related to gas leakage; emphasizes safety practices and procedures to prevent accidental ignition of natural gas. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1104(0.5 - 500)  Course ID: 006463  Traffic Control Guidelines
  Present the basic standard for traffic control as described in the annual on Uniform Traffic Control Devices, Part VI According to the U.S. Department of Transportation.  Components: Laboratory, Lecture

NGT 1401(0.5)  Course ID: 006465  Excavating
  Focuses on the Occupational Safety and Health Administration (OSHA) requirements for earth excavation, protection systems, and tables and specifications for designing protective systems. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1402(1.25)  Course ID: 006466  Operating Equipment Safely
  Presents techniques of tractor/loader/backhoe operation while emphasizing safety precautions, maintenance and inspection, and proper control. Lecture: 0.25 credits (3.75 contact hours), Lab: 1 credit hour (30 contact hours).  Components: Laboratory, Lecture

NGT 1403(0.75)  Course ID: 006467  Safety in Confined Spaces
  Introduces confined spaces with emphasis on identifying hazards, monitoring of the atmosphere, entry procedures, and controlling hazardous energy. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.5 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1404(0.5)  Course ID: 006468  Communicating Potential Hazard
  Examines health related chemical and explosive hazards while emphasizing identification of hazard information from labels and material safety data sheets and methods used to work safely with toxic chemicals and hazardous materials. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1501(0.5)  Course ID: 006453  Gas-in-Air Mixture
  Focuses on detecting the presence of and measuring the percent of gas in a gas-in-air mixture. Lecture: 0.5 credits (7.5 contact hours).  Components: Lecture

NGT 1502(0.5)  Course ID: 006454  Gas Leaks/Odors
  Presents basic facts about natural gas and natural gas leaks with emphasis on responding to gas leak and odor calls. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1503(0.5)  Course ID: 006455  Underground Facilities
  Presents techniques and procedures basic to locating and marking underground pipeline facilities. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1504(0.5)  Course ID: 006456  Underground Leaks
  Presents the theory and practice for investigating and pinpointing underground natural gas leaks. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1505(0.75)  Course ID: 006464  Patrol/Leakage Surveys
  Presents factors basic to patrol of pipeline facilities to include the practice of patrol and leakage surveys. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1601(0.75)  Course ID: 006469  Establishing a Gas Service
  Presents methods used when establishing a gas service with emphasis piping from the main to the customer's piping, piping inside buildings, and gas-equipped equipment in service. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1602(0.75)  Course ID: 006470  Odorant Levels
  Presents federal and Kentucky standards for proper odorant levels with emphasis on monitoring odorant levels. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1603(0.75)  Course ID: 006471  Installing Domestic Service
  Presents US Department of Transportation and industry-recognized procedures for installing domestic gas service. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1604(0.75)  Course ID: 006472  Piping Techniques
  Presents the theory and techniques common to purging natural gas lines, including safe practices and isolation of equipment during purging. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1701(0.5)  Course ID: 006473  Gas-Operated Appliances
  Presents procedures for checking natural gas appliance systems to ensure proper installation and safe operation. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1702(0.5)  Course ID: 006474  Servicing Gas Equipment
  Presents factors related to the ventilation process, standards to ensure proper combustion and ventilation for gas-operated equipment, and ventilation inspection of gas-operated equipment. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1703(0.75)  Course ID: 006475  Venting Gas Equipment
  Presents venting requirements for Categories I-IV gas-operated appliances; identifies features and benefits of high efficiency equipment with practice in sizing of vents and inspecting venting systems. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).  Components: Laboratory, Lecture

NGT 1704(1.25)  Course ID: 006476  Electrical Concepts
  Presents the basis for troubleshooting electrical control circuits in gas-operated appliances with emphasis on reading electrical control diagrams and their physical arrangement in the appliance. Lecture: 0.25 credits (3.75 contact hours), Lab: 1 credit (30 contact hours).  Components: Laboratory, Lecture

NGT 1801(0.5)  Course ID: 006477  Installing Mains & Lines
  Presents practices basic to installing gas mains and service lines with emphasis on safety, standards, and line-marking. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1802(0.5)  Course ID: 006478  Pipeline Installation
  Examines the preparation of the pipeline right-of-way and the completion of the construction operation; presents the major phases of the inspection process. Lecture: 0.5 credits (7.5 contact hours).  Components: Lecture

NGT 1804(0.75)  Course ID: 006480  Plastic Pipe & Heat Fusion
  Presents the theory of heat fusing polyethylene pipe and the specification and conditions required to produce an acceptable joint. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1805(0.5)  Course ID: 006481  Permanent Field Repairs
  Presents common methods and installation practices used to make field repairs on gas piping facilities and natural gas pipelines. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture

NGT 1806(0.25)  Course ID: 006482  Joining Copper Pipe
  Presents materials and techniques for joining copper pipe/tubing. Lecture: 0.25 credits (3.75 contact hours).  Components: Lecture

NGT 1901(0.5)  Course ID: 006483  Maintaining Line Valves
  Presents basic design characteristics and maintenance procedures for pipeline valves. Lecture: 0.5 credits (7.5 contact hours).  Components: Lecture

NGT 1902(0.5)  Course ID: 006484  Pressure Relief Valves
  Presents components and operating characteristics of typical pressure relief valve installations; emphasizes spring-operated and pilot-operated pressure relief valves; focuses on factors to consider when installing pressure relief valves. Lecture: 0.5 credits (7.5 contact hours).  Components: Lecture

NGT 1903(0.5)  Course ID: 006485  Abandon/Deactivate Facilities
  Presents processes and procedures for deactivating/desactivating gas facilities. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).  Components: Laboratory, Lecture
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGT 1904(0.5)</td>
<td>Cast Iron Pipe</td>
</tr>
<tr>
<td>NGT 1905(1)</td>
<td>Inspecting Pipe Welds</td>
</tr>
<tr>
<td>NGT 2001(0.75)</td>
<td>Tapping/Stopping Pipelines</td>
</tr>
<tr>
<td>NGT 2002(0.75)</td>
<td>Pipeline Piping</td>
</tr>
<tr>
<td>NGT 2003(0.75)</td>
<td>Purging Techniques</td>
</tr>
<tr>
<td>NGT 2004(0.75)</td>
<td>Tie-In/Bypass Operations</td>
</tr>
<tr>
<td>NGT 2051(0.5)</td>
<td>Corrosion Control</td>
</tr>
<tr>
<td>NGT 2052(0.5)</td>
<td>Installing Cathodic Systems</td>
</tr>
<tr>
<td>NGT 2053(0.5)</td>
<td>Testing Corrosion Systems</td>
</tr>
<tr>
<td>NGT 2054(0.5)</td>
<td>Monitoring Corrosion Control</td>
</tr>
<tr>
<td>NGT 2101(1)</td>
<td>Principles of Electricity</td>
</tr>
<tr>
<td>NGT 2102(1)</td>
<td>Rectifier Components</td>
</tr>
<tr>
<td>NGT 2103(1)</td>
<td>Rectifiers</td>
</tr>
<tr>
<td>NGT 2201(0.5)</td>
<td>Gas Measurement</td>
</tr>
<tr>
<td>NGT 2202(1)</td>
<td>Maintaining Line Valves</td>
</tr>
<tr>
<td>NGT 2203(0.5)</td>
<td>Pipeline Heaters</td>
</tr>
<tr>
<td>NGT 2204(0.5)</td>
<td>Proper Odorant Levels</td>
</tr>
<tr>
<td>NGT 2205(0.5)</td>
<td>Dew Point of a Gas</td>
</tr>
<tr>
<td>NGT 2206(0.5)</td>
<td>Orifice Meters</td>
</tr>
<tr>
<td>NGT 2207(0.5)</td>
<td>Turbine Meters</td>
</tr>
<tr>
<td>NGT 2208(0.5)</td>
<td>Diaphragm Meters</td>
</tr>
<tr>
<td>NGT 2209(0.5)</td>
<td>Rotary Meters</td>
</tr>
<tr>
<td>NGT 2301(0.5)</td>
<td>Pressure Relief Valves</td>
</tr>
<tr>
<td>NGT 2302(1)</td>
<td>Pilot Loaded Regulators</td>
</tr>
<tr>
<td>NGT 2303(0.5)</td>
<td>Test Pressure Limits</td>
</tr>
<tr>
<td>NGT 2304(0.5)</td>
<td>Differential Pressure Recorder</td>
</tr>
<tr>
<td>NGT 2305(0.5)</td>
<td>Mercury Instruments</td>
</tr>
<tr>
<td>NGT 2306(0.5)</td>
<td>Multiple Range Pressure Chart</td>
</tr>
</tbody>
</table>
### NIP 102(3)  
**Course ID:** 006847  
**Introduction of Pharmacology**  
Introduces dosage calculations and medication administration of commonly used medications. Includes an overview of common drug classifications, drugs and their effects. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Incorporates the fundamental core values: caring, diversity, ethics, excellence, holism, integrity, and patient-centeredness. Integrates the conceptualizing concepts: context and environment, knowledge and science, quality and safety, and relationship-centered care.  
**Pre-requisite:** Admission to the Integrated Nursing Program; successful completion of a Medicaid Nurse Aide equivalent course and proof of active status on the Medicaid Nurse Aide Registry. Completion, with a grade of ‘C’ or better, of BIO135, PSY110, and GT105 or OST 105 or equivalent. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course.  
**Components:** Clinical, Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NIP 140(6)**  
**Course ID:** 005435  
**Practical Nursing Role Transition**  
Prepares students to assume the role of graduate practical nurse. Promotes critical judgment, delegation and collaboration in the provision of safe, ethical, holistic, patient-centered care. Explores healthcare management systems and employment seeking skills as students begin to develop a professional identity. Includes a clinical practicum in a health care facility utilizing the nursing process and evidence-based information in delivering clinically competent care.  
**Pre-requisite:** Completion, with a grade of ‘C’ or better in NIP120, NIP128. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course. Lect: 2.0 credits (30 contact hours). Clinical: 4.0 credits (180 contact hours).  
**Components:** Clinical, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NIP 212(10)**  
**Course ID:** 016117  
**Advanced Medical Surgical Nursing**  
Focuses on advanced assessment of diverse individuals throughout the lifespan by incorporating the integrating concepts of nursing practice: context and environment, knowledge and science, personal/professional development, quality and safety, relationship-centered care, and teamwork. Examines current and historical issues impacting nursing. Introduces framework for organizing the care of clients with alterations in basic human needs by incorporating the seven core values of caring, diversity, excellence, integrity, ethics, holism, and patient-centeredness. Focuses on the integration of knowledge, skills acquisition, and critical thinking in the provision of prudent health care delivery. Examines client’s needs, health promotion, basic human needs, prevention of complication as related to mechanisms of self-defense including immunity, inflammation, infection, and the surgical patient. Examines client’s needs, health promotion, therapeutic communication, treatment modalities, concepts of mental health and assessment  
**Components:** Clinical, Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NIP 120(3)**  
**Course ID:** 005381  
**Maternal Child Nursing Care**  
Focuses on health promotion in the context of the family experiencing reproductive issues including pregnancy, labor and delivery, post-partum, and the newborn. Focuses on management of care for patients with perinatal complications and high-risk newborns. Integrates concepts of the NLN Education Competencies Model, Neuman’s Systems Model and the Maslow Hierarchy, including pharmacological and therapeutic interventions throughout the course.  
**Pre-requisite:** Completion with a grade of ‘C’ or better in NIP 116, NIP 102 and AHS 100. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course.  
**Components:** Clinical, Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NIP 128(10)**  
**Course ID:** 006842  
**Medical Surgical Alteration**  
Focuses on care of clients who present to normal lines of defense in hematology, immune, integumentary, fluid and electrolyte/ acid/base imbalance, respiratory, musculoskeletal, cardiovascular, gastrointestinal/ hepatobiliary, renal/urinary, endocrine, reproductive, and neurological systems. Integrates the concepts of nursing practice: context and environment, knowledge and science, professional/personal development, quality and safety, relationship-centered care, and teamwork. Uses the Neuman Systems Model to provide care for clients by incorporating the core values of caring, diversity, excellence, integrity, ethics, holism, and patient-centeredness. Through clinical experience and theory application, examines the clients’ needs, health promotion, various treatment modalities, and nursing interventions.  
**Pre-requisite:** Completion with a grade of ‘C’ or better in NIP 102, NIP 116; NIP 116 must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course.  
**Components:** Clinical, Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NMI 215(7)**  
**Course ID:** 005438  
**Leadership and Specialty Practice**  
Prepares the student in the Associate Degree Nursing Program to assume the role of a graduate nurse in the synthesis and application of the nursing process for the holistic care of the patient with complex, multidimensional stimuli. Emphasizes leadership and management of care, continued skill development and professionalism: to include ethics, integrity, excellence diversity and caring. Introduces the nursing student to the dynamics and issues of teams, organizations and the health care system that require effective leadership interventions and proactive leadership strategies. Emphasizes self-development of leadership attributes, such that every student will be able to recognize effective leadership strategies and will be able to implement these strategies in the appropriate time and place. Integrates theories and concepts from all nursing courses and provisions for practice in predominantly distributive health care settings. Emphasizes the utilization of the nursing process, prevention of illness, maintenance of health, and the  
**Components:** Clinical, Laboratory, Lecture  
**Attributes:** Course Also Offered in Modules, Technical  
**NMI 220(2)**  
**Course ID:** 016095  
**Advanced Cardiac & Emergent Care**  
Focuses on administration of care for acute cardiovascular emergencies including cardiac arrest, acute myocardial infarction, and stroke. Prepares students to participate in emergent care of patients with the acute illness. Focuses on the importance of team dynamics and communication, systems of care, and immediate post-cardiac-arrest care. Educates students on airway management and related pharmacology. Students demonstrating essential knowledge and skills, obtaining 85% or greater on the written exam, and successfully completing the megacode will receive an American Heart Association ACLS provider card.  
**Pre-requisite:** Completion with grade of ‘C’ or better in NIP 211 and MAT 150. Students must have Basic Life Support certification.  
**Components:** Lecture, Lab: 1.5 credits (67.5 contact hours).  
**Components:** Laboratory, Lecture  
**Attributes:** Technical  
**NMI 141(2)**  
**Course ID:** 005715  
**Nuclear Medicine and Molecular Imaging Technology**  
Introduces concepts and physical principles that govern radioactivity and the interactions of radiation with matter, the principles, operation and quality control for non-imaging, gas-filled detectors and non-imaging scintillation detectors; also the principles and applications of statistics as they relate to radiation detection and counting.  
**Pre-requisite:** Admission to the NMNI program. Computer Literacy: ([MAT 150] and [BIO 137 and BIO 139]) or consent of instructor. Corequisite: CHE 140 and either PHY 171 or PHY 172 and NMI 141 and NMI 142 and NMI 150. Lecture: 2.0 credits (30 contact hours).  
**Components:** Lecture  
**Attributes:** Technical  
**NMI 142(1)**  
**Course ID:** 005716  
**Radiation Biology and Protection**  
Covers interactions of ionizing radiation with human tissues, its potential effects, dosimetry and its relation to exposure. Covers radiation protection principles, applications and NRC regulations.  
**Pre-requisite:** Admission to the NMNI program. Computer Literacy: ([MAT 150] and [BIO 137 and BIO 139]) or consent of instructor. Corequisite: NMI 140 and NMI 142 and NMI 150. Prerequisite or Corequisite: CHE 140 and either PHY 171 or PHY 172. Lecture: 1.0 credit (15 contact hours).  
**Components:** Lecture  
**Attributes:** Technical  
**NMI 150(2)**  
**Course ID:** 005717  
**Clinical I**  
Introduces concepts of clinical practice with application of knowledge and principles from previous general education course work and/or concurrent NMNI courses. Will include actual clinical experience in an affiliated nuclear medicine clinical setting.  
**Pre-requisite:** Admission to the NMNI program. Computer Literacy: ([MAT 150] and [BIO 137 and BIO 139]) or consent of instructor. Corequisite: NMI 140 and NMI 141 and NMI 142) or consent of instructor. Corequisite: CHE 140 and either PHY 171 or PHY 172. Clinical: 2.0 credits (180 contact hours).  
**Components:** Clinical  
**Attributes:** Technical
NMI 160(2) Course ID: 005718
Clinical Procedures II
Covers imaging of organs and systems in relation to the abdomen and gastrointestinal tract in addition to imaging procedures and quantitative evaluation of the pulmonary system. Prerequisite: (NMI 140 and NMI 141 and NMI 142 and NMI 150) with a grade of C or greater) or consent of instructor. Corequisite: NMI 161 and NMI 170. Prerequisite or Corequisite: CHE 150. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

NMI 151(2) Course ID: 005719
Physics and Instrumentation II
Includes use and quality control of the various types of systems used for scintillation imaging and computed tomography in hybrid imaging. Covers the configuration, function, and application of computers in nuclear medicine. Prerequisite: (NMI 140 and NMI 141 and NMI 142 and NMI 150) with a grade of C or greater) or consent of instructor. Corequisite: NMI 160 and NMI 170. Prerequisite or Corequisite: CHE 150. Lecture/Lab: 2.0 credits (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

NMI 170(2) Course ID: 005720
Clinic II
Continuation of NMI 150 Clinic I. Covers clinical practice with application knowledge and principles from previous general education course work and previous/concurrent NMI courses. Will include actual clinical experience in an approved nuclear medicine clinical setting. Prerequisite: ([NMI 140 and NMI 141 and NMI 142 and NMI 150] with a grade of C or greater) or consent of instructor. Corequisite: NMI 230 or consent of instructor. Clinical: 2.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

NMI 220(2) Course ID: 005721
Clinic III
Continuation of NMI 170 Clinic II. Covers application of knowledge and principles from previous general education course work and/or previous/concurrent NMI courses. Includes actual clinical experience in an affiliated nuclear medicine clinical setting. Prerequisite: ([NMI 160 and NMI 161 and NMI 170] with a grade of C or greater) or consent of instructor. Corequisite: NMI 230 or consent of instructor. Clinical: 2.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

NMI 230(2) Course ID: 005722
Radiopharmacy
Covers procurement, preparation, quality control, dispensing, patient dosage calculation, identification, documentation, administration, disposal, storage, and safe handling of radioactive materials used by the nuclear medicine technologist. Includes commonly used pharmaceuticals in Nuclear Medicine, including dosages, side effects, contraindications, adverse reactions and antagonists. (CT contrast media administration.). Prerequisite: ([NMI 160 and NMI 161 and NMI 170] with a grade of C or greater) or consent of instructor. Corequisite: NMI 220 or consent of instructor. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

NMI 240(4) Course ID: 005723
Clinical Procedures III
Covers imaging procedures of the urinary system, central nervous system and endocrine systems including appropriate interventional and challenge procedures. Prerequisite: (NMI 220 and NMI 230) with a grade of C or greater) or consent of instructor. Corequisite: NMI 260 or consent of instructor. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

NMI 250(4) Course ID: 005724
Clinical Procedures IV
Covers oncologic imaging procedures, inflammatory/ infectious process imaging procedures, radiouclide therapy procedures, non-imaging procedures related to hematology and vitamin B-12 absorption / excretion and pediatric imaging. Pre-requisite: (([NMI 240 and NMI 230] with a grade of C or greater) or consent of instructor. Corequisite: NMI 270 or consent of instructor. Lecture: 4.0 (60 contact hours).

Components: Lecture
Attributes: Technical

NMI 260(4) Course ID: 005725
Clinic IV
Continuation of NMI 220 Clinic III; Covers application of knowledge and principles from previous general education course work and/or previous/concurrent NMI courses. Will include actual clinical experience in an approved nuclear medicine clinical setting. Pre-requisite: (([NMI 240 and NMI 230] with a grade of C or greater) or consent of instructor. Corequisite: NMI 240 or consent of instructor. Clinical: 4.0 credits (360 contact hours).

Components: Clinical
Attributes: Technical

NMI 270(4) Course ID: 005726
Clinic V
Continuation of NMI 260 Clinic IV; Covers application of knowledge and principles from previous general education course work and/or previous/concurrent NMI courses. Includes actual clinical experience in an approved nuclear medicine clinical setting. Pre-requisite: (([NMI 240 and NMI 260] with a grade of C or greater) or consent of instructor. Co-requisite: NMI 250 or consent of instructor. Clinical: 4.0 credits (360 contact hours).

Components: Clinical
Attributes: Technical

NPN 100(2) Course ID: 004021
Introduction to Nursing & Health Care System
Includes a historical overview of current health care including medical economics, ethical and legal parameters, roles and responsibilities of health care team members with an emphasis on reflective nursing practice. Explores medical terminology, therapeutic communication techniques, concepts of health, health assessment, self care and basic needs related to activities of daily living across the lifespan. Prerequisite: Admission to Practical Nursing program AND CPR for Health Care Providers certification to be maintained throughout enrollment in the program AND ([NAA 100 or equivalent] within the past three years OR active status on the Medicaid Nurse Aide Registry) AND Digital Literacy as defined by KCTCS. Prerequisite or Corequisite: [(BIO 135 or BIO 139) and (AHS 100 or PSY 223)] with a minimum grade of C in each course) OR Consent of PN Coordinator. Lecture: 2.0 credits (45 contact hours); Lab: Clinical: 3.0 credits (45:1 ratio/135 contact hours).

Components: Clinical, Laboratory, Lecture
Attributes: Technical

NPN 106(6) Course ID: 005627
Fundamentals of Nursing Care
Provides a historical overview of health care system and roles and responsibilities of members of the health care team. Emphasizes practical nursing and the nursing process in the context of Functional Health Patterns as related to client daily living across the life span. Covers fundamental nursing skills including therapeutic communication techniques; nursing assessment; nursing process and care planning; legal and ethical parameters of health care; rest and sleep; body mechanics and introductory content on the surgical experience. Prerequisite: Admission to Practical Nursing program AND CPR for Health Care Providers certification to be maintained throughout enrollment in the program AND ([NAA 100 or equivalent] within the past three years OR active status on the Medicaid Nurse Aide Registry) AND Computer Literacy as defined by KCTCS. [ENG 101 and MT 110 and (AHS 1 15 or CLA 131) with a minimum C grade..]. Prerequisite or Corequisite: (BIO 139 and PSY 223). Minimum C grade Lecture: 4 credits (60 contact hours). Lab: 2 credits (90 contact hours)

Components: Clinical, Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

NPN 108(3) Course ID: 005628
Pharmacology in Nursing
Introduces dosage calculations and medication administration of commonly used medications. Includes an overview of common drugs, drug classifications, and effects administered in the following modes: oral, sublingual, rectal, topical, intradermal, intramuscular, subcutaneous, intravenous including IV fluid administration skills. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Prerequisite: Admission to the Practical Nursing program AND CPR for Health Care Providers or Red Cross Professional Rescuer certification to be maintained throughout enrollment in the program AND ([NAA 100 or equivalent]) within the past three years OR active status on the Medicaid Nurse Aide Registry) AND Computer Literacy as defined by KCTCS. MT 110 or higher numbered math course, with the exception of higher numbered courses which do not fulfill the general education math for the AAS degree) AND (AHS 115 or CLA 131) AND ENG 101, with a minimum grade of C in each course). Prerequisite or Corequisite: BIO 139 and PSY 223.

Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical
NPN 110(2) Course ID: 004023

Pharmacology I
Introduces techniques used to administer medications. Includes dosages, diagnostic studies, related medical therapies, and legal responsibilities. Prerequisite: Admission to Practical Nursing program AND CPR for Health Care Providers certification to be maintained throughout enrollment in the program AND ([NAA 100 or equivalent] within the past three years OR active status on the Medication Aide Registry) AND Digital Literacy as defined by KCTCS. Prerequisite or Corequisite: ([BIO 135 or BIO 139] and [AHS 100 or PSY 223]) with a minimum grade of C in each course) OR Consent of PN Coordinator. Minimum C grade. Lecture: 1.0 credit (15 contact hours); Lab/Clinical: 1.0 credit (45:1 ratio/45 contact hours).

Attributes: Laboratory, Lecture

NPN 111(3) Course ID: 005728

Pharmacology
Introduces dosage calculations and medication administration of commonly used medications. Includes an overview of common drugs, drug classifications, and effects administered in the following modes: oral, sublingual, rectal, topical, intradermal, intramuscular, subcutaneous, intravenous including IV fluid administration skills. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Prerequisite: Admission to Practical Nursing program AND CPR for Health Care Providers certification to be maintained throughout enrollment in the program AND ([NAA 100 or equivalent] within the past three years OR active status on the Medication Aide Registry) AND Digital Literacy as defined by KCTCS. Prerequisite or corequisite: Pathway 2: NPN 101 and (BIO 135 or BIO 139) and (AHS 115 or AHS 120 or CLA 131 or OST 103) and (AHS 100 or PSY 223). If taken as pre-requisite must complete within 1 year or better. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (90 contact hours).

Attributes: Clinical, Laboratory, Lecture

Attributes: Course Also Offered in Modules, Technical

NPN 115(6) Course ID: 004026

Practical Nursing Bridge Course
Provides overview of the health care system and roles and responsibilities of the health care team. Emphasizes the nursing process in the context of Gordon’s Functional Health Patterns and Maslow’s hierarchy of needs as related to client daily living across the life span. Covers fundamental nursing skills including therapeutic communication techniques, nursing assessment, and the nursing process. Introduces dosage calculations and administration of medications. Includes an overview of common drugs, drug classifications, and effects of drugs administered in all modes. Emphasizes nursing responsibility, accountability, and the application of the nursing process to drug therapy. Upon successful completion of all components of the course, the student will be admitted to NPN 135 and will have earned advanced standing hours, dependent upon curriculum option. Prerequisite: Admission to the Practical Nursing Program AND ([NAA 115 or equivalent] AND [BIO 135 or BIO 139] AND [ENG 101 or COM 161 or COM 252 or TEC 200] AND [CLA 131 or AHS 120 or OST 103]) AND Components: Laboratory, Lecture Attributes: Technical

NPN 125(3) Course ID: 004025

Mental Health
Applies nursing process to clients experiencing common mental health problems with emphasis on assisting clients to cope with psychological problems throughout the life span - i.e., chemical dependency, violence and other stress and developmental problems related to mental health. Prerequisite: Pathway 1: (NPN 100 and NPN 105 and NPN 110) and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) or Consent of PN coordinator. Minimum C grade. Prerequisite or Corequisite: Pathway 2: (NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) or Consent of PN coordinator. Minimum C grade). Prerequisite or Corequisite: Pathway 3: (NP 106 and NPN 108 and BIO 139 and PSY 223) Minimum C grade. Lecture: 2.0 credits (30 contact hours), Lab/Clinical: 1.0 credit (45 contact hours).

Components: Clinical, Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical

NPN 200(5) Course ID: 004028

Med Surg I
Applies nursing process to selected child/adult clients experiencing common health deviations involving activities of daily living. Emphasis in on the nurse as the provider of care. Prerequisite: Pathway 1: ([NPN 100 and NPN 105 and NPN 110 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223)] or Consent of PN Coordinator). Minimum C grade. Pathway 2: ([NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 115 or AHS 120 or CLA 131 or OST 103) and (AHS 100 or PSY 223)] Minimum C grade) Lecture: 3.0 credits (45 contact hours); Lab/Clinical: 3.0 credit (45:1 ratio/135 contact hours).

Components: Clinical, Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical

NPN 205(5) Course ID: 004029

Med Surg II
Applies the nursing process to child/adult clients experiencing more complex health alterations. The focus is on multi-system failure, fluid and electrolytes, neurological problems, and cellular deviation. Prerequisite: NPN 220. All courses must be achieved with a grade of C or higher. Lecture: 3.0 credits (45 contact hours); Lab/Clinical: 2.0 credits (90 contact hours/45:1 ratio).

Components: Clinical, Laboratory, Lecture Attributes: Technical

NPN 206(6) Course ID: 005730

Med-Surg II Alterations
Applies nursing process to selected child/adult clients experiencing complex health issues related to multi-system failure, neurological disorders, coordination dysfunctions, and elimination problems that interfere with activities of daily living with an emphasis on the nurse as the provider of care. Prerequisite: ([NPN 202 with a grade of C or greater] or Consent of PN Coordinator). Prerequisite or corequisite: NPN 201. If prerequisite, a grade of C or greater must be achieved. Laboratory, Lecture: 6 credits (150 contact hours).

Components: Clinical, Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical

NPN 210(4) Course ID: 004030

Clinical Practicum
Integrates the theoretical concepts learned throughout the program in application of this knowledge during the direct care of patients. Promotes creative thinking and problem solving skills during the nursing role performances of provider of care, manager of care, and member within the discipline. Prerequisite: Pathway 1: NPN 205. Minimum C grade. Pathway 2: NPN 206. Minimum C grade. Prerequisite Or Co-requisite: Pathway 3: (NPN 208 and NPN 215) or Consent of PN Coordinator. Minimum C grade. Lecture: 1.0 credit (15 contact hours); Practicum: 3.0 credits (45:1 ratio/135 contact hours).

Components: Lecture, Practicum Attributes: Course Also Offered in Modules, Technical

NPN 215(1) Course ID: 004125

Nursing Trends & Issues

Components: Clinical, Lecture Attributes: Course Also Offered in Modules, Technical

NPN 100(0.5) Course ID: 006270

Roles & Professionalism
Provides a historical overview of health care system and roles and responsibilities of members of the health care team. Covers fundamental nursing skills including therapeutic communication techniques, legal and ethical parameters of health care, cultural aspects of care, and professionalism. Prerequisite: Admission into the KCTCS Online Practical Nursing Program requires minimum grade of C in (BIO137 & BIO 139) and (AHS 115 or CLA 131 or AHS 120 or OST 103) and (PSY100 or FY110 and PSY 223) and ENG101 and CLS100 or equivalency Current CPR card for Health Care Providers; Current certification must be maintained throughout the program. Proof of active status on the Kentucky Nurse Aide Registry (KNAR). Lecture: 0.5 credit (7.5 contact)

Components: Lecture

NPN 101(2) Course ID: 006271

Nursing Process
Emphasizes practical nursing and the nursing process in the context of Gordon’s Functional Health Patterns and Maslow’s hierarchy of needs as related to client daily living across the life span. Covers fundamental nursing skills including nursing assessment, nursing process, planning, and charting. Prerequisite: NPN 101 with a C or better. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture
NPN 1013(1) Course ID: 006272
Basic Human Needs
Emphasizes practical nursing and the nursing process in the context of Gordon's Functional Health Patterns and Maslow's hierarchy of needs as related to client daily living across the life span. Covers fundamental nursing skills including nursing assessment; nursing process and care planning; charting; legal and ethical parameters of health care; rest and sleep; and body mechanics. Prerequisite: NPN 1011 with a C or better. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

NPN 1014(0.5) Course ID: 006273
Nutrition
Emphasizes practical nursing and the nursing process in the context of Gordon's Functional Health Patterns and Maslow's hierarchy of needs as related to client daily living across the life span. Covers fundamental nursing skills including metabolism/nutrition; rest and sleep; and health promotion. Prerequisite: NPN 1011, NPN 1012 and NPN 10103 with a C or better. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture

NPN 1015(1) Course ID: 006274
Nursing Fundamentals Lab
Emphasizes practical nursing and the nursing process in the context of Gordon's Functional Health Patterns and Maslow's hierarchy of needs as related to client daily living across the life span. Includes the application of knowledge and skills in a lab setting. Prerequisite: NPN 1011 Completion with a C or better. Prerequisite or corequisite: NPN 1012 and NPN 1013 and NPN 1014 (Pre-requisites must be completed with a C or better). Laboratory: 1 credit (45 contact hours).
Components: Laboratory

NPN 1061(1) Course ID: 005699
PN Role in Health Care Delivery
Presents an introduction to the role of the Practical Nurse with emphasis on legal, ethical, and cultural components. Reflects Gordon's Functional Health Patterns across the lifespan, therapeutic communication, and the importance of life-long learning. Prerequisite: Current CPR card for Health Care Providers; Current certification must be maintained throughout the program. Successful completion of a Medicaid Nurse Aide equivalent course within the past three (3) years or proof of active status on the Medicaid Nurse Aide Registry. Admission into the Practical Nursing Program. (ENG 101 and MT 110 and (AHS 115 or CLA 131)), Minimum C grade. Prerequisite or Corequisite: BIO 139 and PSY 223. Must achieve a C or higher in each prerequisite course. Lecture: 0.75 credits (11.25 contact hours). Lab: 0.25 credits (11.25 contact hours).
Components: Laboratory, Lecture

NPN 1062(1.5) Course ID: 005700
Nursing Process
Presents the nursing process and the development of the patient plan of care. Prerequisite: NPN 1061. Minimum C grade. Prerequisite or Corequisite: (BIO 139 and PSY 223) Minimum C grade. Lecture: 1 credit (15 contact hours). Lab: 0.5 credits (22.5 contact hours).
Components: Laboratory, Lecture

NPN 1063(1.5) Course ID: 005701
Health Assessment
Presents health assessment and is a lab component of various skills that must be successfully completed prior to the student's caring for patients in the clinical arena (versus simulated patients). Prerequisite: NPN 1062 Minimum C grade. Prerequisite or Corequisite: (BIO 139 and PSY 223), Minimum C grade. Lecture: 1 credit (15 contact hours). Lab: 0.25 credits (11.25 contact hours). Clinical: 0.25 credits (11.25 contact hours).
Components: Clinical, Laboratory, Lecture

NPN 1064(2) Course ID: 005702
Care of the Client Undergoing Surgical Intervention
Presents the patient undergoing surgical intervention and the related lab/clinical components. Prerequisite: NPN 1063. Minimum C grade. Prerequisite or Corequisite: (BIO 139 and PSY 223). Minimum C grade. Lecture: 1.25 credits (19.75 contact hours). Lab: 0.25 credits (11.25 contact hours).
NPN 1352(1.25) Course ID: 006283

Alterations in Oxygenation 1

Provides for application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as provider of care for those patients experiencing alterations in oxygenation focusing on respiratory function. Prerequisite: NPN 1351 with a C or better. Lecture: 0.75 credit (11.25 contact hours). Laboratory: 0.5 credit (22.5 contact hours).

Components: Laboratory, Lecture

NPN 1353(1) Course ID: 006284

Clinical 1

Provides for the application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as provider of care for patients during the perioperative cycle and those experiencing alterations in oxygenation focusing on respiratory function. Prerequisite: NPN 1351 with a C or better. Prerequisite or corequisite: NPN 1352 (Pre-requisites require a C or better). Clinical 1 credit (45 contact hours).

Components: Clinical

NPN 1354(1.25) Course ID: 006285

Alterations in Oxygenation 2

Provides for application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as provider of care for those patients experiencing alterations in oxygenation focusing on respiratory function. Prerequisite: (NPN 1351 and NPN 1352 and NPN 1353) with a grade of "C" or better in each course. Lecture: 0.75 credits (11.25 contact hours). Lab: 0.5 credit (22.5 contact hours).

Components: Laboratory, Lecture

NPN 1355(0.75) Course ID: 006286

Threats To defenses

Includes the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as provider of care for those patients experiencing threats to body defenses. Prerequisite: NPN 1354 Completion with a C or better. Lecture: 0.75 credit (11.25 contact).

Components: Lecture

NPN 1356(1) Course ID: 006287

Clinical II

Introduces application of the nursing process for selected child/adult clients experiencing common health deviations with activities of daily living. Emphasizes the nurse as a provider of care for those patients experiencing alterations in body defenses and alterations in oxygenation. Prerequisite: NPN 1355 NPN 1355 (Pre-requisites require a C or better). Clinical: 1.0 credit (45 contact hours).

Components: Clinical

NPN 1401(0.75) Course ID: 005760

Fluid/Electrolyte Balance Care

Presents content on fluid and electrolyte balance and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 106 and NPN 108 and BIO 139 and PSY 223 with a minimum grade of "C" in each course. Prerequisite or corequisite: (NPN 125 and NPN 201). Minimum C grade. Lecture: 0.5 credits (7.5 contact hours). Laboratory: 0.125 credits (5.625 contact hours). Clinical 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 1402(0.75) Course ID: 005761

Cardio–Respiratory Function Care

Presents content on cardiovascular and respiratory function, and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 1401 Minimum C grade. Prerequisite or corequisite: (NPN 201 and NPN 125) Minimum C grade. Lecture: 0.5 credits (7.5 contact hours). Laboratory: 0.125 credits (5.625 contact hours). Clinical 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 1403(0.75) Course ID: 005763

Nutrition and Activity/Exercise Functions across the Lifespan

Presents content on alterations in nutrition and activity/exercise, the administration of medications to children, and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 1402 Minimum C grade. Prerequisite or corequisite: NPN 201 and NPN 125 with minimum C grade. Lecture: 0.5 credits (7.5 contact hours). Laboratory: 0.125 credits (5.625 contact hours). Clinical 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 1404(0.75) Course ID: 005764

Surgical Intervention Care

Presents content on the adult/child patient experiencing surgical intervention, and the role of the practical nurse in planning appropriate care. Prerequisite: NPN 1403 Minimum C grade. Prerequisite or corequisite: NPN 201 and NPN 125. Minimum C grade. Lecture: 0.5 credits (7.5 contact hours). Laboratory: 0.125 credits (5.625 contact hours). Clinical 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 2011(0.75 - 1) Course ID: 005770

Ante-Partal Phase Care

Presents content on prenatal assessment and the role of the practical nurse in planning appropriate interventions. Prerequisite: Pathway 1: (NPN 100 and NPN 105 and NPN 110) and (BIO 135 or BIO 139) and (AHS 100 or PSY 223)) with a minimum grade of "C" in each course. Pathway 2: (NPN 100 and NPN 111 and (BIO 135 or BIO 129) and (AHS 100 or PSY 223)) with a minimum grade of "C" in each course. Prerequisite or corequisite: Pathway 3: (NPN 106 and NPN 108 and BIO 139 and PSY 223) with a minimum grade of "C" in each course. Lecture: 0.75 credits (11.25 contact hours). Lab: 0.5 credit (22.5 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 2012(0.75) Course ID: 005771

Intra-Partal Phase Care

Presents content on intra-partal assessment and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 2011 Minimum C grade. Prerequisite or corequisite: Pathway 2: (NPN 202 and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of "C" in each course. Lecture: 0.125 credits (5.625 contact hours). Laboratory: 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 2013(0.75) Course ID: 005772

Post-Partal: Maternal Phase Care

Presents content on maternal post-partal assessment and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 2012 with minimum C grade. Prerequisite or corequisite: Pathway 2: (NPN 202 and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of "C" in each course. Lecture: 0.125 credits (5.625 contact hours). Laboratory: 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 2014(0.75) Course ID: 005773

Nursing Care of the Newborn

Presents content on newborn assessment and the role of the practical nurse in planning appropriate interventions. Prerequisite: NPN 2013 Minimum C grade. Prerequisite or corequisite: Pathway 2: (NPN 202 and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of "C" in each course. Lecture: 0.5 credits (7.5 contact hours). Clinical: 0.125 credits (5.625 contact hours). Laboratory: 0.125 credits (5.625 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 2015(0.5) Course ID: 006288

Prenatal and Women's Health

Presents content on prenatal assessment and women's health focusing on the role of the practical nurse in planning appropriate interventions in an interactive format.
NRS 204(10) Course ID: 004336
Nursing Care IV
Integrates previous knowledge and skills into the development of the associate degree nurse. Focuses on the four roles of nursing practice including human flourishing, human judgment, professional identity, and spirit of inquiry with an emphasis on leadership, management, clinical decision-making, collaboration, knowledge, judgment, skills and professional values within a legal/ethical framework. Applies problem-solving and critical thinking skills to the care of diverse clients/families across the lifespan with actual or potential alterations in health due to complex acute and chronic health problems. Includes an integrated clinical practicum of direct patient care in a healthcare setting, goal setting and self-awareness, tools/strategies for success in nursing programs, and trends impacting nursing's future. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

NSG Nursing

NSG 100(3) Course ID: 005269
Preparation for Nursing
Explores careers in the nursing profession. Includes career options and educational pathways, goal setting and self-awareness, tools/strategies for success in nursing programs, and trends impacting nursing's future. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

NSG 101(8) Nursing Practice I
Covers nursing practice using functional health patterns within the context of the contemporary healthcare delivery system. Emphasizes foundation knowledge of nursing practice, skills acquisition, and the care of patients with health perception-health management, value-belief, and rest-sleep dysfunctional health patterns. Prerequisite: Admission to the Associate Degree Nursing Program. (BIO 137 and MAT 110 or MAT 150 or higher) with a grade of "C" or better, PSY 110 and Computer Literacy. Pre-requisite Or Co-requisite: BIO 139 with a grade of "C" or better and PSY 223, Lecture: 5 credits (75 contact hours). Clinical: 4 credits (180 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 106(9) Nursing One
Introduces and applies Gordon's Functional Health Patterns (FHP) within the context of the contemporary healthcare delivery system. Emphasizes foundation knowledge of nursing practice, skills acquisition, and the care of clients with risk for or actual common chronic health pattern dysfunctions. Prerequisite: Admission to Associate Degree Nursing Program, BIO 137 (within ten years) with a grade of "C" or better, MAT 110 or MAT 150 with a grade of "C" or better, and PSY 110. Prerequisite or Corequisite: BIO 139 with a grade of "C" or better (within 10 years) and ENG 101. Lecture: 5.0 credits (75 contact hours). Clinical: 4.0 credits (180 contact hours).
Components: Clinical, Lecture
Attributes: Technical

NSG 126(3) Course ID: 004280
Pharmacology in Nursing
This is an elective course which studies common drugs, their classification, and their effects on functional and dysfunctional health patterns. Areas of emphasis include nursing responsibility, accountability, and application of the nursing process regarding drug therapy. Lecture: 3 hours.
Components: Lecture
Attributes: Technical

NSG 196(5) Course ID: 006180
Nursing LPN Bridge Course
Builds upon the LVN/LPN experiences in application of core components of nursing. Focuses on the nursing care for the patient with mental health dysfunctions and the patient experiencing acute and/or chronic health pattern dysfunctions. Covers selected content and skills from Nursing One and Nursing Two. Includes the role of the Associate Degree Nurse and application of the core components of nursing practice to patient's experience. Prerequisite: Admission to Associate Degree Nursing Program, BIO 137 and BIO 139 (within ten years) with a grade of C or better, MAT 110 or MAT 150 with a grade of C or better, PSY 110, ENG 101, PSY 223 and Oral Communications course. Prerequisite or Corequisite: NSG 216. Lecture: 4.0 credits (60 contact hours). Clinical: 1.0 credit (45 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 197(3) Course ID: 005907
Transition to ADN
Builds upon the basic nursing skills and concepts learned in the LVNLN experience. Assists the Practical Nurse to make the beginning transition to the RN role. Includes the role of the Associate Degree Nurse and application of the course components of nursing practice to patients experiencing the dysfunctional health patterns of nutritional-metabolic and elimination. Upon successful completion of all components of the course, the student will be admitted to NSG 220 and will have earned by advanced standing, 15 credit hours in nursing. Prerequisite: Admission to the Associate Degree Nursing Program and (BIO 137 and BIO 139 and (MAT 110 or MAT 150 or higher) with a grade of "C" or better), PSY 110, PSY 223, ENG 101, Oral Communications and Computer Literacy. Prerequisite or corequisite: NSG 215 and NSG 212 with a grade of "C" or better. Lecture: 2.5 credits (37.5 contact hours). Laboratory: 0.5 credit (22.5 contact hours).
Components: Clinical, Lecture
Attributes: Technical

NSG 199(2) Course ID: 005905
Accelerated Transition: PN-A.D.N Bridge
Provides an accelerated course designed for the LPN/LVN who demonstrates through competency assessment the ability to build upon previous learning and experience. Focuses on the beginning transition to the RN role, the acquisition of essential skills and the development of critical thinking in the care of patients experiencing the dysfunctional health patterns of nutritional-metabolic and elimination. Upon successful completion of all components of the course the student will be admitted to NSG 220 and will have earned by advanced standing, a total of 15 credit hours in nursing. Prerequisite: Admission to the Associate Degree Nursing Program and (BIO 137 and BIO 139 and (MAT 110 or MAT 150 or higher) with a grade of "C" or better), PSY 110, PSY 223, ENG 101, Oral Communications, Computer Literacy and a passing score on a national normed PN to RN mobility examination. Corequisite: NSG 215 and ENG 212. Lecture: 1.5 credit (22.5 contact hours) Laboratory: 0.5 credit (22.5 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

NSG 201(5) Course ID: 000790
LPN to ADN Bridge
This course will build upon the basic nursing skills and concepts learned in the LVNLN experience. The course is designed to assist the Practical Nurse to make the beginning transition to the RN role. Areas of study include the role of the Associate Degree Nurse and application of the core components of nursing practice to clients experiencing the dysfunctional health patterns of health perception-health management, value-belief, rest-sleep, activity-exercise and nutritional-metabolic. Upon successful completion of all components of the course, the student will be admitted to NSG 203 and will have earned by advanced standing, 15 credit hours in nursing. Lecture: 4 hours. Laboratory: 3 hours. Prerequisite: BIO 137, BIO 139, MT 110 or MT 150 or higher with a grade of C or better, PSY 110, ENG 101, Computer Literacy. Components: Laboratory, Lecture
Attributes: Technical

NSG 206(8) Course ID: 006181
Nursing Two
Includes the application of core components of nursing to clients experiencing alterations in health. Focuses on nursing care for the client with mental health dysfunctions and the client experiencing acute and/or chronic health pattern dysfunctions. Prerequisite: NSG 106 with a grade of "C" or better. Corequisite: NSG 216. Prerequisite or corequisite: PSY 223 and Oral Communications course. Lecture: 5 credits (75 contact hours). Laboratory/Clinical: 4 credits (180 contact hours, 45:1 ratio).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 210(6) Course ID: 005906
Medical Surgical Nursing I
Focuses on the application of the core components of nursing to adult patients experiencing dysfunctional health patterns. Emphasizes the care of patients with nutritional-metabolic and elimination dysfunctional health patterns. Prerequisite: (NSG 101 and BIO 139) with a grade of "C" or better and PSY 223. Prerequisite or corequisite: (NSG 212 and NSG 215) with a grade of "C" or better, ENG 101 and Oral Communications. Lecture: 3.0 credits (45 contact hours). Laboratory: 3.0 credits (135 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 211(3) Course ID: 005908
Maternal Newborn Nursing
Focuses on the application of the core components of nursing to the care of childbearing families experiencing functional and dysfunctional health patterns. Prerequisite: (NSG 210, NSG 212 and NSG 215), with a grade of "C" or higher, ENG 101 and Oral Communications. Prerequisite or corequisite: NSG 220 with a grade of "C" or higher, ENG 102, and BIO 225. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (45 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 212(3) Course ID: 005909
Behavioral Health Nursing
Focuses on the application of the nursing care to patients experiencing a dysfunctional health pattern. Emphasizes the care of patients with Coping-Stress-Tolerance and Altered Role-Relationship health patterns. Prerequisite: (NSG 101 and BIO 139) with a grade of "C" or higher and PSY 223. Prerequisite or corequisite: (NSG 210 and NSG 215) with a grade of "C" or higher, ENG 101 and Oral Communications. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (45 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 213(3) Course ID: 005910
Pediatric Nursing
Focuses on the application of the core components of nursing to the care of the child and family experiencing functional and dysfunctional health patterns. (Unsuccessful completion of NSG 213 will require mandatory withdrawal from NSG 220; 201 KAR 20:220). Pre-requisite: (NSG 220 and NSG 211 and BIO 225) with a grade of "C" or better, ENG 102. Co-requisite: NSG 230 or consent of instructor. Pre-requisite or Co-requisite: NSG 225 with a grade of "C" or better, and Heritage/Humanities. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (45 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 215(1) Course ID: 005911
Pharmacology I
Focuses on common drugs, their classification and effects on functional and dysfunctional health patterns (value/belief, rest/sleep, health perception/health management, nutritional/metabolic and elimination health patterns). Emphasizes nursing responsibility, accountability, and application of the nursing process regarding drug therapy. Prerequisite: (NSG 101 and BIO 139) with a grade of "C" or higher and PSY 223. Pre-requisite or Co-requisite: (NSG 210 and NSG 212) with a grade of "C" or higher, ENG 101 and Oral Communication. Lecture: 1.0 contact (15 contact hours).
Components: Lecture
Attributes: Technical
NSG 216(1) Course ID: 006182
Nursing Pharmacology I
Focuses on common drugs: classifications, indications, and effects. Emphasizes nursing implications and the use of the nursing process in medication administration with emphasis on content introduced in Nursing One and Nursing Two. Pre-requisite: NSG 106 with a grade of "C" or better. Co-requisite: NSG 206 or NSG 196. Pre-requisite or Co-requisite: PSY 223 and Oral Communications course. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 226(1) Course ID: 006183
Nursing Pharmacology II
Focuses on common drugs: classifications, indications, and effects. Emphasizes nursing implications and the use of the nursing process in medication administration with emphasis on content introduced in Nursing Three and Nursing Four. Pre-requisite: (NSG 206 and NSG 216) with a grade of "C" or better. Co-requisite: NSG 236. Pre-requisite or Co-requisite: BIO 225 (within ten years) with a grade of "C" or better and ENG 102. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 236(9) Course ID: 006184
Nursing Three
Includes application of the core components of nursing to the care of child-bearing and child-rearing families experiencing functional and dysfunctional health patterns. Pre-requisite: (NSG 206 and NSG 216) with a grade of "C" or better. Co-requisite: NSG 226. Pre-requisite or Co-requisite: BIO 225 (within ten years) with a grade of "C" or better and ENG 102. Lecture: 5.0 credits (75 contact hours) Laboratory/Clinical: 4.0 credits (180 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 246(9) Course ID: 006185
Nursing Four
Emphasizes the development of the nurse as a provider of care, manager of care, and member of the nursing profession. Provides for the application of critical thinking skills in the care of diverse patients/families across the lifespan with actual or potential alteration in health due to complex acute and chronic health problems. Includes an integrated practicum with an emphasis on leadership, management, clinical judgment, collaboration, knowledge, skills, and professional values within the legal/ethical framework to facilitate the transition of the student to Registered Nurse practice. Pre-requisite: (NSG 236 and NSG 226) with a grade of "C" or better. Pre-requisite or Co-requisite: Heritage/Humanities/Foreign Language. Lecture: 5.0 credits (75 contact hours) Laboratory/Clinical: 4.0 credits (80 contact hours, 45:1 ratio).
Components: Clinical, Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 264(3) Course ID: 005913
Pharmacology I
Focuses on common drugs, their classification and effects on functions and dysfunctions. Emphasizes the care of patients with activity-exercise dysfunctions of the body systems (cardiac, respiratory and musculoskeletal). Pre-requisite: (NSG 210, NSG 215 and NSG 212) with a grade of "C" or higher and ENG 101 and Oral Communications. Pre-requisite or Co-requisite: (NSG 211 and BIO 225) with a grade of "C" or higher and ENG 102. Lecture: 3.0 credits (45 contact hours) Laboratory: 3.0 credits (135 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 225(1) Course ID: 005912
Pharmacology II
Focuses on common drugs, their classification and effects on functions and dysfunctions. Emphasizes the care of patients with activity-exercise dysfunctions of the body systems (cardiac, respiratory and musculoskeletal). Pre-requisite: (NSG 225 will require mandatory withdrawal from NSG 230, 201 KAR 20:320). Pre-requisite: (NSG 220 and NSG 215 and BIO 225) with a grade of "C" or higher and ENG 102. Co-requisite: NSG 230 or consent of instructor. Pre-requisite or Co-requisite: Heritage/Humanities/Foreign Language and NSG 213. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

NSG 226(1) Course ID: 006183
Nursing Pharmacology II
Focuses on common drugs: classifications, indications, and effects. Emphasizes nursing implications and the use of the nursing process in medication administration with emphasis on content introduced in Nursing Three and Nursing Four. Pre-requisite: (NSG 206 and NSG 216) with a grade of "C" or better. Co-requisite: NSG 236. Pre-requisite or Co-requisite: BIO 225 (within ten years) with a grade of "C" or better and ENG 102. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

NSG 234(1) Course ID: 005914
Medical/Surgical Nursing III
Focuses on the application of the core components of nursing to adult patients experiencing dysfunctional health patterns. Emphasizes the care of patients with cognitive/perceptual, altered self-perception/self-concept, and cognitive perceptual. Emphasizes the care of patients with activity-exercise dysfunctions of the body systems (cardiac, respiratory and musculoskeletal). Pre-requisite: (NSG 210, NSG 215 and NSG 212) with a grade of "C" or higher and ENG 101 and Oral Communications. Pre-requisite or Co-requisite: (NSG 211 and BIO 225) with a grade of "C" or higher and ENG 102. Lecture: 3.0 credits (45 contact hours) Laboratory: 3.0 credits (135 contact hours).
Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 235(1) Course ID: 005782
Healthcare Cultural Immersion Experience
Introduces health care providers to cultural values, beliefs, practices, and communication patterns of a chosen culture through an immersion experience. Focuses on basic cultural vocabulary and on behaviors, beliefs, and nursing and health care practices of the chosen population. May be conducted in a country native to the chosen cultural group. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

NSG 298(3) Course ID: 004434
Alternative and Complementary Therapies
This is an elective course that focuses on the impact of alternative and complementary therapies in nursing practice. Holistic nursing is emphasized, as well as the nurse’s role in enhancing healing of the whole person from birth to death. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

NSG 299(1 - 4) Course ID: 000531
Instructor Consent Required
Selected Topics in Nursing: (Topic)
Various nursing topics, issues, and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructor; courses may be repeated with different topics to a maximum of six credit hours. Lecture: Varies by topic; Laboratory: Varies by topic. Pre-requisite: Consent of instructor.
Components: Laboratory, Lecture
Attributes: Technical

NSG 1961(0.4) Course ID: 006305
Validation of Essential Skills
Review of essential skills set. Pre-requisite: Admission to LPN to A.D.N. Bridge Program: [(BIO 137 and BIO 139) within ten years, with a grade of C or better] and [(MT 110 or MT 150) with a grade of C or better] and (PSY 100 or PY 110) and PSY 223 and Oral Communications. Laboratory: 0.4 credit (18 contact hours).
Components: Laboratory

NSG 1962(1) Course ID: 006306
Role Transition - Level I
Provides transitions from the Licensed Practical Nurse to the role of Associate Degree Nurse. Pre-requisite: NSG 1961 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2161 with a grade of C or better taken as a Pre-requisite. Lecture: 1 credit (15 contact hours).
Components: Lecture

NSG 1963(1) Course ID: 006307
Behavioral Health
Focuses on the nursing care for the client with mental health dysfunctions. Pre-requisite: (NSG 1962 and NSG 2161) with a grade of C or better. Lecture: 1 credit (15 contact hours).
Components: Lecture

NSG 1964(0.3) Course ID: 006308
Introduction to ADN Skills I
Allows students to demonstrate competencies for the care of the mental health client. Pre-requisite: NSG 1963 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2162 with a grade of C or better if taken as a pre-requisite. Laboratory: 0.3 credit (13.5 contact hours).
Components: Laboratory

NSG 1965(2) Course ID: 006309
Medical-Surgical Dysfunctions
Covers the implementation of nursing care for the client experiencing acute and/or chronic dysfunction in Gordon’s Functional Health Patterns. Pre-requisite: (NSG 1964 and NSG 2162) with a grade of C or better. Lecture: 2 credits (30 contact hours).
Components: Lecture

NSG 1966(0.3) Course ID: 006310
Introduction to ADN Skills II
Allows students to demonstrate skills competencies for the care of patients. Pre-requisite: NSG 1965 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2163 with a grade of C or greater if taken as a Pre-requisite. Laboratory: 0.3 credit (13.5 contact hours).
Components: Laboratory

NSG 2161(0.2) Course ID: 006311
Principles of Pharmacology
Emphasizes nursing implications and the use of the nursing process in medication administration. Pre-requisite: Admission to LPN to A.D.N. Bridge Program. (BIO 137 and BIO 139) within ten years, with a grade of C or better] and [(MT 110 or MT 150) with a grade of C or better] and (PSY 100 or PY 110) and PSY 223 and Oral Communications and ENG 101 and (NSG 1961 with a grade of C or better). Pre-requisite or Co-requisite: NSG 1962 with a grade of C or better if taken as a Pre-requisite. Lecture: 0.2 credit (3 contact hours).
Components: Lecture

NSG 2162(0.2) Course ID: 006312
Nurse’s Role in Drug Therapy
Focuses on classifications, indications, and effects of common drugs. Emphasizes nursing implications and the use of the nursing process in medication administration. Pre-requisite: (NSG 2161) with a grade of C or better. Pre-requisite or Co-requisite: (NSG 1964) with a grade of C or better if taken as a Pre-requisite. Lecture: 0.2 credit (3 contact hours).
Components: Lecture

NSG 2163(0.6) Course ID: 006313
Pharmacy Agents 1.0
Focuses on classifications, indications, and effects of common drugs. Emphasizes nursing implications and the use of the nursing process in medication administration. Pre-requisite: NSG 2162 with a grade of C or better. Pre-requisite or Co-requisite: NSG 1966 with a grade of C or better if taken as a Pre-requisite. Lecture: 0.6 credit (9 contact hours).
Components: Lecture
Course ID: 006314
Nursing Pharmacology 2.0
Focuses on classifications, indications, and effects of common drugs. Emphasizes nursing implications and the use of the nursing process in medication administration. Pre-requisite: Admission to LPN to ADN Bridge Program, [BIO 137 and BIO 139] within ten years, with a grade of C or better and [MAT 110 or MAT 150] with a grade of C or better and (PSY 100 or PY 110) and PSY 223 and Oral Communications and ENG 101 and [NSG 196 and NSG 216] with a grade of C or better. Pre-requisite or Co-requisite: BIO 225 within ten years, with a grade of C or better and ENG 102 and [NSG 2361 and NSG 2362 and NSG 2363] with a grade of C or better if taken as a Pre-requisite. Lecture: 0.1 credit (1.5 contact hours).

Components: Lecture

Course ID: 006315
Nursing Pharmacology 2.1
Focuses on classifications, indications, and effects of common drugs. Emphasizes nursing implications and the use of the nursing process in medication administration. Pre-requisite: NSG 2261 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2364 with a grade of C or better if taken as a Pre-requisite. Lecture: 0.9 credit (13.5 contact hours).

Components: Lecture

Course ID: 006316
Childbearing Family
Applies core components of nursing in the care of childbearing families experiencing functional and dysfunctional health patterns. Pre-requisite: (NSG 196 and NSG 216) with a grade of C or better. Pre-requisite or Co-requisite: BIO 225 within ten years, with a grade of C or better and ENG 102. Lecture: 2.5 credit (37.5 contact hours).

Components: Lecture

Course ID: 006317
Maternal-Newborn Clinical
Applies core components of nursing in the care of childbearing families experiencing functional and dysfunctional health patterns. Pre-requisite: NSG 2361 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2261 with a grade of C or better if taken as a Pre-requisite. Clinical: 2 credits (90 contact hours).

Components: Clinical

Course ID: 006318
The Pediatric Client
Applies core components of nursing in the care of childbearing families experiencing functional and dysfunctional health patterns. Pre-requisite: NSG 2362 with a grade of C or better. Pre-requisite or Co-requisite: NSG 2262 with a grade of C or better if taken as Pre-requisite. Lecture: 2 credits (30 contact hours).

Components: Lecture

Course ID: 006319
Role Transition - Level II
Provides overview of competencies required for entry into practice. Pre-requisite: NSG 2963 with a grade of C or better. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture

Course ID: 006755
Pediatric Clinical
Applies core components of nursing in the care of childbearing and child-rearing families experiencing functional and dysfunctional health patterns. Pre-requisite: NSG 2364 with a grade of "C" or greater. Clinical: 2.0 credits (90 contact hours).

Components: Clinical

Course ID: 006320
Medical Surgical Nursing II A
Emphasizes the development of the nurse as a provider of care, manager of care, and member of the nursing profession. Provides for the application of critical thinking skills in the care of diverse clients/families across the lifespan with actual or potential alteration in health due to complex acute and chronic health problems. Emphasizes leadership, management, clinical decision-making, collaboration, knowledge, judgment, skills, and professional values within the legal/ethical framework to facilitate the transition of the student to Registered Nurse practice. Pre-requisite: NSG 236 with a grade of C or greater. Pre-requisite or Co-requisite: Heritage/Humanities or Foreign Language Course. Lecture: 2 credits (30 contact hours).

Components: Lecture

Course ID: 006321
Medical Surgical Nursing II B
Emphasizes the development of the nurse as a provider of care, manager of care, and member of the nursing profession. Provides for the application of critical thinking skills in the care of diverse clients/families across the lifespan with actual or potential alteration in health due to complex acute and chronic health problems. Emphasizes leadership, management, clinical decision-making, collaboration, knowledge, judgment, skills, and professional values within the legal/ethical framework to facilitate the transition of the student to Registered Nurse practice. Pre-requisite: NSG 2461 with a grade of C or better. Lecture: 2 credits (30 contact hours).

Components: Lecture

Course ID: 006322
Medical Surgical Nursing II C
Promotes an integrative practice with an emphasis on leadership, management, clinical decision-making, collaboration, knowledge, judgment, skills, and professional values within the legal/ethical framework to facilitate the transition of the student to Registered Nurse practice. Pre-requisite: NSG 2462 with a grade of C or better. Clinical: 1 credit (15 contact hours).

Components: Clinical

Course ID: 006323
Integrated Clinical Practicum
Includes an integrative practicum with an emphasis on leadership, management, clinical decision-making, collaboration, knowledge, judgment, skills, and professional values within the legal/ethical framework to facilitate the transition of the student to Registered Nurse practice. Pre-requisite: NSG 2463 with a grade of C or better. Clinical: 4 credits (180 contact hours).

Components: Clinical
Course Descriptions

OST 213(3) Course ID: 004517
Business Calculations for The Office Professional
Applies skills required for the performance of business tasks: use of numeric keypad to compute payroll, markup/ markdown, purchases, loans, discounts, stock and bond transactions, and other business applications. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 215(3) Course ID: 003774
Office Procedures
Studies the practices and procedures of current office concepts with emphasis given to the electronic office including: job application procedures, human relations in the office, business ethics, decision-making skills, travel and meeting arrangements, time and stress management, incoming/outgoing mail processes, and telephone procedures. Pre-requisite or Co-requisite: OST 110. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 216(1 - 6) Course ID: 004515
Selected Topics
Expands course offerings to address local office issues as new technology is developed. Varies from semester to semester at the discretion of the instructor: may be repeated with different topics to a maximum of six credit hours. Lecture: 1-6 hours (15-90 contact hours).
Components: Lecture
Attributes: Technical

OST 220(3) Course ID: 003775
Administrative Office Simulations
Applies administrative office procedures simulation to include organizing, communicating, scheduling, and analyzing. Emphasizes productivity, efficiency, accuracy, and problem solving. Uses technology to research information on the Internet and send and receive e-mail. Continues to develop speed and accuracy. Pre-requisite: OST 210, OST 215, and OST 240, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 221(3) Course ID: 005469
Legal Office Simulation
Applies classroom experiences and skills in a simulated legal office environment. Pre-requisite: OST 110. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 225(3) Course ID: 003776
Introduction to Desktop Publishing
Uses desktop publishing software to design and produce high resolution publications such as flyers, brochures, business forms, and newsletters. Introduces basic design techniques, type and graphics layout, and related terminology. Pre-requisite: (OST 105 and OST 110) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 235(3) Course ID: 003777
Business Communications Technology
Presents aspects of communications technology used in the global business environment, including presentations software; a basic understanding of voice recognition software; planning and composition of written, oral, and electronic communications; grammar, punctuation, and spelling; and principles of proofreading, both manual and electronic. Pre-requisite: (ENG 101 or OST 108) and (CIT 105 or OST 105). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

OST 240(3) Course ID: 003778
Software Integration
Expands computer skills through the use of spreadsheet, database management, word processing, and presentation software for the integration of information. Pre-requisite: CIT 105 or OST 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 250(3) Course ID: 004514
Advanced Desktop Publishing
Provides advanced techniques in electronic publishing design, layout, composition and paste-up. Pre-requisite: OST 225 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 255(3) Course ID: 004425
Introduction to Business Graphics
Provides instruction in the process of image-editing including how to create original artwork, manipulate color, enhance artwork, graphics and retouch photographs and clipart used in desktop publishing programs. Pre-requisite: OST 105 or OST 225 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 272(2) Course ID: 004511
Presentation Graphics
Uses industry standard software to create business presentations, business graphics, transparencies, and slides. Applies editing, formatting, page layout and design, and paste-up techniques for clarity and impact. Pre-requisite: OST 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

OST 275(3) Course ID: 003779
Office Management
Management principles and techniques and their application to the modern business office are included. Emphasis is on information systems and the role of managerial personnel. Lecture: 3 credits. Laboratory: 0 credits.
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

OST 295(1 - 3) Course ID: 003780
Instructor Consent Required
Administrative Office Technology Internship
Provides the opportunity to apply acquired occupational skills in a realistic setting, enhancing the transition from school to work. Requires approval of OST advisor. Prerequisite: OST 210, OST 215, and OST 240, or consent of instructor. Laboratory: 1.0 - 3.0 credits (45-135 contact hours).
Components: Laboratory
Attributes: Technical

OST 296(3) Course ID: 004505
Instructor Consent Required
Office Systems Technology Internship II
Enhances transition from school to work by providing non-paid work experience which utilizes the skills required to achieve occupational goal. Pre-requisite: Consent of Program Adviser. Practicum: 3 credits (135 contact hours).
Components: Practicum
Attributes: Technical

OST 1101(1) Course ID: 016303
Word Processing Functions
Provides basics of word processing including the information processing cycle, using spell check, proofreading and keypad accuracy using industry standard software. Pre-requisite: RDG 020 or Consent of Instructor (OST 101 equivalent skills). Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 1102(1) Course ID: 016304
Document Letters Memoranda
Provides experience in word processing for keying letters and memoranda using industry standard software. Pre-requisite: OST 1101 or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 1103(1) Course ID: 016305
Document Tables and Reports
Provides experience in word processing for keying tables and reports from reference materials using industry standard software. Pre-requisite: OST 1102 or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2101(1) Course ID: 016306
Advanced Formatting and Tools
Uses advanced formatting features and Word Processing tools of a current word processing software. Pre-requisite: OST 110. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2102(1) Course ID: 016307
Print and File Management
Uses advanced features of a current word processing software to manage file management, printing, and editing. Pre-requisite: OST 2101 or Consent of Instructor. Lecture 1 credit (15 contact hours).
Components: Lecture

OST 2251(1) Course ID: 016309
Desktop Publishing Software
Uses desktop publishing software to design and produce high resolution publications such as flyers, brochures, business forms, and newsletters. Introduces basic design techniques, type and graphics layout, and related terminology. Pre-requisite: OST 105 and OST 110) or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2252(1) Course ID: 016310
Desktop Publishing Design and Features
Uses desktop publishing software to design and produce high resolution publications such as flyers, brochures, business forms, and newsletters. Introduces basic design techniques, type and graphics layout, and related terminology. Pre-requisite: OST 2251 or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2253(1) Course ID: 016311
Desktop Publishing Applications
Uses desktop publishing software to design and produce high resolution publications such as flyers, brochures, business forms, and newsletters. Introduces basic design techniques, type and graphics layout, and related terminology. Pre-requisite: OST 2251 or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2751(0.5) Course ID: 005806
Office Management Principles
Includes introductory management principles and techniques for the modern business office. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

OST 2752(1) Course ID: 005807
Managing Human Resources in the Office
Includes management principles and techniques and their application to the management of human resources in the modern business office. Pre-requisite: OST 2751. Lecture: 1 credit (15 contact hours).
Components: Lecture

OST 2753(0.5) Course ID: 005808
Managing Office Administrative Services
Management principles and techniques for the modern business office as they apply to the development of an information system and the management of physical resources are included. Pre-requisite: OST 2751. Lecture: 0.5 credit. (7.5 contact hours).
Components: Lecture
Explores assistive technology to facilitate knowledge in justification of payment for equipment, discharge, and remediating, compensating, grading, and/or modifying of human occupation and subsequent methods of analysis, safety, and adaptive skill development as the basics of an individual's occupational performance. Provides explanation and introductory lab practice of the occupational therapy assistant elements. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).

Components: Lecture Attributes: Technical
OTA 226(1) Course ID: 006874 Level IIA Fieldwork Provides the opportunity to observe and participate in various settings appropriate to occupational therapy service but not necessarily within a therapy department or under an occupational therapy professional. Provides opportunities to develop intermediate skills in the occupational therapy process. Provides opportunities for students to advance therapeutic skills and to generalize skills and knowledge from the classroom to the practice setting. Focuses on innervation of muscles, muscle grouping for function, and common problems seen when these systems are affected by disease/injury. Introduces the analysis of movement in specific life tasks. Uses the goniometer for joint measurement, manual muscle testing for strength, and promotes familiarity with the terms and techniques used in assessing motor function. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).

OTA 115(2) Course ID: 006881 Skills and Interventions I Develops the basic foundational principles/applications of occupational therapy, such as the concept of basic needs, therapeutic interventions, techniques, applications, analysis, safety, and adaptive skill development as the basics of an individual's occupational performance. Provides explanation and introductory lab practice of the occupational therapy assistant elements. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).

Components: Lecture Attributes: Technical
OTA 116(2) Course ID: 006882 Media Principles and Procedures I Develops skills in planning, implementing and evaluating occupational therapy for individuals experiencing deficits in occupational performance through the analysis of human occupation and subsequent methods of remediating, compensating, grading, and/or modifying activities and environments for optimal occupational performance. Develops communication skills necessary for documentation and patient interaction. Focuses on appropriate treatment and need for awareness of ethnic, cultural, and socio-economic factors that impact individuals. Provides opportunities for students to develop skills in activity analysis, functional mobility, therapeutic crafts, and modalities. Pre-requisite: Admission to OTA program and permission of instructor. Lab: 2.0 credits (90 contact hours).

Components: Laboratory Attributes: Technical
OTA 125(2) Course ID: 006883 Assistive Technology and Documentation Presents various methods of documentation used in occupational therapy settings for evaluation, intervention, justification of payment for equipment, discharge, and other client records, and requirements of third party payers. Explores available technology to facilitate knowledge in a broad range of devices, services, strategies, and practices conceived and applied to decrease the problems faced by individuals. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).

Components: Lecture Attributes: Technical
OTA 126(1) Course ID: 006870 Level IA Fieldwork Provides the opportunity to observe and participate in various settings appropriate to occupational therapy service but not necessarily within a therapy department or under an occupational therapy professional. Provides opportunities to develop entry-level skills in the occupational therapy process with hands-on interaction as appropriate. Encourages development of professional behaviors and effective communication skills. Pre-requisite: Admission to OTA program and permission of instructor. Clinical: 1.0 credit (60 contact hours).

Components: Clinical Attributes: Technical
OTA 136(4) Course ID: 006871 Physical Dysfunction Includes study of physical conditions commonly seen by Occupational Therapy, including diagnoses, instruction on treatment, and application of treatment. Introduces practice models to guide treatment applications, including procedures for multiple conditions in physical dysfunction. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 4.0 credits (120 contact hours).

Components: Lecture Attributes: Technical
OTA 146(2) Course ID: 006872 Occupational Therapy in Mental Health Presents typical and dysfunctional behavior using the occupational therapy process as it pertains to mental health practice settings. Explores alternative methods and settings for mental health practice. Covers training and practice in interpersonal skills necessary for effective communication with clients, families, significant others, other health care professionals, and the public. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 3.0 credits (75 contact hours).

Components: Lecture Attributes: Technical
OTA 206(2) Course ID: 006873 Community Practice Explores the current and emerging practice areas of occupational therapy in the immediate and future needs. Focuses on occupation-based practice, holistic, wellness, and prevention models applied throughout the lifespan. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contacts hours).

Components: Lecture Attributes: Technical
OTA 216(2) Course ID: 006884 Media Principles and Procedures II Provides students the opportunity to apply skills in evaluating and planning occupational therapy for individuals experiencing deficits in occupational performance in a safe and efficient manner. Develops assessment skills in order to plan appropriate treatments applicable to deficits in occupational performance, including fabrication of orthotics and adaptive equipment and techniques. Develops communication skills necessary for documentation and patient interaction. Provides opportunities for students to develop skills in assessment, adaptations, orthotics and appropriate treatment with awareness of ethnic, cultural, and socio-economic factors that impact individuals. Pre-requisite: Admission to OTA program and permission of instructor. Lab: 2.0 credits (90 contact hours).

Components: Laboratory Attributes: Technical
OTA 225(2) Course ID: 006885 Skills and Interventions II Incorporates analysis, instruction and implementation of occupational therapy treatment techniques. Provides opportunities to apply theoretical concepts in practice situations, involving higher-level activities of daily living, comprehensive analysis, purposeful activity, modalities and neurological re-education. Applies implementation skills necessary for level II fieldwork and to work as entry-level occupational therapy assistant. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).

Components: Lecture Attributes: Technical
OTA 267(5) Course ID: 007410
Level IIA Fieldwork
Provides opportunity to function in various clinical settings under supervision of experienced occupational therapy practitioner. Promotes collaboration with the Occupational Therapist in planning/implementation of treatment programs with clients with a variety of diagnoses and ages. Cultivates skills necessary to function at entry-level of practice through the final of two successive fieldwork rotations in unique healthcare settings/institutions. Pre-requisite: Admission to the Occupational Therapy Assistant Program or permission of instructor. Practicum: 5.0 credits (300 contact hours).
Components: Practicum
Attributes: Technical

OTA 276(5) Course ID: 006879
Level IIB Fieldwork
Provides opportunity to function in various clinical settings under supervision of experienced occupational therapy practitioner. Promotes collaboration with the Occupational Therapist in planning/implementation of treatment programs with clients with a variety of diagnoses and ages. Strengthens complex skills including critical thinking, required for entry-level of practice through the final of two successive fieldwork rotations in unique healthcare settings/institutions. Pre-requisite: Admission to the Occupational Therapy Assistant Program or permission of instructor. Practicum: 5.0 credits (300 contact hours).
Components: Practicum
Attributes: Technical

OTA 277(5) Course ID: 007411
Level IIB Fieldwork
Provides opportunity to function in various clinical settings under supervision of experienced occupational therapy practitioner. Promotes collaboration with the Occupational Therapist in planning/implementation of treatment programs with clients with a variety of diagnoses and ages. Strengthens complex skills, including critical thinking, required for entry-level of practice through the final of two successive fieldwork rotations in unique healthcare settings/institutions. Pre-requisite: Admission to the Occupational Therapy Assistant Program or permission of instructor. Practicum: 5.0 credits (300 contact hours).
Components: Practicum
Attributes: Technical

OTA 286(2) Course ID: 006880
Clinical Seminar
Provides students an opportunity to share information from their clinical site with both the academic instructor and their classmates. Emphasizes application of information learned to other situations. Prepares students for National Board for Certification in Occupational Therapy (NBCOT) certification examination. Pre-requisite: Admission to OTA program and permission of instructor. Co-requisite: OTA 266 OR OTA 276. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

PGA Paralegal Technology

PGA 211(3) Course ID: 007054
Family Law
Examines the areas of law pertaining to domestic relations, emphasizing ethics. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 212(3) Course ID: 007055
Legal Writing
Includes composition of legal communications, briefs, memoranda, and other legal documents, with an emphasis on ethical considerations. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 213(3) Course ID: 007056
Civil Litigation I
Presents the litigation process and emphasizes the structure of the court systems. Includes gathering information and evidence, summarizing and arranging materials, maintaining docket and file control, developing a litigation case, and interviewing clients and witnesses, using ethical standards. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 214(3) Course ID: 007057
Wills and Estates
Introduction to real property law including ownership, transfer of property, liens and encumbrances, and the various types of deeds. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 215(3) Course ID: 007058
Civility in Business Law
Introduces the laws of inheritance and estates, basic concepts of estates and wills, probate procedures, and preparation of documents while emphasizing ethics. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 231(3) Course ID: 007061
Torts
Provides instruction in the area of law that deals with civil wrongs and injuries, including intentional wrongs, negligence, and strict liability. Concentrates on the elements of a tort, type of tort, damages, ethics, and remedies. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGA 233(3) Course ID: 007062
Ethics
Provides an overview of the various sources of ethics law and rules, along with the essentials of how and why a professional must report misconduct. Explores the types of discipline an ethical lapse may trigger, such as sanctions, disqualification, civil and criminal liability, and what it means to be engaged in the “unauthorized practice of law.” Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PGE Elementary Physiology
Course ID: 000846
An introductory survey course in basic human physiology. Pre-requisite: One semester of college biology. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PHA Pharmacy

PHA 104(2) Course ID: 004160
Parenterals
A basic understanding of working with admixtures. Focuses on aseptic technique and basic sterile compounding. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

PHA 110(6) Course ID: 004159
Pharmacy Procedures and Skills
Introduces the field of pharmacy. Includes pharmacy technician responsibilities, legal requirements, safety issues, and basic skills of a pharmacy technician. Lecture: 4.0 credits (60 contact hours). Lab: 2.0 credit (30 contact hours).
Components: Lecture
Attributes: Technical

PHA 125(2) Course ID: 004161
Pharmaceutical Calculations
Covers basic math review, percentage strengths, ratio and proportion, conversion between the apothecary and metric systems, and intravenous calculations. Focuses on equivalencies and calculation of drug dosages. Pre-requisite: MAT 065 or equivalent. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

PHA 136(3) Course ID: 001930
Pharmacology
Introduces the study of drugs and their effect on the human body. Emphasis is placed on the most commonly used drugs, their dosage and common side effects as well as any adverse reactions that might occur. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PHA 200(3) Course ID: 001931
Admixtures for IV Therapy
Provides a basic working knowledge for the pharmacy technician involved in the preparation of IV admixtures. Pre-requisite: (PHA 110 and PHA 136 and PHA 125) with a grade of C or greater. Co-requisite: PHA 205 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
PHB 205(1) Course ID: 001932
Admixtures Preparations
Provides the opportunity to become proficient in the techniques of IV admixing and in the use of related equipment associated with sterile product preparation. Pre-requisite: PHA 110 and 136 with a grade of C or greater. Co-requisite: PHA 200 or Consent of Instructor. Lecture: 1.0 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

PHA 210(6) Course ID: 001934
Components: Lecture
Drug Classifications
Provides a study of the principles and classifications, drug nomenclature, and dosage forms as related to conditions of the body. Pre-requisite: (PHA 110 and 136 with a grade of C or greater). Co-requisite: PHA 205 or Consent of Instructor. Lecture: 6.0 credits (90 contact hours).

Components: Lecture
Attributes: Technical

PHA 250(1 - 8) Instructor Consent Required
Components: Lecture
Pharmacy Experience
Provides work experience in the pharmacy setting to enhance skills required to reach occupational goals for the pharmacy technician. Pre-requisite: Consent of Instructor. Clinical: 1.0 - 8.0 credits (60-480 contact hours).

Components: Lecture
Attributes: Technical

PHB 153(4) Course ID: 004479
Advanced Topics in Phlebotomy
Prepares the student as an integral member of the health-care team. One who collects blood from patients/donors in hospitals, blood banks or clinics for analysis or other medical purposes. Practices standard precautions, record keeping, vital signs and therapeutic communication skills. Pre-requisite: PHB 151 Phlebotomy for the Healthcare Worker. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

PHB 155(2 - 3) Course ID: 001939
Phlebotomy Clinical
This course is designed to build on the knowledge acquired in phlebotomy lecture and lab. In this course the student will use external institutions for clinical experience to become more proficient in the performance of routine venipuncture and dermal collections. The student will gain the experience needed to handle routine venipuncture complications and the skills necessary to adequately perform the duties of a phlebotomist. Pre-requisite: PHB 151 Phlebotomy for the Healthcare Professional or PHB 100 Phlebotomy. Lab: 2.0 - 3.0 credits (120 - 180 contact hours).

Components: Laboratory
Attributes: Technical

PHB 100(6) Course ID: 001938
Phlebotomy
Prepares the student as an integral member of the health-care team and collect blood from patients/donors in hospitals, blood banks or clinics for analysis or other medical purposes. Includes standard precautions, record keeping, and therapeutic communication skills. Lecture: 6 credits (90 contact hours).

Components: Lecture
Attributes: Technical

PHB 120(6) Course ID: 003809
Fundamentals of Clinical Laboratory Phlebotomy
Fundamental techniques of areas of the clinical laboratory appropriate to the phlebotomist are introduced. Included is a study of medical ethics, medical terminology, anatomy and physiology of the circulatory system, professional organizations, communication, record keeping, specimen collection, chain of custody, laboratory safety, and quality control. Lecture: 3 hours; Laboratory: 9 hours. Pre-requisite: CPR Certification, Malpractice insurance, Hepatitis, Varicella, PPD, Rubella, and Rubella blood work results.

Components: Laboratory, Lecture
Attributes: Technical

PHB 151(1) Course ID: 004072
Phlebotomy for the Health Care Worker
Instructor Consent Required
Course covers fundamental techniques in proper venipuncture and capillary collection. Included is a study of medical ethics, laboratory terminology, anatomy and physiology of the circulatory system, communication and record keeping, specimen processing, laboratory safety, isolation procedures and special collection. Pre-requisite: Permission of the instructor. Lecture/Lab: 1.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

PHB 152(1) Course ID: 004175
Phlebotomy: Clinical Experience
Introduces the student to clinical practice in the phlebotomy department of a laboratory. The student will begin to develop performance skills in routine venipuncture and capillary collection procedures emphasizing performance skills in routine venipuncture and capillary collection procedures. Pre-requisite or Co-requisite: PHB 151, PHB 170 or MAI 120. Laboratory: 1.0 credit (30 contact hours).

Components: Laboratory
Attributes: Technical

PHI 100(3) Course ID: 000894
Introduction to Philosophy: Knowledge and Reality
Introduces students to philosophical studies with emphasis on issues of knowing, reality, and meaning related to human existence. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 110(3) Course ID: 002202
Medical Ethics
Introduces examination and application of major ethical theories to specific moral questions related to health care. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 120(3) Course ID: 000356
Introductory Logic
Covers argumentation, syllogistic and sentential logic. Focuses on the use of formal methods in the construction and criticism of arguments, the aim being to inculcate standards of good reasoning, e.g., clarity, consistency, and validity. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 130(3) Course ID: 000354
Ethics
Introduces students to a critical examination of philosophical principles related to moral action and political values. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 140(3) Course ID: 005139
The Ethics of War and Peace
Ethical reasoning and application of ethical theories to moral issues connected to war and peace. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 150(3) Course ID: 000359
Business Ethics
Presents ethical theories and techniques of moral reasoning used to analyze moral issues in business. Applies ethics and reasoning to current issues of management, employees, government, public safety, and the environment. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 160(3) Course ID: 015595
Philosophy Through Pop Culture
Surveys major philosophical themes, such as value, morality, evil, friendship, beauty, God, reality, and the meaning of life, and applies these themes to an examination of how they are represented in several sources of popular culture, including literature, film, art, music, media, and stage. Pre-requisite: ENG 101. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 270(3) Course ID: 000497
History of Philosophy II: From the Renaissance to the Present Era
Provides an introductory study of the development of Western philosophy from early modern through contemporary times, including the development of fields such as metaphysics, analytic and continental philosophy, and ethics. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities

PHI 299(3) Course ID: 006969
Special Topics in Philosophy: Topic
Examines special topics in philosophy. Includes, but not limited to, individual philosophers, movements, writings, traditions, and selected eras. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

PHS 175(6) Course ID: 001941
Applied Physics
This course is a basic study of the principles of physics and mechanics, including motion, force, vectors, work, energy, machines, properties of matter, behavior of fluids, temperature and heat, properties of gases, wave motion, electricity, light, and nuclear physics. Problem solving techniques are stressed. Co-requisite: MT 125. Lecture: 6 credits (150 contact hours).

Components: Lecture
Attributes: Other
PHX Physics

PHX 150(3) Course ID: 001944
Introductory Physics
A non-calculus approach to the concepts and applications of the physical principles of force, work, rate, resistance, energy, power, force transformers and gas laws is presented in this course. Students are shown by examples, classroom demonstration, and laboratory experiments how these concepts are applied to the translational and rotational mechanical, fluidal, electrical and thermal energy systems. Problem solving techniques and scientific method are stressed throughout this course. Pre-requisite: MT 115 or MT 125. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PHY Physics

PHY 151(3) Course ID: 000840
Introductory Physics I
Focuses on the conceptual principles of mechanics of solids, liquids, gases, heat, and sound using some algebra. Credit is not given to students who already have credit for PHY 201 or PHY 231. Companion lecture to PHY 161 laboratory. Pre-requisite: KCTCS placement in College Algebra or completion of Intermediate Algebra. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
PHY 152(3) Course ID: 000402
Introductory Physics II
Focuses on the conceptual principles of electricity, magnetism, optics, atomic, and nuclear physics using some algebra. Credit is not given to students who already have credit for PHY 203 or PHY 232. Companion lecture to PHY 162 laboratory. Pre-requisite: KCTCS placement in College Algebra or completion of Intermediate Algebra. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science
PHY 160(3) Course ID: 000436
Physics and Astronomy for Elementary Teachers
Addresses basic concepts of astronomy and physics appropriate for elementary teachers and is taught with an emphasis on inquiry-based, laboratory activities. Topics include the basics of the motion of objects, astronomy by sight, electrical circuits, magnetism and the behavior of light. Companion course to GLY 160. Pre-requisite: GLY 160. Lecture: 1 credit hour (15 contact hours). Lab: 2 credit hours (75 contact hours).
Components: Laboratory, Lecture
Attributes: SN - Science

PHY 161(1) Course ID: 000471
Introductory Physics I Laboratory
Investigates concepts introduced in PHY 151 through experiments in classical mechanics and thermal physics. Pre-requisite or concurrent: PHY 151. Lab: 1 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 162(1) Course ID: 000475
Introductory Physics II Laboratory
Investigates concepts introduced in PHY 152 through experiments in electricity, magnetism, light, atoms, and nuclei. Pre-requisite or concurrent: PHY 152. Laboratory: 1 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 171(4) Course ID: 000156
Applied Physics
Surveys mechanics, heat, sound, electricity, magnetism, light, and modern physics as applied to practical systems. Pre-requisite: (MAT 085 or (MAT 116 or greater) or Equivalent math placement score) or consent of instructor. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credits (30 contact hours).
Components: Laboratory, Lecture
Attributes: SL - Science Laboratory, SN - Science, Course Also Offered in Modules

PHY 171A(1)
Applied Physics: Mechanics
Surveys selected topics in motion, force, energy, and momentum. Pre-requisite: (MAT 085 or (MAT 116 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 1.0 credit (15.93 contact hours).
Components: Lecture

PHY 171C(1)
Applied Physics: Electricity, Magnetism, and Sound
Surveys selected topics in waves, sound, electricity, and magnetism. Pre-requisite: (MAT 085 or (MAT 116 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 1.0 credit (18.0 contact hours).
Components: Lecture

PHY 171D(1)
Applied Physics: Optics and Modern Physics
Surveys selected topics in light, optics, and modern physics. Pre-requisite: (MAT 085 or (MAT 116 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 1.0 credit (18.0 contact hours).
Components: Lecture

PHY 172(2)
Physics for Health Sciences
Introduces the basic concepts of motion, forces, work, energy and power through experimentation, as applied in electricity and magnetism, optics, atomics, and nuclear physics. Pre-requisite: KCTCS placement in College Algebra or completion of Intermediate Algebra. Lab: 2 credit hours (60 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 201(4)
College Physics I
Focuses on the mechanics of matter as governed by Newton’s Laws; by the conservation laws of energy, momentum, and angular momentum; and thermal processes using algebra and basic trigonometry. Companion lecture to PHY 202 laboratory. Credit is not given to students who have already completed PHY 231. Pre-requisite: (MT 150 or higher) or MA109 or an ACT math score of 25 or higher. Lecture: 3 credit hours (45 contact hours). Discussion: 1 credit hour (15 contact hours).
Components: Discussion, Lecture
Attributes: SN - Science

PHY 202(1)
College Physics I Laboratory
Enhances concepts introduced in PHY 201 through experiments in classical mechanics and thermal physics. Pre-requisite or Co-requisite: PHY201 or equivalent. Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 203(4)
College Physics II
Focuses on electromagnetic phenomena, circuits, optics and an introduction to modern physics using algebra and basic trigonometry. Companion lecture to PHY 204 laboratory. Credit is not given to students who have already completed PHY 232. Pre-requisite: PHY 201 or equivalent. Lecture: 3 credits (45 contact hours). Discussion: 1 credit hour (15 contact hours).
Components: Discussion, Lecture
Attributes: SN - Science

PHY 204(1)
College Physics II Laboratory
Enhances concepts introduced in PHY 203 through experiments in electricity, magnetism, and optics. Pre-requisite or Co-requisite: PHY203 or equivalent. Lab: 1.0 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 231(4)
General University Physics I
Focuses on the mechanics of matter as governed by Newton’s Laws and by the conservation laws of energy, linear momentum, and angular momentum using calculus and trigonometry. Companion lecture to PHY 241 laboratory. Pre-requisite or Co-requisite: MT185 or MA114 or equivalent. Lecture: 3 credit hours (45 contact hours). Discussion: 1 credit hour (15 contact hours).
Components: Discussion, Lecture
Attributes: SN - Science

PHY 232(4)
General University Physics II
Focuses on electromagnetic phenomena, circuits, and optics using vector calculus. Companion lecture to PHY 242 laboratory. Pre-requisite: PHY 231. Pre-requisite or Co-requisite: MT275 or MA213 or equivalent. Lecture: 3 credit hours (45 contact hours). Discussion: 1 credit hour (15 contact hours).
Components: Discussion, Lecture
Attributes: SN - Science

PHY 241(1)
General University Physics I Laboratory
Enhances concepts introduced in PHY 231 through a complement of experiments relating to motion, Newton’s laws, rotation, and energy conservation principles. Pre-requisite or Co-requisite: PHY 231. Laboratory: 1 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 242(1)
General University Physics II Laboratory
Enhances concepts introduced in PHY 232 through a complement of experiments probing electromagnetic phenomena, circuits, and optics. Pre-requisite or Co-requisite: PHY 232. Laboratory: 1 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 271(0.5)
Motion & Newton’s Laws
Surveys selected topics in velocity, acceleration, and force. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/ Lab: 0.5 credit (9.37 contact hours).
Components: Lecture

PHY 272(0.5)
Work, Energy, Power, and Momentum
Surveys selected topics in work, energy, power, and momentum. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 0.5 credit (9.38 contact hours).
Components: Lecture

PHY 273(0.5)
Fluid Dynamics
Surveys selected topics in fluid dynamics. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 0.5 credit (9.37 contact hours).
Components: Lecture

PHY 274(0.5)
Thermodynamics
Surveys selected topics in thermodynamics. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 0.5 credit (9.38 contact hours).
Components: Lecture

PHY 275(0.5)
Electricity and Magnetism
Surveys selected topics in electricity and magnetism. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/ Lab: 0.5 credit (9.37 contact hours).
Components: Lecture

PHY 276(0.5)
Wave Motion, Sound, and Light
Includes selected topics in wave mechanics, sound, and optics. Pre-requisite: (MA 108 or (MT 115 or greater) or Equivalent math placement score) or consent of instructor. Lecture/Lab: 0.5 credit (9.38 contact hours).
Components: Lecture
PHY 1717(0.5) Modern and Nuclear Physics
Surveys selected topics in atomic, nuclear, and modern physics. Pre-requisite: MA 108 or (MT 115 or greater) or Equivalent math placement score or consent of instructor. Lecture/Lab: 0.5 credit (9.37 contact hours).
Components: Lecture

PHY 1718(0.5) Integrated Physics Concepts
Surveys selected topics in physics. Pre-requisite: PHY 1717 and PHY 1712 and PHY 1713 and PHY 1714 and PHY 1715 and PHY 1716, and PHY 1717. Consent of instructor. Lecture: 0.5 credit (9.36 contact hours).
Components: Lecture

PHYS 105(3) Concepts of the Physical World
A one-semester introduction to the concepts of physics for students planning to teach in elementary and middle schools. Topics include structure and properties of matter, mechanics, electricity, magnetism, heat, light, and sound. Laboratory experiments are an integral part of this course. Pre-requisite: MT 120 or greater. Lecture: 3 credits (45 contact hours).
Components: Lecture

PL Plastics

PL 101(4) Plastic Processes and Materials
Provides the student with an introduction to plastics processes and terminology. Topics covered include polymer chemistry, polymer processing, thermoplastics, properties of plastics, plastics manufacturing processes, manufacturing equipment, tooling and molds, and health, safety and business considerations in the commercial production of plastic products. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

PL 151(4) Polymer Science & Testing
Provides an in-depth study of various plastics and important processing methods. Examines molecular structures and their effect on mechanical, chemical and physical properties. Includes commodity and engineering thermoplastics, thermosets and elastomers, extrusion, injection, blow molding and thermoforming. Pre-requisite: PL 101. Lecture: 4 credits (60 contact hours).
Components: Lecture

PLB 100(3) Basic Theory of Plumbing
Provides a history of the plumbing trade and basic principles of the trade. Lecture: 2 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PLB 105(3) Plumbing Principles
Provides the proper installation procedures for piping, water heaters and sewage systems. The plumbing code appropriate for each installation will also be studied. Laboratory: 3 credits (135 contact hours).
Components: Laboratory

PLB 150(3) Plumbing, Introduction to the Trade
Introduces the origin and basic principles of the plumbing industry. Includes the orientation of methods associated with the plumbing industry. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PLB 151(3) Basic Plumbing Skills
This course introduces the student to basic pipe joining techniques. Co-requisite: PLB 150. Laboratory: 3 credits (135 contact hours).
Components: Laboratory
Attributes: Technical

PLB 163(2) Plumbing Fixtures
Develops the skills necessary to rough-in and install a kitchen group and laundry fixtures for residential and commercial applications. Pre-requisite: PLB 150. Co-requisite: PLB 250. Laboratory: 2 credits (90 contact hours).
Components: Laboratory

PLB 250(3) Plumbing Appliances & Fixtures
Presents the installation practices of residential water heaters (electrical and gas), and the installation of commercial water heating systems with pumps, controls and valve systems. Study will also include site layout and testing. Pre-requisite: PLB 150. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

PLB 251(2) Pumps and Water Heaters
Develops skills in the installation of plumbing appliances (water heater), and apanttenences. Pre-requisite: PLB 150. Co-requisite: PLB 250. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

PLB 260(2) Service
This course presents the study of methods, procedures, and skills involved in planning and estimating residential and commercial plumbing fixtures and systems. Pre-requisite: PLB 150 or equivalent. Lecture: 2 credits (30 contact hours).
Components: Lecture

PLB 261(2) Advanced Plumbing Lab
This course will teach the student to plan and apply local code requirements for residential plumbing systems, and estimate supplies and cost of same. Pre-requisite: PLB 150 or equivalent. Laboratory: 2 credits (90 contact hours).
Components: Laboratory

PLB 298(4) Practicum/Repairs & Maintenance
Designed to provide the student with experience in the plumbing industry. This will be a non-paid evaluation of a student's developed skills. Pre-requisite: Consent of instructor. Practicum: 4 credits (180 contact hours).
Components: Practicum
Attributes: Technical

PLW 100(4) Introduction to Engineering Design
Provides an introduction to the engineering profession, engineering disciplines, and technology. Emphasizes a "problem-solving" approach, engineering design process, and team projects. Lecture/Lab: 4 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 125(4) Principles of Engineering
Students will be introduced to various types of engineering, engineering communications, various design processes, types of engineering systems, statics, materials, and strength of materials, engineering for reliability, and kinematics. Pre-requisite: PLW 100. Lecture/Lab: 4 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 130(4) Principles of Biomedical Sciences
Engages students in the fields of human medicine, research processes and an introduction to bioinformatics. Exposes students to investigations of human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. Includes analysis of key biological concepts including: homeostasis, metabolism, inheritance of traits, feedback systems, the relationship of structure to function and defense against disease. Outlines all the courses in the Biomedical Sciences program and to lay the scientific foundation necessary for student success in the subsequent courses. Pre-requisite: Reading, English, and Mathematics assessment exam scores above the KCCTS transitional placement level or successful completion of the prescribed transitional course(s). Lecture/Lab: 4.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 135(4) Principles of Human Body Systems
Focuses on exploring a variety of interventions involved in the prevention, diagnosis and treatment of disease. Uses a How-To manual to introduce prevention of and fighting of infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Examines lifestyle choices and preventive measures that influence health and highlights the important roles scientific thinking and design and engineering develop in the development of interventions of the future are examined. Pre-requisite: PLW 135. Lecture: 4.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 140(4) Medical Interventions
Focuses on exploring a variety of interventions involved in the prevention, diagnosis and treatment of disease. Uses a How-To manual to introduce prevention of and fighting of infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Examines lifestyle choices and preventive measures that influence health and highlights the important roles scientific thinking and design and engineering develop in the development of interventions of the future are examined. Pre-requisite: PLW 135. Lecture: 4.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 150(4) Digital Electronics
This course uses computer simulations and hands on laboratory to teach students about the logic of electronics as they design, test, and construct electronic circuits and devices. Lecture: 1 credit (15 contact hours). Lab: 3 credits (45 contact hours).
Components: Laboratory
Attributes: Technical
PLW 200(4) Course ID: 006698
Aerospace Engineering
The major focus of the Aerospace Engineering TM (AE) course is to expose students to the world of aeronautics, flight, and engineering. They will employ engineering and scientific concepts in the solution of aerospace problems. Pre-requisite: PLW-100, PLW-125, and PLW-150. Lecture/Lab: 4 credits (150 contact hours).
Components: Lecture

PLW 225(4) Course ID: 006699
Civil Engineering and Architecture
The major focus of the Civil Engineering and Architecture TM (CEA) course is a long-term project that involves the development of a local property site. As students learn about various aspects of civil engineering and architecture, they apply what they learn to the design and development of this property. Pre-requisite: PLW-100, PLW-125, and PLW-150. Lecture/Lab: 4 credits (150 contact hours).
Components: Lecture
Attributes: Technical

PLW 250(4) Course ID: 006700
Computer Integrated Manufacturing
The purpose of the Computer Integrated Manufacturing course is to expose students to the fundamentals of computerized manufacturing technology. The course includes: Computer Modeling, CNC Equipment; CAM Software; Robotics; and Flexible Manufacturing Systems. Pre-requisite: PLW-100, PLW-125, and PLW-150. Lecture/Lab: 4 credits (150 contact hours).
Components: Lecture

PMX 100(3) Course ID: 001962
Precision Measurement
This class introduces the student to the basic fundamentals of precision measurement and its application in the industrial setting. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

POL 101(3) Course ID: 000912
American Government
Examines national and political processes in the United States, with emphasis on the Constitution, the President, Congress, and the judicial system. Focuses on the nature of American democracy, political challenges, and opportunities. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

POL 210(3) Course ID: 000630
Introduction to European Politics: East and West
Compared the political institutions, policy-making processes, citizen participation and political outcomes in Eastern and Western European states. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

POL 212(3) Course ID: 002254
Culture and Politics in Developing Nations
Examines and compares the politics of selected states in Africa, Asia, and Latin America analyzing such issues as culture, ethnicity, language, social class, and ideology. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

POL 235(3) Course ID: 000438
World Politics
Examines the most significant problems of world politics, including the fundamental factors governing international relations, the techniques and instruments of power politics, and the conflicting interests in organizing world peace. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

POL 255(3) Course ID: 000066
State Government
Examines the institutions, political processes, and policies of state governments, and the relationships of state governments with other levels of government in the United States. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

POL 271(3) Course ID: 000724
Introduction to Political Behavior
The study of behavior in a political context; the analysis of basic behavioral concepts used in political science such as political roles, group behavior, belief systems, personality, power, and decision-making. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Other

POL 280(3) Course ID: 005213
Issues in Public Policy
Examines selected major public issues, focusing on their nature, political ramifications, and alternate methods of managing conflict. Includes discussion of varying policies such as poverty, health care, energy, education, race and ethnic relations, and the environment. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

POL 291(1 - 3) Course ID: 004276
Special Topics in Political Science
Addresses various topics, issues, and trends in political science. Includes topics that may vary from semester to semester at the discretion of the instructors. Lecture: 1.0 - 3.0 credits (15 contact hours).
Components: Lecture

PSC 112(3) Course ID: 006850
Ceramics I
Introduces traditional clay forming skills, their development and use in the 21st century. Investigates hand building, wheel throwing, and decorative techniques. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 115(3) Course ID: 006851
Ceramics II
Investigates and improves ceramic techniques in wheel throwing, basic glaze applications, surface decoration, and traditional firings. Develops and advances individual techniques and skills. Pre-requisite: PSC 112. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 117(3) Course ID: 006852
Glaze Calculations
Examine glaze calculation, technology and the raw ceramic materials used to create glazes for ceramics art and production. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 210(3) Course ID: 006853
Ceramics III
Investigates Ceramics construction techniques, glazing, surface decoration and firing. Continues to develop practice and execution of individual's aesthetic and functional creativeties. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 211(3) Course ID: 006854
Kiln Operation and Design
Introduces various types of kilns and firing operations. Investigates Raku, pit and downdraft gas kiln designs. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 212(3) Course ID: 006855
Ceramic Production Techniques
Examines properties and characteristics of slip casting and mold-making techniques. Emphasizes the science of both traditional and non-traditional ceramics materials and its practical application for the professional ceramics production. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 215(3) Course ID: 006856
Ceramics IV
Examines production studio pottery and advanced contemporary ceramics through refinement of construction techniques, expanding glaze pallete, and advanced surface decorations and glaze firing. Pre-requisite: PSC 210. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 220(3) Course ID: 006857
Ceramics Product Development
Explores product development and the business concerns of professional ceramics production. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSC 230(3) Course ID: 006858
Ceramics V
Focuses on creating a body of work for exhibition and developing a professional portfolio. Pre-requisite: PSC 215. Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

PSG 100(2) Course ID: 005275
Introduction to Polysomnography
Introduces the topics of behavioral and performance objectives, national patient safety goals, medical ethics, infection control, environmental and clinical emergencies, HIPPA, basic medical terminology and skills required for employment. Pre-requisite: Minimum grade of a C in [BIO 137 and (MAT 110 or MAT 114 or MAT 150)] or consent of the instructor. Lecture: 2.0 credit (30 contact hours).
Components: Lecture
Attributes: Technical

PSG 110(3) Course ID: 005276
Polysomnography Level I
Provides the knowledge necessary for entry-level personnel in the basics of polysomnographic technology. Includes instrumentation setup and calibration, recording and monitoring techniques, therapeutic interventions and patient-technologist interactions related to polysomnography. Lecture: 3 credits (45 contact hours). Pre-requisite: [BIO 137 and (MT 110 or MT 145 or MT 150)] with a grade of C or better) or consent of the instructor.
Components: Lecture
Attributes: Technical

PSG 111(1) Course ID: 005277
Polysomnography Lab I
Provides practical experience on the equipment used during a standard sleep study. The set-up, calibration, attachment, artifact recognition and troubleshooting of electroencephalographic (EEG), electro-corticographic (EOG), electromyographic (EMG), pulse oximetry (SpO2), body position, airflow, chest and abdominal movement detection equipment as well as the application of positive airway pressure and oxygen used in therapeutic interventions will be included. Laboratory exercises to develop effective patient-technologist interactions will also be included. Laboratory: 1 credit (60 contact hours). Pre-requisite: [BIO 137 and (MT 110 or MT 145 or MT 150) with a grade of C or better) or consent of the instructor.
Components: Laboratory
Attributes: Technical

Course Descriptions
PSG 115(3) Course ID: 005278
Polysomnography Practice I
Provides clinical experience and training in the basic skills required of an entry-level polysomnographic technologist. Includes instrumentation set-up and calibration, recording and monitoring techniques, documentation, professional issues and patient-technologist interactions related to polysomnographic technology. Clinical: 3 credits (180 contact hours). Pre-requisite: (IBIO 137 and (MT 110 or MT 145 or MT 150) with a grade of C or better) or consent of the instructor. Also Healthcare Provider BLS certification.
Components: Clinical
Attributes: Technical
PSG 130(3) Course ID: 005279
Polysomnography Level II
Addresses all of the aspects of sleep scoring and event recognition, instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues, therapeutic interventions, and patient-technologist interactions related to polysomnography. Pre-requisite: PSG 110 with a grade of C or better, or consent of the instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
PSG 131(1) Course ID: 005280
Polysomnography Lab II
Provides laboratory training in advanced aspects of polysomnographic technology. Students will become familiar with the skills and apply the knowledge needed to evaluate sleep recordings. It covers sleep stage scoring, event recognition, report generation, and higher level therapeutic interventions. Includes procedure and scoring for specialized testing such as the multiple sleep latency test (MSLT) and maintenance of wakefulness test (MWT). Laboratory: 1 credit (60 contact hours). Pre-requisite: PSG 111 with a grade of C or better, or consent of the instructor.
Components: Laboratory
Attributes: Technical
PSG 133(3) Course ID: 007064
Pathologies of Sleep and Related Disorders
Develops knowledge of pathophysiology of sleep disorders as well as the effect of co-morbidities on sleep. Presents content on pathologies and related applications for various age groups to include pharmacology, medical emergency recognition and treatment. Pre-requisite: PSG 110 with a grade of C or better or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
PSG 135(3) Course ID: 005281
Polysomnography Practice II
Provides students with experience in advanced aspects of polysomnographic technology. It covers all the aspects of sleep scoring and event recognition, instrumentation set-up and calibration, recording and monitoring techniques, documentation, professional issues, therapeutic interventions, and patient-technologist interactions related to polysomnographic technology. Clinical: 3 credits (180 contact hours). Pre-requisite: PSG 115 with a grade of C or better, or consent of the instructor. Also Healthcare Provider BLS certification.
Components: Clinical
Attributes: Technical
PSJ 110(3) Course ID: 005067
Jewelry/Metals I
Introduces the tools, techniques, and materials of the professional jeweler/metalsmith with an emphasis on the design and production of jewelry projects in precious metals, the basic development of jewelry bench skills, and the discussion of business practices. Laboratory: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 115(3) Course ID: 005068
Jewelry/Metals II
Continues PSJ 110 and a further introduction to the tools, techniques, and materials of the professional jeweler/metalsmith. Emphasizes working more 3-dimensionally and with greater complexity through the design and completion of jewelry projects. Pre-requisite: PSJ 110 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 116(2) Course ID: 005069
Ancient Techniques
Introduces the history, methods and techniques of metal smithing from antiquity through the 14th century. Emphasizes metal smithing traditions and classic techniques through the design and completion of jewelry projects and assignments incorporating ancient methods. Pre-requisite: PSJ 110 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 210(3) Course ID: 005071
Jewelry/Metals III
Introduces the history, methods and techniques of metalsmithing from antiquity through the 14th century. Emphasizes metal smithing traditions and classic techniques through the design and completion of jewelry projects and assignments incorporating ancient methods. Pre-requisite: PSJ 115 and PSJ 117 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 211(2) Course ID: 005072
Hollowware and Metal Forming
Covers design and technical processes creating functional hollowware. Emphasizes dimensional forming of sheet metal through raising, sinking, planishing and anticlastic forming. Pre-requisite: PSJ 115 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 212(2) Course ID: 005073
Metallurgy of Precious Metals
Covers properties and characteristics of precious metals and their alloys. Emphasizes the science of metallurgy and its practical application for the professional jeweler/metalsmith. Pre-requisite: PSJ 210 and PSJ 212) or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 215(3) Course ID: 005074
Jewelry/Metals IV
Includes an in-depth investigation on production methods and techniques of the professional jeweler/metalsmith. Pre-requisite: (PSJ 210 and PSJ 212) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 220(2) Course ID: 005076
Jewelry/Metals Product Development
Explores product development and the business concerns of the professional jeweler/metalsmith. Pre-requisite: (PSJ 210 and PSJ 212) or Consent of Instructor. Pre-requisite or Co-requisite: PSJ 215. Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical
PSJ 230(6) Course ID: 005077
Jewelry/Metals V
Provides a capstone course that focuses on creating a body of work for exhibition and developing a professional portfolio. Pre-requisite: (PSJ 210 and PSJ 212 and PSJ 220) or Consent of Instructor. Lab: 6.0 credits (180 contact hours).
Components: Laboratory
Attributes: Technical
PSM 101(3) Course ID: 005552
Bluegrass & Traditional Music History I: Geographic Influence & Instrumental Origin
Provides an overview of traditional instruments and their geographic and cultural origins as they relate to the foundation of bluegrass and traditional music genres. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
PSM 105(1) Course ID: 005553
Recording I
Introduces recording and sound reproduction history, terminology, equipment, and practical session experience. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 107(1) Course ID: 007257
Songwriting I
Introduces the process of creating original melodies and lyrics under the direction of a professional songwriter. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 108(1) Course ID: 005529
Songwriting II
Introduces the process of creating original melodies and lyrics under the direction of a professional songwriter. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 110(1) Course ID: 005554
Individual Stringed Instrument Instruction
Provides an individual stringed instrument study course under the guidance of an experienced professional instructor. Designed to teach performance techniques in a flexible structure. May be repeated with different subject for a maximum of 4 credits. Pre-requisite: Audition. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 111(1) Course ID: 005556
Guitar I
Teaches basic fundamentals of bluegrass and traditional chords, rhythm and simple flat-picking lead along with standard tuning and set-up tips. Pre-requisite: MUS 174 or Consent of Instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 112(1) Course ID: 007258
Individual Stringed Instrument Instruction
Provides an individual stringed instrument study course under the guidance of an experienced professional instructor. Designed to teach performance techniques in a flexible structure. May be repeated with different subject for a maximum of 4 credits. Pre-requisite: Audition. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 113(1) Course ID: 007259
Guitar II
Teaches basic fundamentals of bluegrass and traditional chords, rhythm and simple flat-picking lead along with standard tuning and set-up tips. Pre-requisite: MUS 174 or Consent of Instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical
PSM 114(2) Course ID: 007260
Bluegrass & Traditional Band/Ensemble
Pairs two or more instrumentalists in a group/ensemble setting, in order to explore the components and structure of a band under the guidance of a professional band leader. May be repeated with different subtitles for a maximum of 8 credits. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 115(2) Course ID: 005555
Bluegrass & Traditional Band/Ensemble
Pairs two or more instrumentalists in a group/ensemble setting, in order to explore the components and structure of a band under the guidance of a professional band leader. May be repeated with different subtitles for a maximum of 8 credits. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 116(2) Course ID: 005528
Bluegrass & Traditional Harmony/Part Singing
Introduces basic bluegrass and traditional harmony/part singing and theory using ear training, number notation and basic chords. Pre-requisite: MUS 174 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 117(1) Course ID: 007261
Songwriting II
Provides guidance through the process of creating and refining original melodies and lyrics under the direction of a professional songwriter, emphasizing different techniques while overcoming barriers. Pre-requisite: PSM 107 or Consent of Instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
PSM 118(2) Course ID: 007262
Bluegrass & Traditional Harmony/Part Singing
Introduces basic bluegrass and traditional harmony/part singing and theory using ear training, number notation and basic chords. Pre-requisite: MUS 174 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 121(3) Course ID: 005557
Bluegrass & Traditional Music History II: Evolution of Old Time, Folk and Early Bluegrass
Provides an in-depth study of old time, folk and early bluegrass music genres and their components, exploring connections between radio, labor conflict, war and early professional musicians. Pre-requisite: PSM 101 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
PSM 125(1) Course ID: 005558
Recording II
Provides practical studio and set-up training for recording sessions utilizing software and computers. Pre-requisite: PSM 105 or Consent of Instructor. Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory
PSM 128(1) Course ID: 005559
Songwriting I
Provides guidance through the process of creating and refining original melodies and lyrics under the direction of a professional songwriter, emphasizing different techniques while overcoming barriers. Pre-requisite: PSM 108 or Consent of Instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory
PSM 211(2) Course ID: 007263
Songwriting III
Provides guidance through the process of creating and refining original melodies, lyrics and music under the direction of a professional songwriter, emphasizing the completed demo project. Pre-requisite: PSM 217 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 212(2) Course ID: 005554
Songwriting IV
Provides guidance through the process of creating an effective demo and marketing original songs under the direction of a professional songwriter, emphasizing the completed demo project. Pre-requisite: PSM 217 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 213(3) Course ID: 005560
Bluegrass & Traditional Music History III: Early Stringband & Country Music
Provides an in-depth study of early stringband, country music and promotion pioneers, focusing on the role of early radio and broadsides. Pre-requisite: PSM 121 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
PSM 235(2) Course ID: 005561
Recording III
Provides an in-depth study of computer and Pro Tools software, recording techniques and applications. Pre-requisite: PSM 125 or Consent of Instructor. Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory Attributes: Technical
PSM 238(2) Course ID: 005562
Songwriting III
Provides guidance through the process of creating and refining original melodies, lyrics and music under the direction of a professional songwriter, emphasizing writing for specific media and multi-writer collaboration. Pre-requisite: PSM 128 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory Attributes: Technical
PSM 241(3) Course ID: 005563
Bluegrass & Traditional Music History IV: The Masters & Their Music
Provides a comprehensive study of the music and careers of the iconic figures in bluegrass & traditional music from 1936 to present. Requires listening to recordings, reading the primary text, and reading suggested articles from industry periodicals. Pre-requisite: PSM 231. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
PSM 245(2) Course ID: 005564
Recording IV
Provides an advanced and complex study of recording, mixing and editing software data to finish projects. Pre-requisite: PSM 235 or Consent of Instructor. Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 248(2) Course ID: 005565
Songwriting IV
Provides guidance through the process of creating an effective demo and marketing original songs under the direction of a professional songwriter, emphasizing the completed demo project. Pre-requisite: PSM 238 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSM 250(3) Course ID: 005566
Instructor Consent Required
Field Experience/Production/Business
Designed to give a wide variety of practical, hands-on work experience in the bluegrass and traditional music field. (Companion course to PSA 240). Pre-requisite: Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours).
Components: Laboratory
PSW 111(3) Course ID: 005056
Introduction to Furniture Making
Introduces tools, techniques, and materials of the professional woodworker, focusing on actual studio production and design processes in wood and furniture. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
PSW 210(3) Course ID: 005060
Furniture Making III
Focuses on the application of complicated joinery techniques, machine tool operations, advanced finishing applications, and small business considerations. Pre-requisite: PSM 115 and PSM 116 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
PSW 211(3) Course ID: 005061
Wood Bending and Veneering
Covers construction and design possibilities through techniques of strip lamination and steam bending to create curved shaped parts in furniture. Includes veneering design and applications. Pre-requisite: PSM 115 and PSM 116 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
PSW 212(3) Course ID: 005063
Chair Design
Focuses on design and construction for good seating requirements based on sound design and structural integrity. Pre-requisite: PSM 117 or Consent of Instructor. Pre-requisite or Co-requisite: PSM 211. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
PSW 215(3) Course ID: 005062
Furniture Making IV
Emphasizes special processes of design, production, and cost efficiencies associated with operating a custom furniture studio including marketing and overall business considerations. Pre-requisite: (PSW 210 and PSW 212) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
PSW 220(2) Course ID: 005064
Furniture/Wood Product Development
Includes applications associated with design and construction possibilities with fabricated products. Focuses on C. N. C. machining and CAD design as well as 32-MM and KD (knock down) systems including architectural wood and cabinetry design. Pre-requisite: (PSW 210 and PSW 211) or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory Attributes: Technical
PSW 230(6) Course ID: 005065
Furniture Making V
Focuses on creating a body of work for exhibition and developing a professional portfolio. Pre-requisite: (PSW 212 and PSW 215 and PSW 220) or Consent of Instructor. Lab: 6.0 credits (180 contact hours).
Components: Laboratory Attributes: Technical
<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>000563</td>
<td>PSY 110(3) General Psychology</td>
</tr>
<tr>
<td>000151</td>
<td>PSY 180(3) Human Relations</td>
</tr>
<tr>
<td>000312</td>
<td>PSY 181(1) Leadership Development</td>
</tr>
<tr>
<td>000602</td>
<td>PSY 185(3) Human Potential</td>
</tr>
<tr>
<td>000604</td>
<td>PSY 186(1) Directed Undergraduate Reading in Psychology</td>
</tr>
<tr>
<td>000606</td>
<td>PSY 189(1 - 2) Directed Undergraduate Research in Psychology</td>
</tr>
<tr>
<td>005749</td>
<td>PSY 195(1) Orientation to Psychology</td>
</tr>
<tr>
<td>002256</td>
<td>PSY 212(4) Applications of Statistics in Psychology</td>
</tr>
<tr>
<td>002255</td>
<td>PSY 213(4) Research Methods</td>
</tr>
<tr>
<td>000488</td>
<td>PSY 223(3) Developmental Psychology</td>
</tr>
<tr>
<td>000387</td>
<td>PSY 230(3) Psychosocial Aspects of Death and Dying</td>
</tr>
<tr>
<td>004818</td>
<td>PSY 297(3) Psychology of Aging</td>
</tr>
<tr>
<td>004819</td>
<td>PSY 298(3) Essentials of Abnormal Psychology</td>
</tr>
<tr>
<td>000534</td>
<td>PSY 299(1 - 3) Special Introductory Topics in Psychology</td>
</tr>
<tr>
<td>006215</td>
<td>PSY 110(0.6) Foundations of Psychology</td>
</tr>
<tr>
<td>006216</td>
<td>PSY 110(0.6) Senses, Perception and Emotion</td>
</tr>
<tr>
<td>006217</td>
<td>PSY 110(0.6) Learning, Memory, Intelligence</td>
</tr>
<tr>
<td>006218</td>
<td>PSY 110(0.6) Personality &amp; Social Aspects</td>
</tr>
<tr>
<td>006219</td>
<td>PSY 110(0.6) Psychological Disorders</td>
</tr>
<tr>
<td>006379</td>
<td>PSY 223(0.6) Foundations of Development</td>
</tr>
<tr>
<td>006380</td>
<td>PSY 223(0.6) Infancy through Early Childhood</td>
</tr>
<tr>
<td>006381</td>
<td>PSY 223(0.6) Middle Childhood &amp; Adolescence</td>
</tr>
<tr>
<td>006382</td>
<td>PSY 223(0.6) Emerging and Middle Adulthood</td>
</tr>
<tr>
<td>006383</td>
<td>PSY 223(0.6) Late Adulthood: Death &amp; Dying</td>
</tr>
</tbody>
</table>
Basic Skills for the PTA Lab
Develops introductory patient-care skills such as communication; safety procedures; aseptic technique; body mechanics; wheelchair management; patient transfers; positioning and draping; gait training; passive, active, and active-assisted exercise and stretching. Pre-requisite: Admission to the PTA Program; Completion of BIO 137 & BIO 139 with a C or better. Co-requisite: PTA 1501, PTA 1502, PTA 121, PTA 170. Lecture: 2 credits (30 contact hours).

Components: Lecture

Basic Skills for the PTA
Introduces basic concepts of health and disease and introductory patient care skills. Includes orientation to the profession of physical therapy, legal aspects of physical therapy practice, interdisciplinary team, cultural diversity, medical terminology, research and evidence-based practice, and introductory patient-care skills such as communication, aseptic techniques, body mechanics, safety procedures, wheelchair management, patient transfers, positioning and draping, and vital signs, identification and fitting of ambulation aids, basic gait training, patient and consumer education. Pre-requisite: Admission to the PTA Program and completion of BIO 137 with a grade of C or better. Lecture: 2 credits (30 contact hours). Lab: 3.0 credits (90 contact hours).

Components: Laboratory, Lecture

Attributes: Technical

PTA 101(5)
Course Description:
Includes clinical observation and practice of selected physical therapy interventions and data collection with the application of knowledge from previous/concurrent PTA courses and general education coursework. Pre-requisite: Option for Option 2: Admission to the PTA Program. Completion of BIO 137 & BIO 139 with a C or better. Co-requisite: [Option 1: PTA 150 and PTA 160] OR [Option 2: PTA 1501, PTA 1502, PTA 120, and PTA 121]. Pre-requisite or Co-requisite: Option 1: PTA 100 with a C or better. Practicum: 1 credit (90 contact hours).

Components: Practicum

Attributes: Technical

PTA 170(5)
Course ID: 004013

Clinical Practicum I
Includes the basic physical science principles of selected physical therapy interventions, data collection, and selected physical therapy interventions including wound therapy, compression therapy, safety procedures, gait training, traction, massage, superficial heat and cold, deep heat modalities, electrotherapy, ultraviolet radiation, hydrotherapy, and documentation. Pre-requisite: PTA 100, PTA 150, PTA 160, PTA 170. Co-requisite: PTA 220, PTA 240. Lecture: 2 credits (30 contact hours). Laboratory: 3 credits (90 contact hours).

Components: Laboratory, Lecture

Attributes: Course Also Offered in Modules, Technical

PTA 202(2)
Course ID: 006725

Therapeutic Modalities in Physical Therapy Lab
Focuses on etiology, pathology, progression, prevention, data collection, and selected physical therapy interventions for management of patients with the following problems: musculoskeletal conditions, pathological gait, arthritis, and amputations. Includes therapeutic exercise, orthotics, prosthetics, and supportive devices. Pre-requisite: Completion of PTA 1501, PTA 1502, PTA 120, and PTA 121 with a C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 233, PTA 202, and PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lab: 2 credits (60 contact hours).

Components: Lecture

Attributes: Technical

PTA 222(2)
Course ID: 006727

Pathology & Rehabilitation of Orthopedic Conditions
Focuses on etiology, pathology, progression, prevention, data collection, and selected physical therapy interventions for management of patients with the following problems: musculoskeletal conditions, pathological gait, arthritis, and amputations. Includes the study of wellness and women's issues, therapeutic exercise, orthotics, and prosthetics. Pre-requisite: Admission to the PTA Program; Completion of PTA 1501, PTA 1502, PTA 120, and PTA 121 with a C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 233, PTA 202, and PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lecture: 2 credits (30 contact hours).

Components: Laboratory, Lecture

Attributes: Technical

PTA 223(2)
Course ID: 006728

Pathology & Rehabilitation of Orthopedic Conditions Lab
Develops skills in selected physical therapy interventions and data collection for management of patients with the following problems: musculoskeletal conditions, pathological gait, arthritis, and amputations. Includes therapeutic exercise, orthotics, prosthetics, and supportive devices. Pre-requisite: Completion of PTA 1501, PTA 1502, PTA 120, and PTA 121 with a C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 233, PTA 202, PTA 203 and PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lecture: 2 credits (60 contact hours).

Components: Laboratory

Attributes: Technical

PTA 232(3)
Course ID: 006729

Pathology & Rehabilitation of Neurological & Pediatric Conditions
Focuses on etiology, pathology, progression, prevention, data collection, and selected physical therapy interventions for management of patients of all age groups with disabilities resulting from the following: brain injury, spinal cord injury, and genetic/developmental disorders. Includes balance disorders, normal growth and development, and the rationale and techniques of neuromuscular re-education. Pre-requisite: Admission to the PTA Program; Completion of PTA 1501, PTA 1502, PTA 120 and PTA 121 with a C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 233, PTA 202, and PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lecture: 3 credits (45 contact hours).

Components: Lecture

Attributes: Technical

PTA 233(2)
Course ID: 006730

Pathology & Rehabilitation of Neurological & Pediatric Conditions Lab
Develops skills in the application of selected physical therapy interventions for patients of all age groups with disabilities resulting from the following: brain injury, spinal cord injury, and genetic/developmental disorders. Includes the rationale and techniques of neuromuscular re-education. Pre-requisite: Admission to the PTA Program; Completion of PTA 1501, PTA 1502, PTA 120 and PTA 121 with a C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 233, PTA 202, and PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lecture: 2 credits (60 contact hours).

Components: Laboratory

Attributes: Technical
PTA 260(2) Course ID: 004472

Seminar in Physical Therapy

Presents topics to assist the student in the transition to physical therapist assistant including trends, specialized practice, patient services, and the employment process. Utilizes case studies to assist students to integrate theory and practice. Pre-requisite: [Option 1: Admission to the Physical Therapist Assistant Program and completion of PTA 100, PTA 150, PTA 160, and all general education courses required for completion of the Physical Therapist Assistant Program with a grade of C or better; Option 2: PTA 150, PTA 201, and PTA 203 with a C or better. Completion of PTA 204 with a grade of P] OR [Option 2: PTA 222, PTA 223, PTA 232, PTA 233, PTA 202, and PTA 203 with a C or better. Completion of PTA 240 with a grade of P] OR [Option 2: PTA 254, PTA 255, and PTA 280. Students cannot progress to PTA 280 without a grade of C or better in all Co-requisite courses.] Pre-requisite: PTA 204 (If taken as a pre-requisite, a grade of C or greater is required.) Lecture: 2 credits (30 contact hours).

Components: Lecture Attributes: Technical

QMS 240(2) Course ID: 004467

Statistics for Quality I

Introduces methods of organizing information about processes. Examines presentation, description, and analysis of data. Emphasizes handling and interpreting numerical information, including histograms and control charts. Presents and applies concepts of probability to control charts to promote process understanding to improve quality of products and service. Investigates sampling principles. Uses computer generated analyses. Pre-requisite: MA 169 or MT 150. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical
QMS 242(3) Course ID: 004468
Statistics for Quality II
Builds upon the foundation of QMS 240 techniques of inferential statistics. Confidence interval estimation, hypothesis testing, regression analysis, ANOVA, and non-parametric tests are developed. Gauging Studies and SPC techniques for short production runs are included. Lecture: 3 credits (45 contact hours). Pre-requisite: QMS 240.

Components: Lecture
Attributes: Technical

QMS 251(3) Course ID: 006668
Strategic Quality Planning
Introduces major concepts of planning as a proactive catalyst for organizational and quality improvement. Examines the process of envisioning, environmental scanning, mission formulation, and benchmarking. Promotes action planning and leadership for its implementation. Pre-requisite: QMS 101 or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

QMS 262(4) Course ID: 006894
Design of Experiments
Basic statistical methods are reviewed. Statistical techniques which parallel methods of SPC are introduced. Analysis of means, analysis of variance, and contrast comparisons are studied to facilitate the understanding of the different experimental design methods. Examples from manufacturing illustrate how to reduce product variability and optimize process factor settings. Computer software is utilized throughout the course. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours). Pre-requisite: QMS 242 or Consent of Instructor.

Components: Laboratory, Lecture

QMS 299(1 - 6) Instructor Consent Required
Selected Topics in Quality Management Systems:
(Topic)
Quality issues selected are considered in this course. Topics vary from semester to semester. This course may be repeated with different topics for a maximum of 6 credit hours. Lecture: 1-3 credits (15-90 contact hours). Pre-requisite: Consent of Instructor.

Components: Lecture

QMS 1011(0.6) Course ID: 005165
Understanding a Quality Focused Organization
Past quality initiatives and progressive quality trends. Lecture: 0.6 credits (9 contact hours)

Components: Lecture

QMS 1012(0.6) Course ID: 005166
Quality Tools of the Trade
Quality improvement tools and techniques and their integration into an organization. Pre-requisite: QMS 1011 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 1013(0.6) Course ID: 005167
Systems for Quality Improvement
Integrated quality systems and operations that produce high levels of employee and intra-organizational commitment. Pre-requisite: QMS 1012 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 1014(0.6) Course ID: 005168
Quality Planning for Continuous Improvement
Organizational-wide planning techniques and processes focused on long-term quality improvement. Pre-requisite: QMS 1013 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 1015(0.6) Course ID: 005169
People Power: The Key to Quality Improvement
Maximizing the capabilities of people by creating a fun and positive work environment. Pre-requisite: QMS 1014 or consent of instructor. Lecture: 0.6 credit (9 contact hours).

Components: Lecture

QMS 2011(1) Course ID: 006199
Personal Effectiveness for Quality Customer Service
Provides for the development of cognitive processes and behavioral skills needed to improve personal and work group effectiveness. Includes self-evaluation, personal mission statements, time management, communication and listening techniques, coaching, mentoring, group problem solving, and decision making techniques. Pre-requisite: QMS 101 or consent of instructor. Lecture: 1 credit (15 contact hours).

Components: Lecture

QMS 2012(1) Course ID: 006200
Understanding the Customer
Includes techniques for assessing internal and external customer needs and developing plans for delivery of quality customer service. Includes customer’s point of view, benchmarking quality customer service processes, and developing partnerships with customers. Pre-requisite: QMS 2011 or consent of instructor. Lecture: 1 credit (15 contact hours).

Components: Lecture

QMS 2013(1) Course ID: 006201
Analyzing the Health of the Customer Service Relationship
Includes how to measure customer satisfaction, using decision making techniques. Pre-requisite: QMS 2012 or consent of instructor. Lecture: 1 credit (15 contact hours).

Components: Lecture

QMS 2021(0.6) Course ID: 005170
Introduction to Performance Management
Emphasis on performance management and the ABC model of behavior change. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 2022(0.6) Course ID: 005171
ABC Analysis and Delivering Reinforcers
Principles of ABC analysis with emphasis on reinforcers and techniques in delivering reinforcers. Pre-requisite: QMS 2021 or consent or instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 2023(0.6) Course ID: 005172
Reinforcement Schedules and Unwanted Behavior
A variety of reinforcement schedules will be introduced and a number of procedures will be analyzed in dealing with unwanted behavior. Pre-requisite: QMS 2022 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 2024(0.6) Course ID: 005173
Pinpoints and Measurement
Fundamentals of pinpointing, identifying a job’s mission, and understanding effective measurement. Pre-requisite: QMS 2023 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

QMS 2025(0.6) Course ID: 005174
Feedback, Goals, and Applying Performance Management
The value and variety of feedback and its relationship to goal setting as the foundation of performance management. Pre-requisite: QMS 2024 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

RAE 140(4) Course ID: 004228
Elementary Modern Standard Arabic
Introduces students to the standard written language of the Arab World. Provides initial emphasis upon the phonology and script, followed by gradual coverage of the grammar, with exercises in reading, writing, pronunciation, and vocabulary building. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Other

RAE 150(4) Course ID: 004857
Elementary Chinese I
Introduces basic modes of communication in Chinese. Stresses speaking, listening, reading and writing as target skills. Emphasizes everyday language which the students will learn by applying essential grammatical structures to vocabulary. Presents an overview of the cultures of China. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

RAE 151(4) Course ID: 004858
Elementary Chinese II
Continues the study of basic Chinese through grammar, reading, and oral practice. Stresses speaking and listening as the target skills; reading and writing remain centered on intensive and repetitive practice with the pinyin character system. Emphasizes everyday language. Presents an overview of the cultures of China. Pre-requisite: RAE 150 or consent of Instructor. Lecture: 4 credits (60 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

RCP Respiratory Care Practitioner

RCP 110(3) Course ID: 003786
Cardiopulmonary Anatomy and Physiology
Provides an in-depth analysis of the respiratory and circulatory systems with emphasis on the interaction of systems in gas exchange and acid-base balance as well as the structure and function of the chest cage, mechanics of breathing and control of respiration. Lecture: 3 credits (45 contact hours). Pre-requisite: BIO 137 with a grade of C or better. Co-requisite: BIO 137.

Components: Lecture
Attributes: Technical

RCP 120(4) Course ID: 003787
Theory and Principles of Respiratory Care
Presents the principles and techniques of therapeutic procedures used in respiratory care, including an emphasis on medical asepsis, safe handling and administration of medical gases, uses of humidity, aerosol therapy, lung inflation techniques, bronchial hygiene therapy and airway care. Pre-requisite or Co-requisite: (BIO 110 and MAT 146 or MAT150 or equivalent) with a grade of C or better (if taken as pre-requisite). Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 121(1) Course ID: 004832
Respiratory Care Practice I
Emphasizes the health care team and the practice and performance of techniques of basic respiratory care including airway management and bronchial hygiene. Pre-requisite or Co-requisite: RCP 122 with a grade of C or better. Valid Health Care Provider CPR card. Clinical: 1 credit (60 contact hours).

Components: Clinical
Attributes: Technical

RCP 122(4) Course ID: 004831
Fundamentals of Respiratory Care
Introduces respiratory care including chest physical assessment, medical gas therapy, humidity and aerosol therapy, bronchial hygiene, airway management, medical asepsis and development of the respiratory care plan. Pre-requisite: (MAT 110 or MAT 146 or MAT 150) BIO 137 and BIO 139 with a grade of C or better) or consent of instructor. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical
RCP 125(4) Course ID: 003788

Cardiopulmonary Evaluation
Examines cardiopulmonary assessment with in-depth coverage of invasive and non-invasive arterial blood gas interpretation, electrocardiography and assessment of chest and neck imaging. Pre-requisite: (RCP 110 and BIO 137 and (MT 110 or MT 145 or MT 150 or equivalent) with a grade of C or better). Pre-requisite or Co-requisite: RCP 110. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 130(3) Course ID: 003789

Pharmacology
Provides an in-depth study of pharmacological agents, their use in the practice of respiratory care for patients with cardiovascular or pulmonary impairment as well as accuracy in drug calculations and delivery. Lecture: 3 credits (45 contact hours). Pre-requisite: (RCP 110 and (MT 110 or MT 145 or MT 150) with a grade of C or better). Pre-requisite or Co-requisite: RCP 110 and (MT 110 or MT 145 or MT 150).

Components: Lecture
Attributes: Technical

RCP 140(2) Course ID: 004835

Cardiopulmonary Assessment
Emphasizes blood gas analysis, pulmonary function studies, electrocardiography and chest radiography. Pre-requisite: [RCP 110 and RCP 122 and RCP 130] with a grade of C or better or consent of instructor. Lecture: 1.5 credits (22.5 contact hours). Pre-requisite or Co-requisite: RCP 120 with a grade of C or better; Valid Health Care Provider CPR card. Clinical: 2 credits (120 contact hours).

Components: Clinical
Attributes: Technical

RCP 150(2) Course ID: 003790

Clinical Practice I
Provides an opportunity for observation and/or performance of techniques for chest physical assessment, medical gas administration, humidity and aerosol therapy and bronchial hygiene in the assigned clinical setting. Pre-requisite or Co-requisite: RCP 120 with a grade of C or better; Valid Health Care Provider CPR card. Clinical: 2 credits (120 contact hours).

Components: Clinical
Attributes: Technical

RCP 175(3) Course ID: 003791

Clinical Practice II
Provides an opportunity to participate in the health care team while practicing techniques of respiratory care including airway management and bronchial hygiene Pre-requisite: [(RCP 110 and RCP 122 and RCP 130) with a grade of C or better] or consent of instructor. Pre-requisite or Co-requisite: RCP 150 with a grade of C or better; Clinical: 3 credits (180 contact hours).

Components: Clinical
Attributes: Technical

RCP 176(2) Course ID: 004834

Respiratory Care Practice II
Emphasizes participation in the health care team while practicing techniques of basic respiratory care including airway management and bronchial hygiene Pre-requisite: [(RCP 110 and RCP 122 and RCP 130) with a grade of C or better] or consent of instructor. Pre-requisite or Co-requisite: RCP 140 (If taken as a pre-requisite, a grade of C or better is required.) Clinical: 2 credits (120 contact hours).

Components: Clinical
Attributes: Technical

RCP 180(3) Course ID: 003792

Ventilatory Support
Covers the technological and physiological aspects of mechanical ventilation including the theory of operation, classification, and management of the patient ventilator system. Pre-requisite: RCP 120 and RCP 150 with a grade of C or better. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 185(2) Course ID: 004837

Introduction to Mechanical Ventilation
Introduces the technological aspects of mechanical ventilation including the theory of operation, classification and patient-ventilator system checks. Pre-requisite: [(RCP 140 and RCP 176) with a grade of C or better] or consent of instructor. Lecture: 1.5 credits (22.5 contact hours). Laboratory: 0.5 credit (15 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 190(2) Course ID: 003793

Advanced Ventilatory Support
Addresses advanced concepts in ventilatory support, including physiologic effects, indications, monitoring and management of the patient-ventilator system. Pre-requisite: RCP 180 with a C or better. Lecture: 1.5 credits (22.5 contact hours); Laboratory: 0.5 credits (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 195(4) Course ID: 004838

Patient-Ventilator System Management
Addresses advanced concepts in ventilatory support including monitoring and management of the patient-ventilator system. Pre-requisite: [(RCP 185 and RCP 201) with a grade of C or better] or consent of instructor. Lecture: 2 credits (45 contact hours). Laboratory: 1 credit (60 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 200(3) Course ID: 003794

Clinical Practice III
Provides practice in adult mechanical ventilation procedures and airway management in the critical care setting and operation of other respiratory care skills. Pre-requisite: RCP 175 with a grade of C or better. Clinical: 3 credits (180 contact hours).

Components: Clinical
Attributes: Technical

RCP 201(2) Course ID: 004836

Respiratory Care Practice III
Provides practice in adult mechanical ventilation procedures and airway management in the critical care setting in addition to continued performance of the basic respiratory care skills. Pre-requisite: [(RCP 140 and RCP 176) with a grade of C or better] or consent of instructor. Clinical: 2 credits (120 contact hours).

Components: Clinical
Attributes: Technical

RCP 204(3) Course ID: 003795

Emergency & Special Procedures
Prepares students to participate in advanced emergency life support and special procedures. Pre-requisite or Co-requisite: [(RCP 130 and BIO 139) with a grade of C or better]. Lecture: 2.5 credits (37.5 contact hours). Laboratory: 0.5 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 210(3) Course ID: 003796

Cardiopulmonary Pathophysiology
Addresses the etiology, diagnosis, clinical manifestations and management of cardiopulmonary disorders as related to respiratory care including the fundamental microbiological principles and their relation to health and disease. Pre-requisite: [(RCP 110 or (RCP 201 and RCP 185) with a grade of C or better] or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

RCP 212(3) Course ID: 003797

Neonatal/Pediatric Respiratory Care
Provides a study of the special needs of the neonatal and pediatric patient with focus on fetal cardiopulmonary development, evaluation, assessment and treatment of cardiopulmonary conditions and diseases of the neonatal and pediatric patient, as well as equipment unique to this population. Pre-requisite: (RCP 185 and RCP 201) with a grade of C or better) or Consent of Instructor. Pre-requisite or Co-requisite: RCP 190 with a grade of C or better or Consent of Instructor. Lecture: 2.5 credits (37.5 contact hours). Laboratory: 0.5 credits (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 214(3) Course ID: 003798

Advanced Diagnostic Procedures
Prepares students to assist physician in advanced diagnostic, and therapeutic procedures. Pre-requisite: (BIO 139 with a grade of C or better). Lecture: 2.5 credits (37.50 contact hours). Laboratory: 0.5 credits (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 225(3) Course ID: 003799

Clinical Practice IV
Provides observation and practice of advanced cardiopulmonary evaluation techniques while improving efficiency in the ventilatory management of patients. Pre-requisite: RCP 200 with a grade of C or better. Clinical: 3 credits (180 contact hours).

Components: Clinical
Attributes: Technical

RCP 226(4) Course ID: 004841

Respiratory Care Practice IV
Provides observation and practice of advanced cardiopulmonary evaluation techniques while improving efficiency in the ventilatory management of adult patients Pre-requisite: [(RCP 176 and RCP 185) with a grade of C or better] or Consent of Instructor. Clinical: 4 credits (240 contact hours).

Components: Clinical
Attributes: Technical

RCP 228(2) Course ID: 003800

Preventive and Long-Term Respiratory Care
Covers prevention of cardiopulmonary disorders and care of individuals with long term cardiopulmonary disability. Addresses psychosocial and physical needs of clients with emphasis on improving the quality of life and cardiopulmonary reserve. Pre-requisite: [(RCP 110 or (RCP 195 and RCP 210 and RCP 212 and RCP 226) with a grade of C or better] or consent of instructor. Lecture: 2 credits (30 contact hours).

Components: Lecture
Attributes: Technical

RCP 240(3) Course ID: 004844

Advanced Cardiopulmonary Evaluation
Addresses cardiopulmonary assessment including hemodynamic monitoring, pulmonary and cardiac exercise/ stress testing, advanced cardiac procedures, blood chemistry and fluid and electrolyte balance. Pre-requisite: [(RCP 193 and RCP 201 and RCP 212, and RCP 226) with a grade of C or better] or consent of instructor. Lecture: 2.75 credits (41.25 contact hours). Laboratory: .25 credit (15 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 245(2) Course ID: 004845

Advanced Cardiac Life Support
Focuses on managing acute cardiovascular emergencies including cardiac arrest, acute myocardial infarction and stroke. Students demonstrating essential knowledge and skills and obtaining 85% or greater on the written exam will receive an American Heart Association ACLS provider card. Lecture: 1.5 credits (22.50 contact hours). Laboratory: 0.5 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

RCP 250(3) Course ID: 003801

Clinical Practice V
Prepares students to participate in effective and efficient planning, managing and delivering respiratory care to diverse client populations in various settings. Pre-requisite: RCP 225 with a grade of C or better. Clinical: 3 credits (180 contact hours).

Components: Clinical
Attributes: Technical
RDG 251(4) Course ID: 004843
Respiratory Care Practice V
Prepares students to plan, manage, and deliver respiratory care to diverse client populations in various settings. Enables students to practice mechanical ventilation techniques and observe/practice techniques of advanced life support. Pre-requisite: [RCP 195 and RCP 210 and RCP 212 and RCP 226] with a grade of C or better; or Consent of Instructor. Clinical: 4 credits (240 contact hours).
Components: Clinical
Attributes: Technical

RCP 260(1) Course ID: 004846
Respiratory Care Seminar
Analyzes material previously studied in the program and prepares students for the National Board for Respiratory Care examination. Addresses job seeking skills. Pre-requisite: [RCP 200 and RCP 210 and RCP 212 and RCP 226] with a grade of C or better; or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

RDG 20(3) Course ID: 002286
Improved College Reading
Improves proficiency in reading comprehension, vocabulary, and critical thinking skills, and prepares students for college and career reading through individualized and/or group instruction practice. Pre-requisite: As determined by KCTCS Placement Policy. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Reading, Course Also Offered in Modules

RDG 30(3) Course ID: 002287
Reading for the College Classroom
Improves critical reading skills by developing vocabulary techniques, active reading strategies, comprehension accuracy, and interpretation of visual elements in text. Applies theories and strategies taught in the course to college and career reading materials. Pre-requisite: As determined by KCTCS Placement Policy, or successful completion of RDG 020. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Reading, Course Also Offered in Modules

RDG 41(1) Course ID: 006805
Reading Laboratory
Designed to improve reading comprehension, vocabulary, and critical thinking skills. Strategies taught in this course will be applied to college level materials. Pre-requisite: Compass score 61-83. Lab: 1.0 credit (15 contact hours).
Components: Laboratory
Attributes: Remedial - Reading

RDG 100(2) Course ID: 015658
Reading Workshop
Improves reading comprehension and vocabulary of expository materials by improving student’s comprehension processes and reading-related study skills. Applies strategies and skills taught in the course are applied to college level materials. Pre-requisite: KCTCS Placement Policy; COMPASS score 70-84 or equivalent. Co-requisite: Paired with a content-rich course designed by Division Chair, Program Coordinator, or Faculty. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Other

RDG 185(3) Course ID: 000301
College Reading
Designed to improve critical reading, thinking, and writing at the college level by identifying the components of expository, persuasive, argumentative, and research text, including the author’s use of tone, purpose, biased language and writing patterns. Applies strategies to college level text. Pre-requisite: KCTCS Placement Policy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

RDG 201(0.75) Course ID: 006737
Active Reading
Applies active reading, metacognitive, self-evaluation, and reading rate strategies for proficiency in reading comprehension. Includes topics such as the reading process, self-monitoring and self-correcting comprehension, and adjusting reading strategies for various comprehension purposes. Pre-requisite: As determined by KCTCS Placement Policy. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 202(0.75) Course ID: 006738
Transitions, Thought Patterns
Construct meaning from texts through analyzing transitions and patterns of organization to improve comprehension and critical thinking skills. Pre-requisite: As determined by KCTCS Placement Policy, Lecture:.75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 204(0.75) Course ID: 006740
Words and Visual Elements
Expands vocabulary through examining word parts and context clues, and infers tone and purpose through word combinations. Constructs meaning from visual elements to improve comprehension of text. Pre-requisite: As determined by KCTCS Placement Policy. Lecture:.75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 301(0.75) Course ID: 006741
Critical Reading
Uses active learning, prior knowledge, and metacognitive strategies to quickly enhance comprehension. Uses active learning, prior knowledge, and self-assessment strategies to quickly enhance comprehension of text. Pre-requisite: As determined by KCTCS Placement Policy, or successful completion of RDG 020. Lecture: .75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 302(0.75) Course ID: 006742
Text Structures and Supports
Analyzes text structures, paragraphs, longer passages, and arguments for central ideas, supporting examples, reasons, and evidence to construct meaning from texts. Pre-requisite: As determined by KCTCS Placement Policy, or completion of RDG 020. Lecture: .75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 303(0.75) Course ID: 006743
Logic and Evidence
Analyzes text for logical reasoning and valid supports to quickly detect key information in texts. Pre-requisite: As determined by KCTCS Placement Policy, or completion of RDG 020. Lecture: .75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

RDG 304(0.75) Course ID: 006744
Words and Visual Elements
Construct meaning from word parts, context clues, connotation, and denotation for accurate comprehension of text. Evaluate word combinations to determine the author’s view, tone, and purpose for writing the texts. Infer meaning from visual elements such as diagrams, charts, and photos. Pre-requisite: As determined by KCTCS Placement Policy, or completion of RDG 020. Lecture: .75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - Reading

REA 122(3) Course ID: 000575
Construction and Blueprints
Includes the basic concepts of construction, design, and blueprint reading. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 121(3) Course ID: 000778
Appraising
Addresses appraising residential real estate for loans, estates, condemnations, and listings, and the factors that contribute to the value of real estate. Includes three methods of estimating value with emphasis given to the market data approach. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 120(3) Course ID: 000365
Real Estate Marketing
Includes marketing and selling of real estate properties. Emphasizes qualifying prospects, preparing for property showings, negotiating the sale, developing a five-year goal plan, and managing time. Utilizes computer applications. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 100(3) Course ID: 000906
Real Estate Principles I
Introduces real estate as a business and as a profession, designed to acquaint the student with the wide range of subjects necessary to the practice of real estate. Includes license law, ethics, purchase and listing agreements, brokerage, deeds, financing, appraisals, mortgages, and real estate property management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 122(3) Course ID: 000575
Construction and Blueprints
Includes the basic concepts of construction, design, and blueprint reading. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
REA 200(3) Course ID: 000805
Real Estate Principles II
Continues Real Estate Principles I with emphasis on license law, finance, property management, marketing, land planning and development, brokerage management, fair housing, and appraising. Pre-requisite: REA 100. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 201(3) Course ID: 000915
Property Management
Examines the basics of managing income-producing real property. Includes management plans, tenant selection, marketing and advertising, accounting methods, net operating income statements, maintenance, and the Landlord Tenant Act. Pre-requisite: REA 100. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 202(2) Course ID: 000875
Real Estate Investments I
Introduces various types of real estate investments. Includes a comparison of investments in real estate with other types of investments. Covers basic fundamentals of investment analysis and terminology. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 203(3) Course ID: 000527
Commercial and Industrial Property
Covers classifications of commercial and industrial properties. Includes investment, environment, financing, taxes, depreciation, ownership, cash flow projection, and discount analysis. Integrates computer applications. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 204(3) Course ID: 000825
Land Planning and Development
Includes the specialized field of land planning and development with emphasis on new home construction. Includes market research, site selection and analysis, regulations, financing, earthwork, streets, and landscaping. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 205(3) Course ID: 000620
Farm Brokerage
Includes farm brokerage and specific subjects relating to the sale of farm property. Covers listing, prospecting, showing, financing, negotiating and closing the farm sale as well as the duties of the farm manager. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 212(3) Course ID: 000194
Real Estate Investments II
Includes an analysis of operations and cash flow with detailed instruction on the use and calculation of internal rate of return, financial management rate of return, operational and feasibility analysis, and model investment projections. Pre-requisite: REA 202. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REA 220(3) Course ID: 000886
Real Estate Brokerage Management
Includes basic real estate principles and theories as they apply to real estate brokerage management. Includes legal and work environment; brokerage management concepts; employment agreements; personnel selection, compensation, and management; policy manuals; listing and marketing management; and financial control. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 221(1) Course ID: 004772
Basic Income Approach to Property Valuation
Provides students with a foundation in the concepts and procedures necessary in the appraisal of real estate and income property. Explores how Gross Potential Income is obtained by market analysis and research, and how and where to obtain all operating expenses being generated by an income-producing property, how to develop a reliable Capitalization Rate, and how to utilize Direct Capitalization Methods. Pre-requisite: REA 121 or Appraiser's license. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

REA 222(1) Course ID: 004773
Uniform Standards of Professional Appraisal
Provides an understanding and appreciation of the Uniform Standards of Professional Appraisal Practice (USPAP) and how these standards set the minimum foundation on which both the development of an appraisal and the reporting of that appraisal must adhere and develop. Meets the pre-licensing and continuing education requirements of the Kentucky Real Estate Appraisers Board and the Appraisal Institute. Pre-requisite: REA 212 or Appraiser's license. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

REA 225(3) Course ID: 000432
Real Estate Finance
Examines all aspects of real estate finance including financial instruments, financial institutions, buyer qualifications, and mortgage markets. Includes governmental influence, risk analysis, and financing of income-producing properties. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 230(3) Course ID: 000391
Real Estate Law
Examines the laws and regulations pertaining to real estate and related environmental issues. Includes ownership rights, title examination, planning and zoning, contracts of sale, Fair Housing regulations, agency issues, court systems and recent court decisions. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

REA 299(1 - 3) Course ID: 000541
Selected Topics in Real Estate: (Topic)
Includes topics to expand course offerings as new technology and information are developed, as well as to address local real estate needs. Covers various topics from semester to semester at the discretion of the instructor. (May be repeated to a maximum of six credit hours.) Pre-requisite: Consent of instructor. Lecture: 1-3 credits (15 contact hours).
Components: Lecture

REL Religious Studies

REL 101(3) Course ID: 000916
Introduction to Religious Studies
Introduces students to the study of religion, emphasizing the varieties, differences, and similarities of religious experience and expression. Examines the interaction between religious experience and expression and social and cultural contexts through study of selected examples. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities, SB - Social Behavior Science

REL 102(3) Course ID: 005523
Philosophy of Religion
Introduces students to the study of religion, emphasizing the varieties, differences, and similarities of religious experience and expression. Examines the interaction between religious experience and expression within its social and cultural contexts. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities, SB - Social Behavior Science

REL 121(3) Course ID: 005283
Introduction to the New Testament
Introduces New Testament using knowledge of literary forms as well as historical and cultural backdrops to aid in the interpretation of the religious and philosophical meanings of the text. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

REL 130(3) Course ID: 000360
Introduction to Comparative Religion
Introduces students to a comparative analysis of world religions, emphasizing beliefs, rituals, artistic expressions, and cultural and social organization. Includes both Eastern and Western religions. (Same as ANT 130). Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: ANT 130
Attributes: AH - Arts and Humanities, SB - Social Behavior Science, Course Also Offered in Modules

REL 135(3) Course ID: 007063
Introduction to Comparative Christianity
Provides an overview of the history of Christianity and compares the major Christian faiths and movements, their formation, and the political and social influences that caused their development. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REL 150(3) Course ID: 007409
Comparative Ethics of Major World Religions
Examines central theological teachings, modes of ethical reasoning, key ethical virtues and norms of major religious traditions from both Eastern and Western Religions. Considers the lives, sacred stories, dogma and texts of central religious figures as part of the context for moral thinking in a global setting. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

REL 240(3) Course ID: 006945
Life and Teaching of Jesus
Examines the life and teachings of Jesus of Nazareth through a critical analysis of the ancient sources and modern scholarly reconstructions. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

REL 241(3) Course ID: 006946
Life and Letters of Paul
Presents the person and thought of the Apostle Paul in social, cultural, political, philosophical, and theological context. Investigates Paul's ethics and his views as preserved in the Christian New Testament. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

REL 298(3) Course ID: 006968
Special Topics in Religion: Topic
Examines special topics in Religion. Includes but not limited to individual religious figures, movements, sacred writings, religious traditions and selected eras. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

REL 1301(1) Course ID: 007323
Introduction to Religion
Introduces students to the relationship between religion, society, and the individual. Explores basic precepts of world religions through their socio-cultural development. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

REL 1302(1) Course ID: 007324
Major Eastern Religions
Identifies belief systems and ritual expressions of major Eastern religions. Analyzes the impact on the individual and society. Pre-requisite: REL 1301. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
REL 1303(1) Course ID: 007325
Major Western Religions
Identifies belief systems and ritual expressions of major Western religions. Analyzes the impact on the individual and society. Pre-requisite: REL 1301. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

RES Respiratory Care

RES 299(1 - 6) Course ID: 003802
Selected Topics in Respiratory Care: (Topic)
A special project or experience in Respiratory Care will be selected to enhance core material in the Respiratory Care Program. It provides the student an opportunity for independent-study and specialized instruction as approved by the instructor. This course may be repeated to a maximum of 6 hours. Lecture: variable; Laboratory: variable. Co/Pre-requisite: Consent of the Instructor.
Components: Laboratory, Lecture

RES 299(1 - 4) Course ID: 002271
Selected Topics in Respiratory Care: (Topic)
A special project or experience in Respiratory Care will be selected to enhance core material in the Respiratory Care Program. It provides the student and opportunity for independent study and specialized instruction as approved by the instructor. This course may be repeated to a maximum of 6 hours.
Components: Lecture
Attributes: Technical

SCI Science

SCI 295(3) Course ID: 005237
Scientific Investigations
Real-time, hands-on research projects are carried out using the scientific method. Results of research projects may be presented at the Conference for Student Research, or other scientific meetings. Students prepare research projects for inclusion in a Handbook of Procedures Using the Scientific Method. Pre-requisite: 1. Mathematics, Reading, and English assessment placement scores above developmental levels or completion of requisite developmental courses. 2. Completion of 3 credit hours of general education science area in which the research project will be carried out with grade of B or higher. 3. Consent of Instructor. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).
Components: Lecture
Attributes: SN - Science

SDC Student Development

SDC 100(1) Course ID: 004847
College Survival Seminar
This course is designed to introduce new students to college in order to facilitate a successful college experience. Students will discover campus resources and support services available to them. Students will be introduced to career and life planning, study strategies, coping skills (i.e., stress management, interpersonal relationships), team projects, activities aimed at self-discovery, and issues that impact college campuses and our global society that are important to the development of the modern college student. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

SDC 102(1) Course ID: 004848
Stress Management
Students will review various physiological and psychological approaches to stress with an emphasis on creating an awareness of how to change and manage their responses to stressful situations. Options and appropriate exercises for coping with anxiety will be presented. Topics will include time management, cognitive restructuring, health, wellness and relaxation training. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

SDC 104(1) Course ID: 006187
Transfer Planning
Increases knowledge, personal awareness, and self-efficacy related to the transfer process after completion of a two year degree. Provides information, decision-making tools, transition skills, and support to navigate the transfer process, and concluding with an individualized transfer plan to ensure successful matriculation to a four-year institution. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

SDC 105(1) Course ID: 004849
Career Planning Seminar
Students will become more knowledgeable about themselves and career options. Self-assessments and vocational inventories measuring interests, work values, skills and abilities will be administered to students. Students will learn how to research careers, career alternatives and employment trends. Topics will include goal setting, decision-making and employability skills. Students will complete a personal career plan at the conclusion of the course. Lecture: 1 credit (15 contact hours).
Components: Lecture

SDC 109(1) Course ID: 005053
Employability Skills
This course is designed to prepare students for the world of work. Students will be introduced to self and career assessment, employability skills (i.e., the application process, resume writing, interviewing, and follow-ups), and the job market and job search strategies. Lecture: 1 credit (15 contact hours).
Components: Lecture

SET Small Engine Repair

SET 100(3) Course ID: 002002
Introduction to Small Engine Repair
This course introduces the student to small engines and their various applications. Also included are the identification and demonstration of hand tools, special tools, and measuring tools. It covers the selection and use of shop manuals and applying safety procedures when working with small engines. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SET 110(3) Course ID: 002003
Basic Small Engine Theory
This course introduces the student to the principles of construction and operation of internal combustion engines including the definitions of the following trade terms: valve overlap, reed valve, two-stroke cycle engine and four-stroke cycle engine. Co-requisite: SET 100. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SET 111(1) Course ID: 002004
Basic Small Engine Lab
This course provides applications of the theory presented in SET 110. It includes hands-on experience, step-by-step procedures for disassembling engines, identification of engine components, inspection of parts, performing precision measurements on crankshaft, cylinder bore and valves, and the reassembly of the engines. Co-requisite: SET 110. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

SET 116(3) Course ID: 002005
Introduction to Marine Technology
This course introduces the student to outboard and inboard motors and boats, safety practices and the operation of two-cycle and four-cycle motors. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SET 117(2) Course ID: 002006
Marine Electrical and Fuel Systems
This course presents electrical theory and applications for the marine technician including the marine battery, starter systems, alternator charging systems, and fuel systems. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

SET 118(3) Course ID: 002007
Powerhead Overhaul
This course presents instruction in overhauling two-cycle engines and repairing/ or replacing ignition systems. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SET 119(1) Course ID: 002008
Powerhead Overhaul Lab
This course presents hands-on experience in overhauling two-cycle motors, tuning-up motors and repairing and/or replacing ignition systems. Co-requisite: SET 118. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

SET 120(3) Course ID: 002009
Mid-Section, Lower Unit and Trim/Tilt
This course presents the theory and application necessary to repair and/or replace parts in the mid-section, lower unit, and trim/tilt systems in marine applications. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
This course introduces fuel systems used on two-cycle and four-cycle engines: the basic types, components, the types of carburetors, the types of fuel filters, and the types of fuel pumps and air filters. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 220(3)** Course ID: 002013 Electronic Systems
This course presents electrical systems and their application. Basic electrical theory, including electrical pressure, current, resistance and power measured in volts, amperes, and ohms is also presented. Ohm’s law will be discussed with its application to electrical circuits. Basic circuits (series, parallel, and combination of series and parallel) will be discussed. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 201(1)** Course ID: 002014 Electrical Systems Lab
This course presents hands-on training in electrical systems and their application. Basic electrical theory, including electrical pressure, current, resistance and power measured in volts, amperes, and ohms is presented. Ohm’s law will be discussed with its application to electrical circuits. Basic circuits (series, parallel, and combination of series and parallel) will be discussed. Co-requisite: SET 200. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 210(3)** Course ID: 002015 Ignition/Charging Systems
This course presents ignition/charging systems theory, the principle of operation of a generator/alternator system, and component identification and application. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 211(1)** Course ID: 002016 Ignition/Charging Systems Lab
This course presents hands-on experience with ignition/charging systems, the principle of operation of a generator/alternator system, and component identification and application. Co-requisite: SET 210. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 220(3)** Course ID: 002017 Fuel Systems
This course introduces fuel systems used on two-cycle and four-cycle engines: the basic types, components, the types of carburetors, the types of fuel filters, and the types of fuel pumps and air filters. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 221(1)** Course ID: 002018 Fuel Systems Lab
This course provides hands-on experience with fuel systems. The student will diagnose carburetor problems, rebuild diaphragm-type and float type carburetors, test carburetor and engine needed adjustments, and adjust the governor according to manufacturers’ specifications on two-cycle and four-cycle engines. Co-requisite: SET 220. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 231(3)** Course ID: 002020 Motorcycle Chassis Systems
After completion of this course, the student will be able to identify front fork components and service procedures for the steering assembly. The student will be able to identify the service requirements for final drives and the front fork. Instruction will be given in the inspection of brake systems, safe handling of brake fluid, replacing brake shoes and pads, and bleeding hydraulic brake systems. Laboratory: 3 credits (135 contact hours).

Components: Laboratory Attributes: Technical

**SET 233(2)** Course ID: 002021 Carburetors and Fuel Systems
The student will be able to identify parts of a motorcycle carburetor and discuss the components and operations of various carburetor circuits. The student will also be able to remove, clean, and install a carburetor and remove, clean and install a fuel valve. Laboratory: 2 credits (90 contact hours).

Components: Laboratory Attributes: Technical

**SET 235(1)** Course ID: 002022 Clutches and Starter Systems
Upon completion of this course the student will be able to discuss starter systems found on motorcycles and have a working knowledge of servicing kick and electric starters. The student will also be able to identify parts of a clutch, discuss guidelines for clutch service and be able to remove, disassemble, inspect and reassemble a motorcycle clutch. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 237(2)** Course ID: 002023 Engine Tune-Up
After completion of this course the student will be able to perform motorcycle engine tune-ups including: ignition systems, replacing points and condensers, adjusting and verifying timing and service guidelines. Laboratory: 2 credits (90 contact hours).

Components: Laboratory Attributes: Technical

**SET 239(1)** Course ID: 002024 Tools and Measurements
After completing this course the student will be able to list and demonstrate the ability to use the tools of the motorcycle technician, including hand tools, power tools, measuring instruments and specialty tools. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 240(3)** Course ID: 002025 Four Stroke Cycle Engine
This course presents theory, repair and overhaul methods of four-cycle engines. The student will learn to inspect engines for problems, follow service manuals for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve train components. The student will use special tools including a cylinder hone, valve guide reamer, valve seat cutter, and valve grinder and demonstrate safety practices while using this equipment. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 241(1)** Course ID: 002026 Four Stroke Cycle Engine Lab
In this course, students repair and overhaul four-cycle engines, inspect engines for problems, follow service manual specifications needed for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve training components. Students will use the following special tools: cylinder hone, valve guide reamer, valve seat cutter, and valve grinder. Safety practices will be observed while using the equipment. Co-requisite: SET 240. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 250(3)** Course ID: 002027 Two Stroke Cycle Engine
This course presents theory, repair and overhaul methods of two-stroke cycle engines. Students learn to inspect engines for problems, follow a service manual for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve training components. This course introduces students to the following special tools: cylinder hone, valve guide reamer, valve seat cutter, and valve grinder. Safety practices will be observed while using equipment. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

**SET 251(1)** Course ID: 002028 Two Stroke Cycle Engine Lab
Students repair and overhaul two-cycle engines. Students disassemble, inspect, and service cylinder, piston rings and connecting rod, crankshaft and crankcase assembly, and demonstrate effective safety practices while using special equipment. Students also reassemble and test engines and components to standards set by manufacturer. Co-requisite: SET 250. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 255(2)** Course ID: 002029 Chassis Systems
This class presents hands-on application of the theory, repair, and overhaul methods of manual and hydrostatic transmissions. It includes how to inspect, diagnose, and repair manual and hydraulic steering systems and deck assemblies. The student will also learn how to perform preventative maintenance, adjust wheel bearings, check steering alignment and remove and replace tires. This course will introduce the student to special tools, fire changers, and the safety practices associated with the use of this equipment. Laboratory: 2 credits (90 contact hours).

Components: Laboratory Attributes: Technical

**SET 257(1)** Course ID: 002030 Welding for Small Engines
This class introduces students to the art and science of welding. Students learn to prepare the equipment and to perform basic welding operations. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

**SET 258(2)** Course ID: 002031 Portable Two Cycle Equipment Lab
This class will enable the student to identify the external parts of the equipment, operate equipment, handle and mix fuel, and transport and handle trimmers and saws. Instruction will be given to identify and diagnose related problems in chain saws, trimmers and other two-stroke cycle equipment. Laboratory: 2 credits (90 contact hours).

Components: Laboratory Attributes: Technical

**SET 298(2)** Course ID: 002032 Practicum
Practicum provides supervised on-the-job work experience related to the student’s education objectives. Students participating in practicum do not receive compensation. Pre-requisite: Permission of Instructor. Practicum: 2 credits (150 contact hours).

Components: Practicum
**SOC Sociology**

**SOC 101(3)**  
**Course ID:** 000920  
**Introduction to Sociology**  
Introduces concepts and methods of sociology including the study of social organization, group processes, social inequality, social institutions, and social change. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: Technical

**SOC 152(3)**  
**Course ID:** 000404  
**Modern Social Problems**  
Examines selected social problems of the day from a sociological perspective. Topics may include family, poverty, education, crime, race, housing, population, health care, industrial development, and power. Pre-requisite: SMT 101 or SOC 151, or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: SB - Social Behavior Science

**SOC 220(3)**  
**The Community**  
Examines social organization and process in modern communities, both rural and urban; social techniques of community improvement. Pre-requisite: Three hours of sociology or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: SB - Social Behavior Science

**SOC 235(3)**  
**Inequality in Society**  
Analyzes the nature, development, and persistence of inequality in various societies. Diverse dimensions of inequality are viewed as the basis for a number of specific social problems in Western and non-Western societies. Social origins of inequality are emphasized. Policy implications are addressed. Pre-requisite: Three hours of sociology or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: SB - Social Behavior Science

**SOC 249(3)**  
**Mass Media and Mass Culture**  
Examines the interplay between the technology and content of the mass communications media and culture. Pre-requisite: COM 101 or SOC 101 or its equivalent. (Same as COM 249). Lecture: 3 credits (45 contact hours).

Course Equivalents: COM 249  
Attributes: SB - Social Behavior Science

**SOC 260(3)**  
**Population, Resources and Change**  
Examines the relationship between human social and cultural systems and their environment. Perception, definition and policy responses to environmental, resource and population issues are explored. Pre-requisite: SOC 101 or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: SB - Social Behavior Science

**SOC 293(3)**  
**Special Introductory Topics in Sociology**  
An introductory study of a selected topic in sociology. Topics may include, but are not limited to, industrial sociology, sociology of aging, gender issues, criminology, social inequalities, sociology of families, and rural sociology. Pre-requisite: SOC 101 or RSO 102. Lecture: 3 credits (45 contact hours).

Components: Lecture  
Attributes: Other

**SOCL Sociology**

**SOCL 230(3)**  
**Course ID:** 005516  
**Deviant Behavior**  

Components: Lecture  
Attributes: University Course (Western Kentucky University)
SPA 101(4) Course ID: 000922
Elementary Spanish I (spoken approach)
Introduces basic modes of communication in Spanish. Stresses speaking, listening, reading and writing as target skills. Emphasizes everyday language which the students will learn by applying essential grammatical structures to vocabulary. Provides instructional assignments and self-corrective exercises that will be practiced in the classroom. Presents an overview of the culture of various Spanish-speaking countries.
Components: Lecture
Attributes: Foreign Language, Cultural Studies, Course Also Offered in Modules

SPA 102(4) Course ID: 000799
Elementary Spanish II (spoken approach)
Continues to highlight the basic modes of communication in Spanish, to include present and past tense. Stresses speaking, listening, reading and writing as target skills. Emphasizes everyday language which the students will learn by applying essential grammatical structures to vocabulary. Presents an overview of the culture of various Spanish-speaking countries. Pre-requisite: SPA 101, or consent of the department and placement test. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Foreign Language, Cultural Studies, Course Also Offered in Modules

SPA 110(3) Course ID: 003884
Basic Conversational Spanish
Introduces pronunciation, practical structures, and basic vocabulary designed to enable students to communicate using simple Spanish in everyday situations in Spanish-speaking countries and areas of the United States. Cannot be used for major or minor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

SPA 115(3) Course ID: 002261
Hispanic Culture: (Country or Region)
Introduces the basic cultural patterns of a Spanish-speaking country or region through in-class experience and/or travel. May be taken up to two times with focus on different country or region. Lecture: 3.0 credits (45 contact hours).

SPA 151(3) Course ID: 005762
Spanish for Health Professionals
The course will teach Spanish terminology and basic grammar related to medical patients, including vocabulary for diagnosis and treatment. Pre-requisite: Prior college or high school Spanish or other experience with the Spanish language roughly equivalent to one semester of college study. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

SPA 201(3) Course ID: 000917
Intermediate Spanish I
Focuses on intermediate level speaking, listening, reading, and writing skills with an emphasis on more advanced grammatical structures; emphasizes speaking the language to expand vocabulary; examines current issues, cultural nuances, and dominant Hispanic themes. Pre-requisite: SPA 102, or consent of department and placement test. Lecture: 3 credits (45 contact hours).

SPA 202(3) Course ID: 002262
Intermediate Spanish II
 Continues intermediate level speaking, listening, reading, and writing skills from SPA 201 with an emphasis on more advanced grammatical structures; focuses on speaking the language to expand vocabulary; examines current issues, cultural nuances, and dominant Hispanic themes. Pre-requisite: SPA 201 or consent of department and placement test. Lecture: 3 credits (45 contact hours).

SPA 211(3) Course ID: 004678
Spanish Conversation
Sections limited to no more than 15 students each. Oral-aural practice in spoken language. Special emphasis placed on the acquisition of idioms and fundamental conversational vocabulary. Pre-requisite: SPA 202 or equivalent or consent from the department. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SPA 1011(0.8) Course ID: 006222
Spanish Greetings & Farewells
Highlights greetings and farewells in simple conversations; introduces the present tense of the verb ser (to be); explores the geography, culture, history and political issues of Spanish speaking countries with focus on Hispanics in the United States. Lecture: 0.8 credit (12 contact hours).
Components: Lecture
Attributes: Technical

SPA 1012(0.8) Course ID: 006223
Spanish for School Life
Introduces basic modes of communication to discuss school life and everyday activities; focuses on asking questions and describing people and things; introduces the present tense of estar (to be) and -ar, explores the geography, culture, history and political issues of Spanish speaking countries with focus on Spain. Pre-requisite: SPA 1011. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

SPA 1013(0.8) Course ID: 006224
Spanish for Family and Friends
Features descriptions of family and friends; focuses on using possessive and descriptive adjectives; introduces the present tense of -er and -ir verbs; uses the verbs tener and venir to express needs and state of mind; explores the geography, culture, history and political issues of Spanish speaking countries with focus on Ecuador. Pre-requisites: SPA 1013. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 1014(0.8) Course ID: 006225
Spanish for Pastime Activities
Presents conversations regarding Pastimes and activities; focuses on the present tense of the verbs ir, select stem-changing and verbs with irregular yo forms, in the context of making plans and describing events; explores the geography, culture, history and political issues of Spanish speaking countries with focus on Mexico. Pre-requisite: SPA 1014. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 1015(0.8) Course ID: 006226
Spanish for Travel
Presents conversations to discuss and plan a vacation; expands communication to talk about feelings; introduces the present progressive tense and compares the verbs ser and estar to express descriptions, conditions and emotions; explores the geography, culture, history, and political issues of Spanish speaking countries. Pre-requisite: SPA1014. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 1021(0.8) Course ID: 006227
Spanish for Shopping
Highlights conversations and vocabulary in the shopping setting; introduces verbs to know and practices answering questions of to whom or for whom an action is done; presents preterit to express past tense; explores the geography, culture, history, and political issues of Spanish speaking countries with focus on Cuba. Pre-requisite: SPA 101. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 1022(0.8) Course ID: 006228
Spanish for Daily Routines
Presents descriptions of the daily routine; introduces reflexive verbs and the irregular preterit of ser (to be) and ir (to go); highlights the verb gustar and verbs like gustar; presents negative statements; explores the geography, culture, history, and political issues of Spanish speaking countries with focus on Peru. Pre-requisite: SPA 1021. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 2103(0.8) Course ID: 006229
Spanish for Restaurant Settings
Features dialogs for ordering in a restaurant and describing food, for explaining where you are and for talking about familiar people and places; introduces the present of stem-changing verbs, comparatives and superlatives and indirect object pronouns and direct object pronouns; explores the geography, culture, history, and political issues of Spanish speaking countries with focus on Guatemala. Pre-requisite: SPA 1022. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

SPA 1024(0.8) Course ID: 006230
Spanish for Celebrations
Focuses on the present of stem-changing verbs; explores the geography, culture, history and political issues of Spanish speaking countries with focus on Mexico. Pre-requisite: SPA 1024. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

SPA 1025(0.8) Course ID: 006231
Spanish for Health Care
Focuses on the present of stem-changing verbs; explores the geography, culture, history and political issues of Spanish speaking countries with focus on Ecuador. Pre-requisite: SPA 1025. Lecture: 0.8 credit (12 contact hours).
Components: Lecture

STA 1111(3) Course ID: 007218
Introduction to Statistical Reasoning
Examines the interaction of the science and art of statistics with our everyday lives emphasizing examples from the social and behavioral sciences. The student will not be required to learn mathematical formulas. Topics include the nature of statistics, uses and misuses of statistics, the scope and limitations of statistics, criteria by which published statistics may be judged, interpretation of probability and the act of decision making. Pre-requisite: Completion of the mathematics basic skills requirement.
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)

STA 200(3) Course ID: 006640
Statistics: A Force in Human Judgment
This course is concerned with the interaction of the science and art of statistics with our everyday lives emphasizing examples from the social and behavioral sciences. The student will not be required to learn mathematical formulas. Includes analysis of sports formulas, processes, and calculations. Approaches mathematical models and ranking methods to the sports world. Assumes students will have a general knowledge and interest in sports. Pre-requisite or Co-requisite: MAT 065. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

STA 210(3) Course ID: 005196
Statistics: A Force in Human Judgement
Examines the interaction of the science and art of statistics in everyday life emphasizing examples from the social and behavioral sciences including the nature, scope, limitations, and interpretation of statistics. Topics include the nature of statistics, uses and misuses of statistics, the scope and limitations of statistics, criteria by which published statistics may be judged, interpretation of probability and the act of decision making. Pre-requisite: Completion of the mathematics basic skills requirement.
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)

STA 215(3) Course ID: 006938
Introduction to Statistical Reasoning
Introduction to descriptive statistics, normal distributions, linear correlation and regression, sampling, experiments, chance phenomena, one- and two-sample estimation and hypothesis testing, chi-square tests, and use of statistical software. Pre-requisites: Completion of all developmental requirements (reading, writing, and mathematics). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: University Course (Eastern Kentucky University)
STA 220(3) Course ID: 005197
Statistics
Examines statistical description of sample data including frequency distributions, measures of central tendency, and measures of dispersion. Includes theoretical distributions, statistical estimation, and hypothesis testing. Introduces simple linear regression and correlation. Pre-requisite: MAT 150 or equivalent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, Course Also Offered in Modules

STA 291(3) Course ID: 006641
Statistical Method
Introduction to principles of statistics. Statistical description of sample data including frequency distributions, measures of central tendency, and measures of dispersion. Theoretical distributions, statistical estimation, and hypothesis testing. Introduction to simple linear regression and correlation. Pre-requisites: MA 113, MA 123 or equivalent. Lecture: 3.0 Credits (45 Contact hours).
Components: Lecture
Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)

STA 296(3) Course ID: 016128
Statistical Methods and Motivations
Introduction to principles of statistics with emphasis on conceptual understanding. Students will articulate results of statistical description of sample data (including bivariate), application of probability distributions, confidence interval estimation and hypothesis testing to demonstrate properly contextualized analysis of real-world data. Pre-requisite: MA 113, MA 123, MA 137, or equivalent. Lecture: 3.0 Credits (45 contact hours).
Components: Lecture
Attributes: University Course (University of Kentucky)

STA 2201(1) Course ID: 007406
Descriptive Statistics
Examines statistical description of sample data including frequency distributions, measures of central tendency, and measures of dispersion. Pre-requisite: MAT 150 or equivalent. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

STA 2202(1) Course ID: 007407
Probability Distributions
Examines theoretical distributions and statistical estimation. Pre-requisite: STA 2201. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

STA 2203(1) Course ID: 007408
Statistical Inference
Examines hypothesis testing and introduces simple linear regression and correlation. Pre-requisite: STA 2202. Lecture: 1.0 credit (15 contact hours).
Components: Laboratory

SUR 100(12) Course ID: 002046
Surgical Technology Fundamentals Theory
Provides an overview of the history of surgery and the role of the surgical technologists, including professional responsibilities, developing a professional resume, legal and ethical considerations, interpersonal relationships and communication skills. Incorporates safety, hazards preparation, aseptic technique and duties of the scrubbed and the circulating surgical technologist during a surgical procedure. Provides information for the performance and completion of surgical procedures including general surgery, obt/with attendant specialty equipment, abdominal incisions, wound closures, and standard precaution skills. Pre-requisite: Minimum C grade in [BIO 135 or (BIO 137 and BIO 139)] and (AHS 115 or CLA 131 or MIT 103) and (BIO 225 or BIO 226 or BIO 227 or BIO 118); Current CPR certification for Healthcare Professionals. Co-requisite: SUR 101 and SUR 125 and SUR 130. Lecture: 12 credits (180 contact hours).
Components: Lecture
Attributes: Technical

SUR 107(1) Course ID: 002047
Surgical Technology Fundamentals Lab
Provides opportunity for demonstration of skills required to prepare the patient, operating room, basic equipment, and supplies; and to function as a member of an operating room team. Incorporates OSHA safety standards, aseptic technique, and duties of both the scrubbed and circulating technologist during a surgical procedure. Pre-requisite: Minimum “C” grade in [BIO 135 or (BIO 137 and BIO 139)] and (AHS 115 or CLA 131 or OST 103) and (BIO 225 or BIO 226 or BIO 227 or BIO 118). Current CPR certification for Healthcare Professionals. Co-requisite: SUR 130. Pre-requisite or Co-requisite: SUR 100 or (SUR 109 and SUR 110). Lab: 1.0 credit (90 contact hours).
Components: Laboratory
Attributes: Technical

SUR 109(3) Course ID: 005375
Introduction to Surgical Technology
Provides a brief overview of the history of surgery and an in-depth introduction of the role and responsibilities of the surgical technologists, an integral health care professional in the delivery of perioperative patient care and surgical services; including professional responsibilities, developing a professional resume, legal and ethical considerations, interpersonal relationships and communication skills. Introduces the basics of biomedical science and identifying information resources. Introduces all-hazards preparation for the surgical technologist, basic principles of aseptic technique, sterilization, surgical scrub, gown and gloves and basic instruments used in surgery along with correlating the impact of microbiology in relationship to the practice of sterile technique and infection control in the operating setting. Lecture: 3.5 credits (45 contact hours).
Components: Lecture

SUR 110(9) Course ID: 005470
Surgical Technology Fundamentals
Incorporates safety, aseptic technique and duties of the scrubbed and the circulating surgical technologist during a surgical procedure; Provides in depth information for the successful preparation, performance, and completion of basic surgical procedures; Addresses specialty areas of general surgery, obt/with attendant specialty equipment; Introduces the theory of abdominal incisions, wound closures, and standard precaution skills in each clinical assignment; Includes biomedical sciences of electricity, physics, and robotics as they pertain to surgical technology. Pre-requisite: Admission to Surgical Technology program, current CPR or BLS certification, SUR 109, AHS 115 or consent. Lecture: 9 credits (135 contact hours).
Components: Lecture
Attributes: Technical

SUR 125(2 - 3) Course ID: 002049
Surgical Technology Skills Practicum I
Provides experience in a healthcare setting performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure with an emphasis on OSHA standards. Pre-requisite: Minimum C grade in SUR 101. Current CPR certification for Healthcare Professionals. Co-requisite: SUR 100 or (SUR 109 and 110). Pre-requisite or Co-requisite: SUR 130. Clinical: 2.0 - 3.0 credits (120 - 180 contact hours).
Components: Clinical
Attributes: Technical

SUR 130(2) Course ID: 002050
Principles of Surgical Pharmacology
Introduces the fundamental principles of the clinical use of drugs. Emphasizes the role and responsibility of the surgical technologist related to drugs, a review of basic mathematical skills, a thorough knowledge of the systems of measurement, and conversion and application of skills to perform dosage calculations. Presents information related to medicines in common use in the surgical setting. Pre-requisite: Minimum “C” grade in (BIO 135 or BIO 137 and BIO 139) and (AHS 115 or CLA 131 or OST 103) and (BIO 225 or BIO 226 or BIO 227 or BIO 118). Current CPR certification for Healthcare Professionals. Co-requisite: SUR 100 - SUR 101. Co-requisite or Pre-requisite: SUR 125. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

SUR 200(9) Course ID: 002051
Surgical Technology Advanced Theory
Focuses on the relevant anatomy, indications for surgery, patient preparation, special equipment and supplies, purpose, expected outcomes, and possible complications of specialty areas following OSHA standards. Pre-requisite: Minimum grade of “C” in [SUR 100 or (SUR 109 and SUR 110)] and SUR 125 and SUR 130. Co-requisite: SUR 201. Lecture: 9.0 credits (135 contact hours).
Components: Lecture
Attributes: Technical

SUR 201(6 - 7) Course ID: 002052
Surgical Technology Skills Practicum II
Provides an advanced experience in a healthcare setting performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure with an emphasis on OSHA standards. Pre-requisite: Minimum grade of “C” in [SUR 100 or (SUR 109 and SUR 110)] and SUR 125 and SUR 130. Co-requisite: SUR 200. Clinical: 6.0 - 7.0 credits (360-420 contact hours).
Components: Clinical
Attributes: Technical

SUR 275(2) Course ID: 002053
Surgical Technology Advanced Practicum
Provides an advanced experience in a healthcare setting performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure with limited supervision. Pre-requisite: Minimum grade of “C” in SUR 200 in a healthcare setting performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure with an emphasis on OSHA standards. Pre-requisite: Minimum grade of “C” in [SUR 100 or (SUR 109 and SUR 110)] and SUR 125 and SUR 130. Co-requisite: SUR 200. Clinical: 2.0 credits (120 contact hours).
Components: Practicum
Attributes: Technical

SUR 280(5) Course ID: 004246
Department Consent Required
Surgical Anatomy
Provides accurate information about the structure and function of the human body. Intended for students who are pursuing a career as a Surgical First Assistant. Pre-requisite: Surgical Technologist or CNOR. Co-requisite: SUR 284 & SUR 295. Lecture: 5.0 credits (75 contact hours).
Components: Lecture
Attributes: Technical
SUR 282(3) Course ID: 004247
Perioperative Bioscience
Promotes an understanding of microbial physiology which precedes the understanding of disease transmission and/or prevention; Emphasizes standard precautions and infection control; Contains pharmacology section designed to promote understanding of effects of pre, post and operative drugs; Includes anesthesia section designed to promote understanding of general principles/techniques and drugs used by anesthesia and effects on the patient; Introduces the student to the following diagnostic testing such as radiology, laboratory, cardiographics, wound healing, nutrition perioperatively, fluid and electrolyte balance, and techniques in maintaining homeostasis. Pre-requisite: Program admission and student must be a certified Surgical Technologist or an RN with operating room experience. Student must provide current documentation of certification. Pre-requisite: SUR 280 & SUR 284 & SUR 295. Co-requisite: SUR 296. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SUR 284(3) Course ID: 004248
Principles of Surgical Assisting
Introduces the student to the theory involved in surgical assisting; Incorporates anatomy, surgical techniques, aseptic techniques, draping, positioning, suturing, safety, and duties of the surgical team. Pre-requisite: Program admission. Student must be a certified Surgical Technologist or an RN with operating room experience OR consent. Co-requisite: SUR 280 & SUR 295. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

SUR 285(1) Course ID: 004250
Surgical First Assistant Clinical
Includes the performance of entry level duties of a surgical assistant in a clinical setting under the supervision of a qualified preceptor. Follows the Commission on Accreditation of Allied Health programs Surgical Assistant Core Curriculum related to the nature of the cases and the duties involved. Pre-requisite: Program admission. Co-requisite: SUR 280 and SUR 284. Clinical: 1 credit hour (45 contact hours).
Components: Clinical
Attributes: Technical

SUR 296(3) Course ID: 006666
Surgical First Assistant Practicum
Involves advanced training in the preoperative, operative, and postoperative phases of surgery. Exposes students to a wide variety of surgical procedures. Emphasizes surgical anatomy, along with critical thinking skills, in every surgical procedure under the supervision of a surgeon who is responsible for overseeing the clinical educational experience of the student. Pre-requisite: SUR 280, SUR 284 and SUR 295. Co-requisite: SUR 282. Practicum: 3.0 credits (270 contact hours).
Components: Practicum
Attributes: Technical

SUR 297(1) Course ID: 016240
Surgical First Assistant Practicum II
Involves advanced training in the preoperative, operative, and postoperative phases of surgery. Exposes students to a wide variety of surgical procedures. Emphasis on advanced anatomical knowledge that is applied towards the surgical diagnosis, along with critical thinking skills, in every surgical procedure under the supervision of a surgeon who is responsible for overseeing the clinical educational experience of the student. Pre-requisite: SUR 280, SUR 284, SUR 295, SUR 282, SUR 296. Practicum: 1 credit (90 contact hours)
Components: Practicum
Attributes: Technical

SUS 101(3) Course ID: 016179
Introduction to Sustainability
Introduces the concept of sustainability and its varied interpretations; the core concepts in the study of sustainability. Provides an overview and perspective of issues in sustainability from multiple disciplines and viewpoints. Pre-requisite: Current KCTCS placement scores for College level reading and writing. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

SUS 102(3) Course ID: 016180
Sustainable Built Environment
Introduces the ideas of sustainability in the built environment, our history of construction and expansion, and buildings and how they interact with the natural environment. Explores issues from the perspective of sustainable planning, design, and construction issues across disciplines. Pre-requisite: Current KCTCS placement scores for College level reading and writing. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

SUS 201(3) Course ID: 016181
Sustainable Societies
Examines sustainability concepts, values, and institutional contexts as they are manifested in societal frameworks in the U.S., and globally. Includes topics such as urban agriculture, individual or community based environmental conservation efforts, corporate sustainability programs, as well as cultural and societal implications of resource allocations as they pertain to equity and social justice. Pre-requisite: Current KCTCS placement scores for College level reading and writing. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

SUS 202(3) Course ID: 016182
Sustainable Urban Systems
Investigates the physical and social urban infrastructure networks as they relate to sustainability. Examines the institutions, as well as the formal and informal rules, that use, manage, or govern urban physical and social infrastructures. Considers the role of private groups, non-profits, and other organizations and the networks and systems of support that exists for environmental and sustainable-oriented activity. Pre-requisite: SUS101 Intro. To Sustainability & SUS201 Sustainable Societies. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

SWK 124(3) Course ID: 000584
Introduction to Social Services
Introduces social welfare concepts and philosophies. Examines the profession of social work and its philosophy and value commitments within social welfare. Covers public and private service delivery systems. (Required of social work majors and recommended it be taken the first year.) Lecture: 2.0 credits; Lab: 2.0 credits.
Components: Laboratory, Lecture
Attributes: Technical

SWK 180(3) Course ID: 000154
Introduction to Gerontology
The major biological, psychological, and sociological issues facing America's aging population are examined. Attention is also focused on the resources available to meet needs of older Americans. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SWK 220(3) Course ID: 005587
Cultural Diversity in Human Services
Explores current and historical cultural diversity in human services as it applies to clients from various cultural groups. Focuses on cultural self-awareness and cultural competence as it pertains to human services professionals and client helper relationships. Draws attention to dominant and minority cultural norms, attitudes and belief systems including the culture of poverty. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: HMS 220
Attributes: Technical

SWK 222(3) Course ID: 000484
Development of Social Welfare
Includes cultural traditions, value orientations, and political and economic forces which have contributed to the emergence of present social welfare policies and systems in the United States. (Required of social work majors and open to all others.) Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SWK 255(3) Course ID: 005584
Introduction to Addictions
Provides an overview of approaches to understanding addictions with emphasis on the bio-psycho-social model. Analyzes the etiology, progression, and processes involved in change. Pre-requisite: PSY 100 or PY 110 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: HMS 211
Attributes: Technical

SWK 268(3) Course ID: 005586
Crisis Intervention
Focuses on crisis intervention theory, suicide prevention, and risk assessment techniques. Covers risk assessment protocols, crisis triage, de-escalation and referral. Introduces clinical, ethical and legal aspects. Pre-requisite: PSY 100 or PY 110 or permission from instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Course Equivalents: HMS 212
Attributes: Technical

SWK 269(3) Course ID: 000304
Juvenile Delinquency
The history, nature, and extent of juvenile delinquency are studied including an examination of trends and methods of treatment in contemporary society. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

SWK 275(3) Course ID: 000736
The Family
Covers the nature and structure of family systems and examination of major family issues. Includes discussion in patterns of family interaction with attention paid to resources designed to meet family needs. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science

SWK 281(3) Course ID: 000734
Psychology of Aging
A study of the aging process with emphasis on the needs, roles, and attitudes of seniors in our society. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
**THA 200(3) Course ID: 003810**

**Introduction to Dramatic Literature**
Provides a study of representative dramatic literature from Greek Antiquity to the present.
Components: Lecture
Attributes: AH - Arts and Humanities

**THA 220(3) Course ID: 000791**

**Acting II: Scene Study (Realism)**
Concentrates on several components of the acting process: preliminary study in modern acting theories, Stanislavski to the present; textual analysis, character study and scene work; studio exercises aimed at refining rehearsal skills for the actor. Pre-requisite: THA 126 or Consent of Instructor. Lecture: 2.0 credit hours (30 contact hours). Laborat: 1.0 credit hour (15 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

**THA 227(3) Course ID: 002267**

**Acting III: Scene Study (Styles)**
Introduces the actor to a performance style other than realism while continuing to develop the actor's skills in analysis and rehearsal. Pre-requisite: THA 226 or Consent of Instructor. Lecture: 2.0 credit hours (30 contact hours). Lab: 1.0 contact hour (15 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

**THA 250(3) Course ID: 006782**

**Stage Electrics**
Provides a comprehensive study of sound production and stage lighting in principle and practice. It concentrates on the fundamentals of circuits, instrumentation, and operation of stage lights and sound. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (90 contact hours).
Components: Laboratory, Lecture
Attributes: Pilot Course, Technical

**THA 260(3) Course ID: 000717**

**Stagecraft**
Provides a study of theory, principles and techniques of scenic design and construction. Includes assignments in practical applications. Lecture: 2.0 credit hours (30 contact hours). Lab: 1.0 credit hour (75 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
THA 233(3) Course ID: 000111
American Theatre
Surveys American theatre history, giving particular emphasis to the late nineteenth and twentieth centuries, examining both theatre practice and dramaturgy and placing them within an historical, social, and cultural context. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: AH - Arts and Humanities

TRU Truck Driving

TRU 100(6) Course ID: 002092
Truck Driving
The purpose of the program is to prepare individuals as professional drivers for the truck driving industry. The course content is designed to familiarize students with the fundamental and operational procedures to become professional truck drivers. This is the entire curriculum. It is not divided into individual courses. Pre-requisite: CCL Permit.
Components: Laboratory, Lecture
Attributes: Technical

UPH Upholstery

UPH 100(3) Course ID: 002093
Introduction to Upholstery
This course introduces the student to the variety of careers in the upholstery business and provides an overview of the industry including furniture manufacturing, furniture reupholstery and repair and employment opportunities. Tools, equipment and techniques used in upholstering are discussed. The terms used in industry are stressed. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

UPH 111(1) Course ID: 002096
Upholstery Fabrics and Materials Lab
This course provides practical experience in the use of materials used in upholstering, the techniques for using each material, selection of upholstery fabrics and details concerning the usage of each fabric.
Components: Lecture
Attributes: Technical

UPH 101(1) Course ID: 002094
Introduction to Upholstery Lab
This course provides practical experience in the use of tools, equipment, and techniques of the upholstery industry. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

UPH 110(3) Course ID: 002095
Upholstery Fabrics and Materials
This course introduces the student to various materials used in upholstering, the techniques for using each material, selection of upholstery fabrics and details concerning the usage of each fabric.
Components: Lecture
Attributes: Technical

UPH 120(1) Course ID: 002097
Furniture Preparation
This course introduces the student to the various techniques used in the stripping and repair of furniture frames and to the installation of webbing and springs. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

UPH 121(2) Course ID: 002098
Furniture Preparation Lab
This course provides practical experience in the use of various techniques used in the stripping and repairing of furniture frames and to the installation of webbing and springs. Laboratory: 2 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

UPH 125(1) Course ID: 002099
Padding Installation
This course introduces the student to various aspects of padding furniture for upholstery purposes. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

UPH 126(1) Course ID: 002100
Padding Installation Lab
This course provides practical experience in the use of padding furniture for upholstery purposes. Laboratory: 1 credit (45 contact hours).
Components: Laboratory
Attributes: Technical

UPH 131(4) Course ID: 002101
Final Cover Fabrication and Installation Lab
This course provides practical experience in the use of various aspects of padding furniture for upholstery. The methods and materials used in making cushions and techniques and materials used in channeling and stuffing processes are also taught in this course. Laboratory: 4 credits (180 contact hours).
Components: Laboratory
Attributes: Technical

VCA Visual Communications Art and Design

VCA 102(3) Course ID: 002108
Fundamentals of Drawing
Introduces basic drawing skills and concepts as it relates to graphic design. Emphasizes how to create form in space and to draw in proper perspective for reproduction purposes. Students must receive a letter grade of "C" or better. Lecture/Lab: 3 credits (90 contact hours).
Components: Lecture
Attributes: Technical

VCA 104(3) Course ID: 002090
Digital Color Theory
Explores the visual dynamics of color as it relates to graphic design, including the basic characteristics of color: hue, value, and saturation. Explores color perception and psychology; color harmonies and schemes using color wheels; RGB, CMYK, Pantone and ICC Profiles; and color correction. Students must receive a letter grade of "C" or better. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

VCA 108(3) Course ID: 002110
Digital Photography
Introduces students to basic digital photography principles and skills to compose technically proficient photographs. Emphasizes basic digital camera operations for use in the design industry is the focus of this course. Includes proper scanning techniques and importing photographs, and a discussion on appropriate resolution and file formats. Students must receive a letter grade of "C" or better. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

VCA 132(3) Course ID: 000201
Illustration For Advertising
Develops skills in visualization and illustration techniques as they apply to advertising and graphic design. Emphasizes visual interpretation of narrative textual information (such as a story, poem or magazine article), editorials, advertising, and books. Uses a variety of media from traditional media to digital media to create professional illustrations as elements of advertising. Students must receive a letter grade of "C" or better. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

VCA 151(3) Course ID: 005382
Digital Filmmaking I
Provides training in non-studio video production and editing. Includes applied aesthetics and production of dramatic, informational or experimental work on video. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

VCA 152(3) Course ID: 005383
Digital Filmmaking II
Provides training in computer based editing and pre-production planning. Includes applied aesthetics of video editing production of dramatic, informational or experimental work on video. Pre-requisite or Co-requisite: VCA 160 and VCC 166 with a grade of C or better. Lecture: 2.0 credits (30 contact hours). Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

VCA 160(3) Course ID: 000203
Commercial Photography I
Teaches the use of 35 mm cameras, printers, enlargers, and laboratory equipment in relation to black and white photography. Includes basic photographic methods and skills in acquiring, developing, printing and presentation of photographs. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

VCA 161(3) Course ID: 000207
Commercial Photography II
Continues the study of the 35mm camera as it relates to commercial art primarily in a studio setting using digital photography. Includes problem solving through assigned projects. Pre-requisite: VCA 160 with a grade of C or better or consent of instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

VCA 170(3) Course ID: 000212
Advertising Design I
Introduces the principles and practices of graphic design. Includes terminology and procedures commonly used in graphic design, along with the Macintosh computer system and software used in illustration and graphic design for the print media and for the Internet, and navigation through and searching for information on the Internet using a web browser. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Computer Literacy, Technical

VCA 171(3) Course ID: 005395
Advertising Design II
Explores basic to intermediate skills in electronic publishing, design layout, type composition, and prepress for printing and publishing applications. Pre-requisite: VCA 170 with a grade of C or better or Consent of Instructor. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
**VCA 240(3) Course ID: 000213**

**Package Design**

Explores the development of brand identity as it relates to packaging. Introduces concepts, theories, terminology, design, and production of hard and soft wall three-dimensional packaging and product labels. Emphasizes creative problem solving and legal requirements for the packaging industry. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 125 and VCC 110. Lecture: 3.0 credits (90 contact hours).

**Components:** Lecture, Lab/Practicum: 3.0 credits (90 contact hours).

**Attributes:** Technical

**VCA 250(3) Course ID: 004553**

**Advertising Design**

Explores and reviews the role of advertising in the marketing mix, and the function of major media forms. Uses a creative brief process to research, create, and design promotional concepts that meet assignment specifications. Explores legal strategies involved in advertising. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 125 and VCC 110. Lecture: 3.0 credits (90 contact hours).

**Components:** Lecture, Lab/Practicum: 3.0 credits (90 contact hours).

**Attributes:** Technical

**VCA 251(3) Course ID: 005384**

**Digital Filmmaking III**

Provides training in single-person video production with an emphasis on Electronic News Gathering style of video. Covers news, interviews, TV commercials, and documentaries. Pre-requisite: VCA 152 with a grade of C or better or Consent of Instructor. Pre-requisite or Co-requisite: VCA 160 with a grade of C or better or Consent of Instructor. Lecture: 2 credits (30 contact hours), Laboratory: 1.0 credit (30 contact hours).

**Components:** Laboratory, Lecture, Attributes: Technical

**VCA 252(3) Course ID: 005385**

**Digital Filmmaking IV**

Provides training in multiple-person video production with an emphasis on Film-Style video production, storytelling, TV commercials, and documentaries. Pre-requisite: VCA 251 with a grade of C or better or Consent of Instructor. Lecture: 2.0 credits (30 contact hours), Laboratory: 1.0 credit (30 contact hours).

**Components:** Laboratory, Lecture, Attributes: Technical

**VCA 255(3) Course ID: 002120**

**Corporate Design**

Creates and develops a total corporate identity emphasizing relationships between appropriate research and development of appropriate concepts for a company image. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 125 and VCC 110. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (75 contact hours/37.5:1 ratio).

**Components:** Lecture, Attributes: Technical

**VCA 260(4) Course ID: 000208**

**Commercial Photography III**

Continues Commercial Photography II. Applies principles and techniques with emphasis on digital color photographic illustrations captured in the studio and on location. Begins use of lens perspective controls on the camera. Pre-requisite: VCA 161 with a grade of C or better or consent of instructor. Lecture/Lab: 4.0 credits (90 contact hours).

**Components:** Lecture, Lecture/Lab: 4.0 credits (90 contact hours).

**Attributes:** Technical

**VCA 261(4) Course ID: 000209**

**Commercial Photography IV**

Continues Commercial Photography III. Emphasizes color photography in color management. Guidance in portfolio development as well as exploration of business practices in photography. Pre-requisite: VCA 260 with a grade of "C" or better or consent of instructor. Lecture/Lab: 4.0 credits (90 contact hours).

**Components:** Lecture, Lecture/Lab: 4.0 credits (90 contact hours).

**Attributes:** Technical

**VCA 270(4) Course ID: 000214**

**Advertising Design III**

Emphasizes computer design and layout based on extensive use of the industry standard page layout and drawing programs, and critical thinking for problem solving, preparation, and production of electronic artwork. Pre-requisite: VCA 171 with a grade of C or greater or Consent of Instructor. Lecture: 2 credits (30 contact hours), Laboratory: 2 credits (60 contact hours/30:1 ratio).

**Components:** Laboratory, Lecture, Attributes: Technical

**VCA 271(4) Course ID: 000215**

**Advertising Design IV**

Extends VCA 270 to include creation of a professional portfolio. Pre-requisite: VCA 270 with a grade of C or greater or Consent of Instructor. Lecture: 2 credits (30 contact hours), Laboratory: 2 credits (60 contact hours/30:1 ratio).

**Components:** Laboratory, Lecture, Attributes: Technical

**VCA 280(3) Course ID: 002126**

**Instructor Consent Required Professional Portfolio Development**

Introduces students to proper assembly of a professional portfolio and presentation skills. Students will refine work created in previous classes, identify strengths and weaknesses in their work, create a self-promotional package, attend mock interviews and participate in portfolio exhibit. Students must receive a letter grade of "C" to successfully complete this course. Pre-requisite: Permission of Instructor. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (75 contact hours/37:5:1 ratio).

**Components:** Laboratory, Lecture, Attributes: Technical

**VCA 290(3) Course ID: 000205**

**Instructor Consent Required Folio Seminar**

Prepares advanced design and photography students to complete a professional portfolio. Explores job interview techniques to help students understand their responsibilities in seeking positions. Lecture: 2 credits (30 contact hours), Laboratory: 1 credit (30 contact hours). Pre-requisite: Consent of Instructor.

**Components:** Lecture, Attributes: Technical

**VCA 298(2 - 6) Course ID: 000210**

**Practicum**

Incorporates and applies skills and techniques previously learned in the classroom and commercial art laboratory. Provides practical experience in a variety of commercial art establishments in the community. Pre-requisite: VCA 280, VCA 261 or VCA 271 with a grade of C or greater or Consent of Instructor. Lecture: 1 credits (15 contact hours) Lab/Practicum: 3 credits (150 contact hours/50:1 ratio)

**Components:** Laboratory, Lecture, Attributes: Technical

**VCC Visual Communications Core**

**VCC 100(3) Course ID: 004455**

**Introduction to Visual Communication**

Introduces the concepts, vocabulary, and processes used in the visual communication field. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 110(3) Course ID: 002111**

**Graphic Design Concepts**

Explores in detail the elements and principles of design to develop excellent skills in producing creative ideas and effective designs for various media forms. Provides an opportunity to apply concepts in the process of design. Emphasis on the importance of project planning is discussed. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCC 125. Lecture/ Lab: 3.0 credits (90 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 115(3) Course ID: 005141**

**Strategic Concepts**

Introduces advertising, promotion, creative and marketing concepts related to the visual communication field. Topics also include legal issues, media strategy, and consumer behavior. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 125(3) Course ID: 006859**

**Introduction to Computer Graphics**

Introduces students to computer applications that are specific to the visual communication industry. Develops primary skills using software applications for page layout, illustration and digital imaging. Students must complete with a letter grade of "C" or better. Lecture/Lab: 3.0 credits (90 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 150(3) Course ID: 004475**

**Mac Basics**

Provides an introduction to Apple/Mac computer technology. Emphasizes industry specific needs, including hardware and software. Presents basic uses of the Internet, email, file management and computer ethics. This course fulfills the computer/digital literacy requirement. Students must receive a letter grade of "C" or better. Basic keyboarding recommended. Pre-requisite: RDG 020. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 166(3) Course ID: 001510**

**Photoshop Basics**

Develops skills to digitally manipulate, enhance, and create composite photographs. Introduces raster graphics and their use in the visual communication industry. Creation and manipulation of graphics from simple to increasingly complex images and designs will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite: Digital Literacy. Lecture/Lab: 3.0 credits (90 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 200(3) Course ID: 002124**

**Computer Illustration**

Develops skills in computer illustration and drawing using industry standard software. Introduces vector graphics and their use in the visual communication industry. Creation of vector graphics from simple to increasingly complex designs will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite: Digital Literacy. Lecture/Lab: 3.0 credits (90 contact hours).

**Components:** Lecture, Attributes: Technical

**VCC 205(3) Course ID: 004454**

**Introduction to HTML**

Introduces the creation of Web sites using hypertext markup language (HTML) and cascading style sheets (CSS). Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture, Attributes: Technical
VCC 210(3) Course ID: 002125
Advanced Computer Illustration
Provides students with advanced knowledge and skills in computer illustration. Creation of vector graphics and complex designs will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCC 200. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 212(3) Course ID: 005589
Vinyl Graphics and Applications
Introduces concepts, vocabulary, and processes used in relation to the design and production of graphics for the sign industry. Provides knowledge in the operation of wide format printers and vinyl cutters/plotters to create special graphics used for indoor and outdoor advertising. Covers the procedures used to prepare vinyl graphics and substrates for different applications. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 214(3) Course ID: 005731
Dye-Sublimation Process
Provides knowledge in the dye-sublimation process and special inks. Students gain skills to produce designs used on various promotional materials and the operation of heat transfer equipment, software packages and dye-sublimation printers. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 216(3) Course ID: 006850
Pad Printing
Introduces students to the technology of pad printing. Includes the set-up and operation of pad printing equipment, including registration, creating molds, artwork preparation, plate preparation, and using inks and substrates to produce quality promotional products to specification. Students must complete with a letter grade of "C" or better. Pre-requisite or Co-requisite: VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 218(3) Course ID: 006861
Digital Printing
Provides basic knowledge of the steps and procedures used to prepare files for digital printing. Provides instruction on basic set-up and operation of a variety of digital printing equipment available in the lab. Provides basic knowledge used to troubleshoot, correct, and prepare digital files for printing. Provides students with the basic skills to produce and utilize PDF documents. Provides knowledge in the importance imposition and page-layout of various publications. Develops skills in the ability to design digital printed materials from start to finish to customer specifications including the set-up and operation of finishing and binding equipment. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 220(3) Course ID: 004473
Instructor Consent Required
InDesign Basics
Develops skills in page design and layout using Adobe InDesign software. Students will understand apply concepts and mechanics of page layout to produce various publications using graphic design concepts learned. Students must receive a letter grade of "C" or better. Pre-requisite: Digital Literacy. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 223(3) Course ID: 004462
Instructor Consent Required
Advanced InDesign
Provides advanced skills in page design and layout using Adobe InDesign software. Design and creation of a variety of complex and multi-page documents will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 220. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 260(3) Course ID: 001509
Instructor Consent Required
Publication Design
Provides advanced knowledge of design publications for the print media using a combination of Adobe InDesign, Photoshop and Illustrator. Creation of a variety of complex and multi-page documents will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 110 and VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 266(3) Course ID: 005142
Advanced Photoshop
Develops advanced skills to digitally manipulate, enhance, and create composite photographs. Applies advanced principles, concepts, and techniques for graphic design and digital photography. Creation and manipulation of graphics for complex images and designs will be the focus of this course. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 160. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 270(3) Course ID: 005798
Acrobat Basics
Provides students with the basic skills using Adobe Acrobat to produce and utilize PDF documents. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

VCC 297(3) Course ID: 004489
Instructor Consent Required
Internship
Provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Internships do not receive compensation for their work. Co-Op/Internship: 3 credits (180 contact hours). Pre-requisite: Permission of Instructor.
Components: Co-Op Attributes: Technical

VCC 298(3) Course ID: 004463
Instructor Consent Required
Practicum
Provides supervised on-the-job work experience related to the student's educational objectives. Student participating in the Practicum do not receive compensation. Practicum/Internship: 3 credits (180 contact hours). Pre-requisite: Permission of Instructor.
Components: Practicum Attributes: Technical

VCM 110(3) Course ID: 004453
Fundamentals of Animation
Explores the fundamentals of 2-D animation through history, theory and practical application. Covers the basic concepts of animation, including: character design and development, character environment, and storyboarding. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

VCM 115(3) Course ID: 004452
2-D Animation
Introduces basic computer animation using industry standard software. Uses software to create 2-D animations for various multi-media functions. Students must receive a letter grade of "C" or better. Lecture: 1.0 credit (15 contact hours); Laboratory: 2.0 credits (75 contact hours).
Components: Lecture Attributes: Technical

VCM 125(3) Course ID: 015851
Foundations of Video Production
Introduces students to the basics of video production and animation. Includes screenwriting, storyboards, and planning a video production and animation project. Familiarizes students with video, lighting, and sound equipment. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

VCM 140(3) Course ID: 001762
Digital Video
Provides techniques for digital audio and video acquisition, equipment, and editing software. Emphasizes on planning and creating storyboards for digital video project from conception to final product. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCM 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCM 210(3) Course ID: 004344
3-D Animation
Introduces the principles of animation. Uses commercial 3-D animation packages and storyboards to produce 3-D models and animations. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCM 115. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (75 contact hours).
Components: Lecture Attributes: Technical

VCM 215(3) Course ID: 005143
After Effects
Introduces basic compositing techniques and motion graphics using Adobe After Effects. Emphasizes an understanding of pre-production for After Effects, green screen, lighting, key-framing, creating mattes, animating text, syncing to audio and exporting movies. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

VCM 220(3) Course ID: 001767
Webpage Design
Introduces students to principles and elements used in web design. Explores basic web design tools such as mark-up languages, cascading style sheet, and web authoring software. Identifies fundamentals including website layout, navigation, font usage, color schemes, and site structure to create visually-pleasing webpages. Students must receive a letter grade of "C" or better. Lecture: 1.0 credit (15 contact hours), Lab: 2.0 credits (75 contact hours/37.5:1 ratio).
Components: Laboratory, Lecture Attributes: Technical

VCM 225(3) Course ID: 005732
Advanced 3-D Animation
Familiarizes students with advanced techniques of computer animation. Covers the production of 3-D animations using advanced lighting and rendering tools, inverse kinematics, and dynamic scene elements. Students must receive a letter grade of "C" or better. Pre-requisite or Co-requisite: VCM 210. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical
Course Descriptions

VCM 230(3) Course ID: 004345
Advanced Webpage Design
Introduces aesthetic, navigational, accessibility, usability, and interactivity issues for web designers. Pre-requisite: VCM 220 with a grade of C or better or Consent of Instructor. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (75 contact hours). Components: Laboratory Attributes: Technical

VCM 240(3) Course ID: 004456
Advanced Digital Video
Emphasizes planning and creation of digital video projects through a non-linear editing environment is the focus of this course. Deploys audio/video content through various delivery systems. Students must receive a letter grade of "C" or better. Pre-requisite: VCM 140. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (75 contact hours). 37.5:1 ratio. Components: Laboratory, Lecture Attributes: Technical

VCP Visual Communications Printing

VCP 250(3) Course ID: 005795
Screen Printing
Includes how to identify and perform the proper methods of the operations of a screen printing process, including registration, placement, screen preparations, artwork preparations, and using inks and substrates to produce quality screen printed products to specification. Students must receive a letter grade of "C" or better. Pre-requisite: VCC 125 and VCC 166. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Technical

VCP 255(3) Course ID: 001508 Instructor Consent Required
Special Topics Lab
This course provides the student with additional hands-on experience. Topic will be specified by instructor. Laboratory: 3 credits (45 contact hours). Course may be scheduled a maximum of three times, with a total of 9 credit hours/150 clock hours. Pre-requisite: Permission of Instructor. Components: Laboratory Attributes: Technical

VCP 285(3) Course ID: 004536 Instructor Consent Required
Electronic Prepress
This is a capstone course designed to address the multiple applications of a Digital Production Artist in Visual Communication. Pre-requisite: Permission of Instructor. Laboratory: 3 credits (45 contact hours/30:1 ratio). Components: Laboratory Attributes: Technical

VET Veterinary Technology

VET 110(5) Course ID: 007425
Introduction to Veterinary Technology
Introduces students to veterinary medicine and technology through the lecture component covering hospital operation, professional standards, and ethics. Introduces the study of breeds and strains of domesticated animals and the basic concepts of animal behavior. Studies the nature and form of medicines and the calculation of dose and dosages. The lab component teaches and reinforces restraint techniques; lab procedures, equipment identification, medical terminology, and medication administration; and small animal nutrition. Co-requisite: AGR 240; BIO 112; BIO113. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 112(4) Course ID: 007426
Veterinary Microbiology
Examines the characteristics of microorganisms and their relationships to animal health and diseases. Introduces fundamental microbiological principles and laboratory techniques. Pre-requisite: BIO 112, BIO 113, and VET 110. Lecture/Lab: 4.0 credits (90 contact hours). Components: Lecture Attributes: Technical

VET 114(5) Course ID: 007427
Animal Anatomy and Physiology
Provides a functional integration of basic science and clinical information as it relates to animals in an integrated lecture and laboratory approach, employing the organ system approach, using domestic and laboratory animals as models to discuss anatomy and physiology. Utilizes preserved animal specimens, fresh and preserved, as well as skeletons and models, in the laboratory to reinforce course concepts. Pre-requisite: VET 110. Co-requisite: VET 112. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 120(2) Course ID: 007428
Clinical Practicum I
Provides practical experience in veterinary clinics and/or related facilities; students complete an average of approximately 12 hours of clinical practicum per week. Pre-requisite: VET 110, 112, and 114; Co-requisite: VET 130. Clinical: 2.0 credits (96 contact hours). Components: Clinical Attributes: Technical

VET 130(5) Course ID: 007429
Veterinary Lab Procedures I
Introduces the student to essential nursing skills, covers surgical nursing concepts, small and large animal medical nursing, aseptic technique, and surgical instrumentation. The lab component prepares the student to assist the veterinarian in performing surgery by introducing anesthesia and operation of the anesthesia machine and nursing procedures during the surgical process. Introduces radiographic procedures and covers dental prophylaxis, recognition of dental abnormalities, and charting. Pre-requisite: VET 110, 112, and 114; Co-requisite: VET 120. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 210(3) Course ID: 007430
Pharmacology
Introduces the major drug classifications, covers the use and control of drugs, measurements and conversion factors, and methods of drug action and interaction used in small and large animal practice. Pre-requisite: VET 120 and VET 130. Co-requisite: VET 220 and VET 230. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

VET 220(5) Course ID: 007431
Parasitology and Clinical Lab
Covers the study of internal and external parasites of companion, exotic, and farm animals. Life cycles, diagnostic protocol, control, and treatment of the most common parasites will be discussed. Familiarizes students with laboratory techniques performed in veterinary hospitals and clinics. Examination and testing of blood, feces, urine, and exudates are performed for diagnostic and prognostic purposes. Development of skills necessary to maintain a safe laboratory working environment, institute quality control programs, collect, process, store, and transport clinical biological specimens. Pre-requisite: VET 120 and VET 130. Co-requisite: VET 210 and VET 230. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 230(5) Course ID: 007432
Veterinary Lab Procedures II
Covers development, treatment, prevention, and control of infectious and non-infectious diseases. Develops skills in surgical nursing, anesthesia monitoring, critical care, emergency medicine, and radiographic techniques. Pre-requisite: VET 120 and VET 130. Co-requisite: VET 210 and VET 220. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 240(5) Course ID: 007433
Veterinary Lab Procedures III
Emphasizes lab animal care, advanced radiographic techniques, ultrasound, and clinical pathology, this course is a continuation of VET 230. Refine skills introduced in previous courses. Uses field trips to veterinary and research facilities when appropriate. Pre-requisite: VET 210, VET 220, and VET 230. Co-requisite: AGR 280 and VET 250. Lecture/Lab: 5.0 credits (135 contact hours). Components: Lecture Attributes: Technical

VET 250(5) Course ID: 007434
Clinical Practicum II
Provides practical experience in veterinary hospitals, clinics, and/or related facilities; students complete an average of 16 hours per week. Pre-requisite: VET 210, VET 220, and VET 230. Co-requisite: VET 240. Clinical: 5.0 credits (240 contact hours). Components: Clinical Attributes: Technical

VMI Volumetric Medical Imaging

VMI 200(4) Course ID: 005199
Sectional Anatomy & Pathology I
The anatomy of the human body will be examined through cross-sectional images from cadavers and CT/MR images. Emphasis will be placed on identifying anatomical landmarks and describing relative anatomical location with appropriate medical terminology. Topics will include: head, neck, spine, thorax, abdomen, pelvis, and upper and lower extremities. Some pathology will be introduced. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours). Pre-requisite: BIO 137 and BIO 139. Components: Laboratory, Lecture Attributes: Technical

VMI 201(4) Course ID: 006600
Sectional Anatomy & Pathology II
Continuation of Sectional Anatomy and Pathology I with an emphasis on pathology. Topics include oncology, orthopedics, angiography, and endoscopy. Case studies utilized to demonstrate anatomical location and identification of normal/pathologic tissue. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours). Pre-requisite: VMI 200. Components: Laboratory, Lecture Attributes: Technical

VMI 210(4) Course ID: 005201
Volumetric Medical Imaging I
Software-based course designed to introduce radiological computer post-processing. Mastery of basic functions enable students to perform reconstruction, segmentation, annotation and analysis of images. Data management and communication will be emphasized throughout the course. Lecture: 1 credit (15 contact hours). Laboratory: 3 credits (90 contact hours). Pre-requisite: VMI 200 or concurrent. Components: Laboratory, Lecture Attributes: Technical

VMI 211(4) Course ID: 005202
Volumetric Medical Imaging II
Continuation of Volumetric Medical Imaging I focusing on case studies and standard protocols. Students will complete an assigned case study and present it in class. Competency in advanced topics will include axial manipulations, animations and monitoring pathology. Health Insurance Portability and Accountability Act (HIPAA) compliance issues will be addressed. Lecture: 1 credit (15 contact hours). Laboratory: 3 credits (90 contact hours). Pre-requisite: VMI 201 or concurrent. Components: Laboratory, Lecture Attributes: Technical.
WLD Welding

WLD 100(2) Course ID: 004575
Oxy-Fuel Systems
A working knowledge of oxy-fuel identification, set-up, inspection, and maintenance; consumable identification, selection, and care; principles of operation; and effects of variables for manual and mechanized oxy-fuel cutting, welding, brazing principles and practices, and metallurgy. Shop safety and equipment use are also covered. Lecture: 2 credits (30 contact hours) Co-requisite: WLD 101 or Consent of Instructor.
Components: Lecture Attributes: Technical

WLD 101(2) Course ID: 004576
Oxy-Fuel Systems Lab
Manipulative skills necessary to weld and cut plate and pipe in all positions, as well as brazing, braze welding, and gouging. Lab: 2 credits (60 contact hours/30:1 ratio) Co-requisite: WLD 100 or Consent of Instructor.
Components: Laboratory Attributes: Technical

WLD 110(2) Course ID: 004605
Cutting Processes
A working knowledge of various cutting processes used by the welding industry. Will include, but is not limited to, safety, theory of operation, setup and operating techniques, troubleshooting and making minor equipment repairs, terms and definitions, identification, evaluation, repair and prevention of discontinuities of cut surfaces. Includes oxy-fuel cutting, plasma arc cutting, exothermic cutting, air carbon arc cutting, shielded metal arc cutting, and mechanical cutting process. Lecture: 2 credits (30 contact hours) Co-requisite: WLD 111 or Consent of Instructor.
Components: Lecture Attributes: Technical

WLD 111(3) Course ID: 004577
Cutting Processes Lab
Designed to provide the student with practical experience to become proficient in the use of various metal cutting processes. Safety, setup, and operating techniques are employed. Students will troubleshoot and make minor repairs to equipment. Students will also learn to identify, repair, and prevent recurrence of cut surface discontinuities. Processes shall include, but not limited to: OFC, PAC, AAC, and mechanical methods. Various materials will be used where appropriate. Lab: 3 credits (90 contact hours/30:1 ratio) Co-requisite: WLD 110 or Consent of Instructor.
Components: Laboratory Attributes: Technical

WLD 120(2) Course ID: 004600
Shielded Metal Arc Welding
Teaches students the identification, inspection, and maintenance of SMAW electrodes; principles of SMAW; the effects of variables on the SMAW process to weld plate and pipe; and metallurgy. Lecture: 2 credits (30 contact hours). Co-requisite: WLD 121 or Consent of Instructor.
Components: Lecture Attributes: Technical

WLD 121(3) Course ID: 004578
Shielded Metal Arc Welding Fillet Lab
Provides laboratory experiences in which the student acquires the manipulative skills to perform fillet welds in all positions. Lab: 3 credits (90 contact hours/30:1 ratio) Co-requisite: WLD 120 or Consent of Instructor.
Components: Laboratory Attributes: Technical

WLD 123(3) Course ID: 004599
Shielded Metal Arc Welding Groove with Backing Lab
Provides experiences in which students acquire the manipulative skills to do groove welds in all positions with backing. Laboratory: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 120 and 121 or Consent of Instructor.
Components: Laboratory Attributes: Technical

WLD 130(2) Course ID: 004579
Gas Tungsten Arc Welding
Identification, inspection, and maintenance of GTAW machines; identification, selection and storage of GTAW electrodes; principles of GTAW; the effects of variables on the GTAW process; and metallurgy. This course also teaches the theory and application of Plasma Arc Cutting. Co-requisite: WLD 131 or Consent of Instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

WLD 131(3) Course ID: 004580
Gas Tungsten Arc Welding Fillet Lab
Teaches the necessary manipulative skills needed to apply the Gas Tungsten Arc on various joint designs on plate with both ferrous and non-ferrous metals. Plasma Arc cutting included. Co-requisite: WLD 130 or Consent of Instructor. Laboratory: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 133(3) Course ID: 004581
Gas Tungsten Arc Welding Groove Lab
Teaches the method of operation and application of the gas tungsten arc welding process for welding groove welds in both ferrous and non-ferrous plate in all positions. Pre-requisite: WLD 130 or Consent of Instructor. Laboratory: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 140(2) Course ID: 004582
Gas Metal Arc Welding
Identification, inspection, and maintenance of GMAW machines; identification, selection, and storage of GMAW electrodes; principles of GMAW; and the effects of variables on the GMAW process. Theory and applications of related processes such as FCAW and SAW and metallurgy are also included. Lecture: 2 credits (30 contact hours).
Components: Lecture Attributes: Technical

WLD 141(3) Course ID: 004583
Gas Metal Arc Welding Fillet Lab
Teaches the practical application and manipulative skills of Gas Metal Arc Welding and the proper safety situations needed in this process. Both ferrous and non-ferrous metals will be covered, as well as various joint designs on plate in all positions. Co-requisite: WLD 140 or Consent of Instructor. Laboratory: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 143(3) Course ID: 004584
Gas Metal Arc Welding Groove Lab
Teaches the method of operation and application of the gas metal arc welding process for welding groove welds in both ferrous and non-ferrous plate in all positions using both short circuiting and spray transfer where appropriate. Pre-requisite: WLD 140 or Consent of Instructor. Laboratory: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 145(1) Course ID: 004586
Gas Metal Arc Welding Aluminum Lab
Teaches welding aluminum using the GMAW process. Fillets and groove welds are made in all positions in both plate and pipe. Short Circuiting and Spray transfers are used where appropriate. Pre-requisite: WLD 140 or Consent of Instructor. Laboratory: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 147(1) Course ID: 004585
Flux Cored Arc Welding Lab
Acquaints the student with the method of operation and application of the flux cored welding system. Pre-requisite: WLD 140 or Consent of Instructor. Laboratory: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 152(5) Course ID: 004441
Basic Welding B
An introduction to common cutting and welding processes used in industry. Theory, setup, operation, and related safety are applied. Lecture: 2 credits (30 contact hours); Laboratory: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory Attributes: Technical

WLD 161(1) Course ID: 004602
Submerged Arc Welding Lab
Designed to provide the student with a working knowledge of SAW set-up, maintenance, and consumable identification. Includes practice in basic SAW principles and techniques related to the field of study. Laboratory: 1 credit (30 contact hours/30:1 ratio). Pre-requisite: WLD 140 or Consent of Instructor.
Components: Laboratory Attributes: Technical

WLD 170(2) Course ID: 004587
Blueprint Reading for Welding
Provides a study of occupationally specific prints for welders. Advanced study of multi-view drawings, assembly drawings, datum dimensions, numerical control drawings, sheet metal prints, castings and forgings, instrumentation and control charts and diagrams, working drawings, geometric dimensioning and tolerancing and use of reference materials and books are included. Occupational specifics including welding drawings, symbols, joint types, grooves, pipe welding symbols, testing symbols and specification interpretations are stressed. Lecture: 2 credits (30 contact hours). Co-requisite: WLD 171 or Consent of Instructor.
Components: Lecture Attributes: Technical
WLD 171(3)  Course ID: 004588
Blueprint Reading for Welding Lab
Provides students with practice fabricating from a blueprint. Students will read and fabricate from detail prints, control distortion during fabrication, and follow the proper sequence in welding a fabricated part. Students will use welding symbols and study weld sizes and strengths. Lab: 3 credits (90 contact hours/30:1 ratio). Co-requisite: WLD 170 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 198(1 - 6)  Course ID: 004573
Welding Practicum
Consent Required
Special Topics in Welding
Various Welding Technology topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credit hours.
Lecture: Varies; Laboratory: Varies. Pre-requisite: Consent of instructor.
Components: Lecture
Attributes: Technical

WLD 220(2)  Course ID: 004589
Welding Certification
Provides the student with a working knowledge of certification encountered in welding. The student will start with developing a WPS, qualify the WPS, and qualify personnel. Documents used in welding certification are developed and used. Co-requisite: WLD 221 or Consent of Instructor. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

WLD 221(3)  Course ID: 004590
Welding Certification Lab
Provides students an opportunity to test on all types of welding for certification standards. Laboratory: 3 credits (90 contact hours/30:1 ratio). Co-requisite: WLD 220 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 225(3)  Course ID: 004591
Shielded Metal Arc Welding Open Groove Lab
Designed to build upon SMAW Plate Lab I & II. Offers the student the opportunity to advance skills in the practical aspects of vee-butt plate welding using SMAW. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 120 and 121 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 227(3)  Course ID: 004592
Shielded Metal Arc Welding Pipe Lab A
Teaches the required manipulative skills to arc weld pipe using mild steel electrodes in the 2G and 5G positions including proper pipe preparations, electrodes, safety precautions, and welding sequences. Fillet welds on pipe joints are also included in 2F, 2FR, 4F, and 5F positions. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 225 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 237(3)  Course ID: 004595
Gas Tungsten Arc Welding Pipe Lab B
Teaches the method of operation and application of the gas tungsten arc welding process for welding of both ferrous and non-ferrous pipe in 6G position. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 133 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 239(1)  Course ID: 005310
Orbital Tube Welding
Familiarizes students with the orbital weld system, basic setup, operation, and safety. Pre-requisite: WLD 130 & WLD 131 or Permission of Instructor. Laboratory: 1 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

WLD 240(2)  Course ID: 004596
Materials Technology
Provides the student with a working knowledge of materials used in welding. This class includes materials identification and classification. Metallurgy is included with a detailed analysis of physical, mechanical, and chemical properties. Introduces the student to the application of metallurgy to welding including preheat, interpass temperature, and post-weld heat treatment and their effects on welding and welding’s effect on them. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

WLD 245(3)  Course ID: 004604
Gas Metal Arc Welding Pipe Lab A
Acquaints the student with the operation and application of the Gas Metal Arc System for welding in 2G and 5G positions. Laboratory: 3 credits (90 contact hours/30:1 ratio). Co-requisite: WLD 143 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 247(3)  Course ID: 004597
Gas Metal Arc Welding Pipe Lab B
Acquaints the student with the operation and application of the Gas Metal Arc System for welding groove welds in pipe in 6G position. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 143 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 251(1)  Course ID: 004608
Welding Automation Lab
Provides the student a working knowledge and hands-on experience using automatic welding equipment such as robotic welding systems, bug-o systems, and automated GTA welding systems. Lab: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory
Attributes: Technical

WLD 253(1)  Course ID: 004607
Pipe Fitting and Template Development Lab
Provides experiences in pipe template development and job knowledge and experience with the techniques and tools used to field layout, cut, and fit the various pipe joints that are used in pipe trades. Lab: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory
Attributes: Technical

WMT 110(2)  Course ID: 002176
Technical Drawing and Blueprint Reading
Fundamentals of multiview and pictorial drafting techniques; and reading and interpreting architectural, furniture and cabinet drawings are the focus of this course. Students will apply blueprint reading skills by preparing materials and cutting lists for actual jobs.
Components: Lecture
Attributes: Technical

WMT 120(4)  Course ID: 002177
Wood Product Manufacturing
Fundamentals of wood processing and an overview of the secondary wood processing industry are covered in this course. The nature of wood, material selection, terminology, safe set-up, and operation of common woodworking equipment will be discussed. Each student will fabricate a wood product while being introduced to custom woodworking techniques, as well as mass production concepts related to product engineering.
Components: Lecture
Attributes: Technical

WMT 160(2)  Course ID: 002178
Wood Finishing
This course is an overview of contemporary spray finishing materials and processes for millwork assemblies. Each student will learn to set-up and troubleshoot a variety of common finishing systems while experimenting with finishing materials and supplies.
Components: Lecture
Attributes: Technical

WMT 198(2 - 4)  Course ID: 002179
Instructor Consent Required
Practicum
The practicum provides supervised work experience related to the student’s educational objective. Students participating in the practicum do not receive compensation. The course may be taken for 2 - 4 credits. Pre-requisite: Permission of the Instructor.
Components: Practicum
Attributes: Technical

WMT 199(2)  Course ID: 002180
Instructor Consent Required
Cooperative Education
Co-op provides supervised work experience related to the student’s educational objectives. Students participating in the cooperative education program receive compensation for their work. Pre-requisite: Permission of the Instructor, Co-Op: 2 credits (150 contact hours).
Components: Co-Op

WMT 230(2)  Course ID: 002184
Introduction to Panel Processing
An overview of the terminology, materials, processing equipment and related software utilized by panel processing manufacturers of residential and commercial case work. Emphasis will be placed on the design and fabrication of frameless cabinetry to the use of panel saws, edgebanders, CNC boring equipment and case clamp’s. Lecture: 2 credits (60 contact hours).
Components: Lecture
Attributes: Technical
WMT 240(4) Course ID: 002185
Cabinet Making Technology
This course is an overview of the cabinet and store fixtures industries. Emphasis will be placed on the design and construction of face frame as well as frameless (32mm) systems. Each student will plan and build a vanity, kitchen cabinet or store fixture which utilizes contemporary casework techniques. Pre-requisite: WMT 110 and WMT 120. Lecture: 4 credits (120 contact hours).
Components: Lecture

WMT 250(4) Course ID: 002186
Furniture Technology
Furniture design principles, structural considerations, joinery, fasteners, veneering, and use of specialized machines for complex operations are the focus of this course. Each student will plan and build a piece of furniture which includes at least one drawer, a door and some veneering. Pre-requisite: WMT 110 and WMT 120. Lecture: 4 credits (120 contact hours).
Components: Lecture

WMT 260(4) Course ID: 002187
Millwork Technology
Design of moulding, doors, and door frames; windows; stairs; and mantels are the focus of this course. Emphasis will be placed on construction principles, joinery, and fasteners for millwork assemblies. Each student will build one or more millwork items. Pre-requisite: WMT 110 and WMT 120. Lecture: 4 credits (120 contact hours).
Components: Lecture

WMT 270(2) Course ID: 002188
Moulder/Grinder Operation
This course is an introduction to the setup, operation, and maintenance of moulding and grinding equipment. The student will use tools, measuring devices and visual inspection techniques to insure quality to customer specifications. Students will set up and operate a moulder or plane, shape and groove woodstock. Students will read work tickets and examine the pattern shape to determine moulder setup procedure and type of woodstock to be cut. Pre-requisite: Permission of the Instructor. Lecture: 2 credits (60 contact hours).
Components: Lecture
Attributes: Technical

WMT 280(2) Course ID: 002189
Instructor Consent Required
Estimating
This course is an introduction to estimating costs and materials for wood products. Special emphasis will be placed on projecting material and labor costs for custom wood products as well as mass produced items. Pre-requisite: Permission of the Instructor. Lecture: 2 credits (60 contact hours).
Components: Lecture

WMT 290(4) Course ID: 002190
Instructor Consent Required
Advanced Wood Processing
This course is a capstone experience for advanced wood processing technicians involving the integration of computer aided design and world-class manufacturing of wood products. Pre-requisite: Permission of the Instructor. Lecture: 4 credits (120 contact hours).
Components: Lecture

WPP 200(3) Course ID: 002193
Workplace Principles
Workplace Principles examines the changing workforce and the skills needed to adapt to constantly changing demands and expectations. The course includes but is not limited to problem solving, teamwork, time management, and self-management skills. Job-seeking and job-retention skills are taught through the development of resumes and job search materials. Maximum benefit is received if this course is taken in the latter part of the student’s course work. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ZOO 293(3 - 6) Course ID: 005347
Applied Experiences in Zoo Technology
Provides experience working in a fully accredited zoological park and exposure to zookeeping with many facets of animal husbandry. Practicum: 3 - 6 credits (180-360 contact hours).
Components: Practicum
Attributes: Technical