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 clas-
sification may be required

Modular courses have four or more alpha characters
with the first three numbers representing the parent course,
e.g., BAS 160 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 repeatunder 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
involved 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
Pre-requisite: Sophomore standing (30 credit hours) or consent of 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 203(3) Course ID:005944
Financial Accounting-Accounting as an Information
System
Pre-requisite: Sophomore standing (30 credit
hours) or consent of instructor. Lecture: 1 credit (15
contact hours).
Components: Lecture

ACC 204(3) Course ID:005948
Financial Accounting-Long Term Assets and Long
Term Financing Activities
Pre-requisite: Sophomore standing (30 credit hours) or consent of
instructor ACC 201 and ACC 202 or equivalent.
Lecture: 1 credit (15 contact hours).
Components: Lecture

ACC 205(3) Course ID:005949
Cost Terms, Concepts, and Classifications
Pre-requisite: Sophomore standing (30 credit hours) or consent of
instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

ACH - Architectural Technology
ACH 100(3) Course ID:004679
Construction Documents I
This is the first course of a four-semester studio
sequence. Proper methods and fundamentals of
architectural construction documents and residential
construction will be introduced. Drafting conventions
utilizing basic hand drafting tools and computer-aided
drawing techniques will be studied. Lecture: 2 credits (30
contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Computer Literacy, Technical

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
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 and 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 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 drawing, modelconstruction and creative writing. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (30 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: Technical

ACH 198(1 - 3) Course ID:015866 Practicum in Architectural Technology

Provides supervised, on-the-job work experience related to the student's educational objectives; students who partecipate in the practicum do not receive compensation. Pre-requisite: Completion of a minimum of 12 hours in Architectural Technology (ACH) courses with a min. cumulative GPA of 2.0 in all courses. Practicum: 1.0 to 3.0 credits (40-120 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 new technologies in this process such as program analysis, applicable codes, construction materials and methods 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 their 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 design decisions made in the practice of architecture. Lecture: 3 credits (45 contact hours). Pre-requisite: ACH 110 and ACH200 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 MAT 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:004688 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

ACH 295(3) Course ID:004693 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 195 or consent of instructor. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**ACR 297(3) Course ID: 004699**

**Estimating Techniques**

Students investigate the factors affecting the cost of construction, labor productivity, materials, overhead and profit, including area and volume computations. Current methods of cost estimating will be applied. Pre-requisite: ACH 150 and MAT 125; or consent of instructor. Lecture: 2.5 credits (37.5 contact hours); Laboratory: 0.5 credits (7.5 contact hours).

**Components:** Laboratory, Lecture

**Attributes:** Technical

**ACR 298(3) Course ID: 004700**

**Computer 3D Modeling**

Students learn how computer hardware and software are used in preparing 3D architectural drawings and client-oriented presentations. Pre-requisite: ACH 150 and ACH 185 or consent of instructor.

**Components:** Lecture

**Attributes:** Technical

**ACR 100(3) Course ID: 000949**

**Refrigeration Fundamentals**

Introduces refrigerant piping and fundamentals of refrigeration including environmental issues associated with HVAC. Co-requisite: ACR 101. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**ACR 101(2) Course ID: 000950**

**Refrigeration Fundamentals Lab**

Introduces fundamentals of refrigeration including environmental issues associated with HVAC and refrigerant piping. Develops proper hands-on techniques in the servicing and troubleshooting of basic systems. Stresses proper use and care of tools, equipment, materials, and safety. Co-requisite: ACR 100. Laboratory: 2 credits (60 contact hours).

**Components:** Laboratory

**Attributes:** Technical

**ACR 102(3) Course ID: 000951**

**HVAC Electricity**

Introduces students to basic physics of electricity. Covers Ohm's law; measuring resistance, voltage, ohms, watts and amps; constructing various types of electrical circuits; selecting wire and fuse sizes; and troubleshooting an electric motor and motor controls. Co-requisite: ACR 103. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**ACR 103(2) Course ID: 000952**

**HVAC Electricity Lab**

Introduces students to basic physics of electricity. Provides for application of Ohm's law, and measurement of 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 motor controls. Co-requisite: ACR 102. Laboratory: 2 credits (60 contact hours).

**Components:** Laboratory

**Attributes:** Technical

**ACR 112(3) Course ID: 000953**

**Sheet Metal Fabrication**

The student will learn to make patterns and lay out and construct common sheet metal duct fittings. Co-requisite: ACR 113.

**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 and ACR 101) with a grade of C or greater. Co-requisite: ACR 200. 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 inefficient 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 performing 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**

Examines methods used to calculate heat load of commercial buildings. Introduces 5 design conditions, solar heat gain, ventilation, internal heat gains, psychometrics and distribution systems for airconditioning 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, checking, 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**

Examines 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 bothline and control voltage circuitry pertaining to these systems. 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 262. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical
ACR 293(2) Course ID:000971
Attributes: Technical
Components: Laboratory

ACR 290(3) Course ID:000998
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 292(2) Course ID:000973
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 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 281 or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

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).

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 277(3) Course ID:000008
Managerial Accounting Topics
The study of the uses of accounting information in managerial planning and control of organizations. Pre-requisite: ACO 202. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: 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: ACT 201 or ACT 101 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 281(3) Course ID:000013
Individual Taxation
The study of the theory and applications of federal and individual income taxes will be emphasized. Lecture: 3.0 credits. Pre-requisite: One semester of college accounting or consent of instructor.

Components: Lecture
Attributes: Technical

ACT 286(3) Course ID:000014
Financial Accounting Topics
Additional in-depth exposure to financial accounting procedures for classifying, recording, reporting, and disclosing; 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:000017
Corporate and Partnership Taxation
Emphasizes the study of federal and state tax laws applying to corporations, partnerships, and other entities. Pre-requisite: ACT 281 or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

ACT 177(0.6) Course ID:005240
Contractual and Legal Reporting Requirements
Practical and legal reporting requirements. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

ACT 177(0.8) Course ID:005241
Overview of Accounting for the Entrepreneur
Overview of accounting for the entrepreneur. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

ACT 196(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. Includes with salary computation and methods to compute Gross Payroll. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture

ACT 196(1.0) 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 196(3.0) Course ID:006119
Accounting for Payroll
Covers federal and state unemployment laws and accounting for payroll. Pre-requisite: ACT 1961. Lecture: 3 credits (45 contact hours).

Components: Lecture

ACT 196(4.0) 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 196(5.0) Course ID:006121
Computerized Payroll
Requires the student to complete a Computerized Payroll Simulation. Pre-requisite: ACT 1962 & 1963. Lecture: 5 credits (75 contact hours).

Components: Lecture

ACT 279(1) Course ID:015822
Computer Accounting Basics
Presents accounting concepts and principles for a...
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: Lecture 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 trouble shoot 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: Lecture Attributes: Technical

AET Aeronautics

AET 110(3) Course ID: 006516
Fundamentals of Aerodynamics/Private Pilot Ground School
Covers the fundamentals of aerodynamics, aircraft systems, aeronautical decision making (ADM), applicable federal regulations, flight planning and aeronautical charts, meteorology, flight navigation, and weight analysis. 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 credits (45 contact hours). Components: Lecture Attributes: Technical

AET 110(4) Course ID: 006538
Introduction to Lean Systems
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: 4.0 credits (75 contact hours). Components: Lecture Attributes: Technical

AET 112(3) Course ID: 006567
Advanced Features and Controls
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: 4.0 credits (75 contact hours). Components: Lecture Attributes: Technical

AET 114(4) Course ID: 006632
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: 4.0 credits (75 contact hours). Components: Lecture Attributes: Technical

AET 120(4) Course ID: 006636
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: 4.0 credits (90 contact hours). Components: Lecture Attributes: Technical

AET 130(3) Course ID: 006634
Industrial Sensors
Covers various types of industrial sensors and opto-electronic devices. Pre-requisite: AET 110 or Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours). Components: Lecture Attributes: Technical

AET 130(4) Course ID: 006635
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: 4.0 credits (90 contact hours). Components: Lecture Attributes: Technical

AET 140(4) Course ID: 006636
Advanced Circuit Analysis
Covers the production of electrical energy by alternative means to line voltage and current values, and application, inverter types and application, and battery charging and maintenance. Components: Lecture Attributes: Technical

AET 150(4) Course ID: 006637
Industrial Controls Electronics
Covers various types of industrial sensors and opto-electronic devices. Pre-requisite: AET 110 or Consent of Instructor. Lecture/Lab: 4.0 credits (75 contact hours). Components: Lecture Attributes: Technical

AET 150(4) Course ID: 006638
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: 4.0 credits (75 contact hours). Components: Lecture Attributes: Technical

AET 150(4) Course ID: 006639
Industrial Computer Architecture
Introduces the basic layout of industrial computers as preparatory course leading into the more advanced PLCs, including 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: 4.0 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, linear voltage amplifiers, waveform generators, comparators, activelimiters, and interfacing. Pre-requisite: AET 150 or Consent of Instructor. Lecture/Lab: 4.0 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: 4.0 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: 3.0 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 circuitry. Advances the use of solid state devices and system integration. Pre-requisite: AET 110. Lecture/Lab: 4 credits (50 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: 4.0 credits (75 contact hours).
Components: Lecture Attributes: Technical

### AET 260(4) Course ID: 006377
**Instructor Consent Required**
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: 4.0 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: 4.0 credits (75 contact hours).
Components: Lecture Attributes: Technical

### AFS 111(1) 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(2) Course ID: 005235
**Aerospace Studies II**
A course designed for development of advanced skills required to be a manager/leader, including leadership principles, 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

### 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 114(1) Course ID: 0052209
**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 125(3) Course ID: 005360
**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**
Introduces 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.
AGR 240(3) Course ID:000032
Introduction to Animal Science
Provides a detailed review 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 economics. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credits (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

AGR 250(3) Course ID:000033
Introduction to Plants/Crop Production
Familiarizes students with the basic principles and theories involved in field crop production. Provides an understanding of how crops are grown as a prelude to growing crops successfully. Covers pest and disease as well as plant disease and production. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

AGR 260(3) Course ID:007387
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 an introduction to sustainable agriculture and explores various weed control methods. Weed control and weed management practices involved in sustainable agriculture will be discussed. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AGR 270(3) Course ID:007388
Introduction to Organic Agriculture
Introduces students to the theories, practices, and policy of organic agriculture. Topics covered include the need for organic agriculture, fundamental principles, history, and practices of organic agriculture. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AGR 280(3) Course ID:007424
Livestock Management
Covers management practices involved in the production of swine, horses, cattle, sheep and goats. Emphasizes selection, reproduction, feeding, diseases, marketing, handling, and pasture control. Laboratory: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

AGS 115(3) Course ID:015713
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

AGS 125(3) Course ID:015714
Herbaceous Plant Production
Includes the identification, selection, requirements, care, and uses of herbaceous plant materials commonly found in food/agronomic production, including the scientific name and common pests. Annuals, perennials, bulbs, and grasses will be discussed. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

AGS 145(3) Course ID:015715
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 smartphones will be discussed. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

AGS 155(3) Course ID:015716
Greenhouse Production
Designed to introduce students to the concept of controlled environment growing and plant management. Pre-requisite: AGS 135 Herbaceous Plant Production. Lecture/Lab: 3.0 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AGS 175(2) Course ID:015717
Agriculture Marketing and Sales
Enables students to gain a fundamental knowledge of marketing and sales strategies, as they are directly related to the agriculture industry. A focus is placed on market research, management of your marketing, promotions, handling produce, packaging, distribution, customer relations and sales techniques. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

AGS 205(3) Course ID:015718
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 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

AGS 215(3) Course ID:015719
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: AGS 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

AGS 225(3) Course ID:015720
Fruit and Vegetable Production
Provides knowledge required for development of skills in the following areas: commercial vegetable production; variety selection; production methods; and pest control. Pre-requisite: AGS 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (75 contact hours).
Components: Lecture
Attributes: Technical

AGS 235(3) Course ID:015721
Field Crop Production
Gain an understanding of the major U.S. field crops with an emphasis on their growth requirements, development, uses, management, and physiology. Pre-requisite or Co-requisite: AGS 250 Intro to Plants/Crop Production. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

Course Descriptions
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 Plant/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

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 lifespan. 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.: 0 credit hours (30 contact hours).

Components: 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 anatomy. Includes dissection 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: Course Also Offered in Modules, Technical

AHS 120(1) Course ID:001517
Medical Terminology
Basic medical word techniques emphasizing anatomical, physiological and medical terms. 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. Emphasis is placed on 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 different 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

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

AIM 1001(1.5) Course ID:016583
Basic Safety in Manufacturing
Introduces basic manufacturing safety and ergonomic techniques. Pre-requisites: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture/Lab: 1.5 credits (30 contact hours).

Components: Lecture

AIM 1002(1.5) Course ID:016584
Manufacturing with Quality
Introduces basic quality and auditing techniques as well as basic statistical tools used in the manufacturing environment. Lecture/Lab: 1.5 credits (30 contact hours).

Components: Lecture
AIM 1101(1) Course ID:016585
Industrial Materials and Safety
Addresses safety in a traditional and CNC machining environment and introduces industrial materials and their properties. Pre-requisite: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture/Lab: 1.0 credits (20 contact hours)
Components: Lecture

AIM 1102(1) Course ID:016586
Metal Removal and Metrology
Introduces the science of measurement and metal removal fundamentals for various industrial processes and materials. Pre-requisites: AIM 1101, Lecture: 1.0 credit (20 contact hours)
Components: Lecture

AIM 1103(1) Course ID:016588
CNC Nontraditional Machining
Introduces different types of nontraditional machining and CNC (G and M) coding used to control nontraditional machining. Pre-requisites: AIM 1102 or consent of instructor. Lecture/Lab: 1.0 credits (20 contact hours)
Components: Lecture

AIM 1201(1) Course ID:016589
Introduction to Plastics
Introduces polymers and the plastic industry. Includes safety in the plastic manufacturing environment as well as the history of plastic polymers and industry advancements. Pre-requisite: Reading and math assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture: 1.0 credit (20 contact hours).
Components: Lecture

AIM 1202(1) Course ID:016590
Plastic Formulation and Design
Presents the different polymer formulations (polymerization) and applications. Discusses product considerations, design for manufacturability (DFM) and extrusion. Pre-requisite: AIM 1201 or Consent of Instructor. Lecture/Lab: 1.0 credits (20 contact hours)
Components: Lecture

AIM 1203(1) Course ID:016591
Plastic Molding Processes
Presents the industry standards and process techniques of thermforming, injection molding and laminating. Discusses different types of plastic resin and the proper handling and preparation for production. Pre-requisite: AIM 1202 or Consent of Instructor. Lecture/Lab: 1.0 credit (20 contact hours).
Components: Lecture

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 pneumatics 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: 4.0 credits (90 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 110(3) Course ID:005956
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 (67.5contact hours)
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 120(3) Course ID:005957
Equipment Installation
Focuses on the installation of electrical, hydraulic, and pneumatic industrial systems. Emphasizes motor installation, wiring, box selection, conduit preparation and installation, hydraulic/pneumatic systems, piping, controls, and various lifting and rigging techniques. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture/Lab: 3.0 credits (75 contact hours). (30:1 Ratio Lab).
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 130(4) Course ID:005958
Measurement and Instrumentation
Covers measurement and instrumentation concepts and applications, choice of proper instrumentation and calibration, manual and automated measurement processes. Pre-requisite: MT 120 or higher. Lecture/Lab: 4.0 credits (90 contact hours). (30:1 Ratio)
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 135(3) Course ID:007384
Industrial Refrigeration - I
Presents refrigeration fundamentals and associated components for individuals interested in safe, effective, and efficient maintenance and operation of industrial refrigeration equipment who may also be seeking RETA credentialing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AIT 160(1) Course ID:005961
Workplace Safety
Focuses on industrial safety practices. Includes personal safety and equipment, hazard recognition, and safeguards. Covers electrical safety procedures and hazardous materials. Emphasizes OSHA rules and regulations. Pre-requisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

AIT 190(2) Course ID:005651
Integrated Power Plant Operations
Introduces students to main components found within a fossil power plant. Provides in-depth study of followingsystems: 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. (Reading and Mathematics assessment scores above KCTCS developmental placement level or successful completion of prescribed developmental courses) OR instructor consent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 200(4) Course ID:005963
Process Management and Quality Control
Emphasizes project team organization. Introduces the following concepts: cycle time, production time, firstpass yield, and barrier identification. Introduces quality control including understanding acceptance criteria with tolerances, data collection, and data reporting. Pre-requisite: AIT 130 or Consent of Instructor. Lecture/Lab: 4.0 credits (90 contact hours). (30:1 Ratio Lab).
Components: Lecture
Attributes: Course Also Offered in Modules

AIT 210(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, coupling, 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: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 220(3) Course ID:006565
The Integrated Power Grid
Introduces students to types of power plants that are tied to the electric grid other than fossil powerplants. Provides overview 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 230(3) Course ID:006569
Integrated Power Plant Operations
Introduces students to main components found within a fossil power plant. Provides in-depth study of followingsystems: 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, and preparatory instruction for the Edison Electric Institute Examination. Pre-requisite: AIT 220 or Consent of Instructor. Lecture: 3.0 (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

AIT 235(3) Course ID:007385
Industrial Refrigeration - II
Offers a second level detailed presentation of primary components and systems utilized within industrial-refrigeration plants for individuals interested in safe, effective, and efficient maintenance and operation of industrial refrigeration equipment who may also be seeking RETA credentialing. Pre-requisite: AIT 135. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

AIT 240(4) Course ID:006573
Analysis of National Electrical Code Development and Structure
Prepares students to take examination for electrical license and employer testing through understanding of content contained in the National Electrical Code. Pre-requisite: Reading assessment score at level of RDG 20. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: 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 the fundamental architecture of programmable logic controllers as it pertains to industrial application and incorporates ladder logic principles, commonly used industry language, editing, program navigation and program analysis. Includes the fundamentals of 6-axis robotics including manual manipulation, execution of existing robotic program files, modification of target parameters, and safety interlocks. Pre-requisite: AIT1501 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: Varies by topic.
Components: Lecture
Attributes: Technical
A1T 299(4)
Course ID: 007386
Advanced Electromechanical Concepts
Introduces advanced concepts in electromechanical engineering. Includes advanced concepts in fluid power, motor controls, instrumentation, and automation controls. Required for students in the Advanced Integrated Technology program who want to pursue the Bachelor of Science Electromechanical Engineering Technology transfer agreement with Murray State University. Pre-requisite: AIT 1501 or consent of instructor. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical
A1T 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 exam 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
A1T 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 consent of instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 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 consent of AIT 1002 or consent of instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 1101(1)
Course ID: 006153
Electrical 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 credit (22.5 contact hours).
Components: Lecture
A1T 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 AIT 1001; or consent of instructor. Lecture/Lab: 2.0 credit (45 contact hours).
Components: Lecture
A1T 1200(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: 1.0 credit (25 contact hours).
Components: Lecture
A1T 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 piping systems, 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
A1T 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
A1T 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 credits (45 contact hours).
Components: Lecture
A1T 1302(2)
Course ID: 006159
Integrated Process Control
Covers measurement and instrumentation concepts and applications and introduces the concept of loop control 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: 2.0 credits (45 contact hours).
Components: Lecture
A1T 1400(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 1001 or consent of instructor. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture
A1T 1402(1)
Course ID: 006162
Basic Pneumatic Controls
Introduces the student to pneumatic speed control circuits. Uses air pressure regulators and flow controls to control cylinder speeds. Pre-requisite: AIT 100 or AIT 1003 or consent of the instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 1403(1)
Course ID: 006163
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 100 or AIT 1003 or consent of the instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 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 140 or AIT 1401 or consent of instructor. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture
A1T 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: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 1903(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: 1.0 credit (22.5 contact hours).
Components: Lecture
A1T 1901(1)
Course ID: 006562
Water and Steam Systems
Provides instruction in the main components and integration of water and steam systems within a fossil fuel power plant. (Reading and Mathematics assessment exam 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
A1T 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 exam 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
A1T 2001(2)
Course ID: 006167
Integrated Process Management
Provides instruction in the main components and integration of the power distribution of a fossil fuel power plant. (Reading and Mathematics assessment exam 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
A1T 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: 2.0 credits (45 contact hours).
Components: Lecture
A1T 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 exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses or consent of instructor. Lecture/Lab: 1.0 credits (45 contact hours).
Components: Lecture
A1T 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

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

Components: Lecture

AMT 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: AMT 1501 or Consent of Instructor. Lecture/Lab: 1.0 credit (22.5 contact hours).

Components: Lecture

AMT 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: AMT 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 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 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 Aviation Maintenance Technology

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 (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 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 system comparability. 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 111(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 112(1) Course ID:004359
Maintenance Forms and Records
Instruction in the use and completion of required forms and records 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 113(1) Course ID:004360
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 150 or GE 150 or Consent of Instructor.

Components: Lecture Attributes: Technical

AMT 205(1) Course ID:004363
Non-Metallic Structures
Provides instruction in the inspection, service, and repair of metal and composite aircraft structures, including laminated and honeycomb structures, plastic materials, interior furnishings and access openings. 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 211(1) Course ID:004366
Aircraft Finishes
Provides instruction in the identification, application, and inspection of aircraft finishing materials. 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 215(1) Course ID:004368
Instruction includes inspection of airframes to determine airworthiness. 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 223(1) Course ID:004370
Aircraft Landing Gear Systems
Inspect, check, service and repair landing gear, retraction systems, shock struts, bakes, wheels, tires, and steering system. Instruction provided by lecture, demonstration, and practical projects. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (80:1 ratio/45 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 225(2) Course ID:004477
Aircraft Electrical Systems
Checking, inspecting, troubleshooting and repair of aircraft electrical system and system components are included. Instruction is provided by lecture, demonstration, and practical projects. Lecture: 2 credits (60:1 ratio/120 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 229(1) Course ID:004372
Aircraft Fuel Systems
Checking, inspection, servicing, repair and troubleshooting fuel systems and components are covered. Types of fuels used in various aircraft. Discussion of the problems associated with fueling and various techniques infueling are included. Lecture: 0.5 credits (8 contact hours) Lab: 0.5 credits (30:1 ratio/45 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 231(1) Course ID:004373
Cabin Atmospheric Control Systems
Checking, inspection, servicing, repair, and troubleshooting of the heating, cooling, air conditioning,pressurization, and oxygen systems are included. 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, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 239(1) Course ID:004376
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, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 241(4) Course ID:004377
Turbine Engines
Construction, repair and overhaul of turbine engines is included. Lecture: 2 credits (30 contact hours) Lab: 2 credits (80:1 ratio/120 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 243(3) 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 are covered. Lecture: 0.5 credits (8 contact hours) Lab: 2.5 credits (45:1 ratio/120 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 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, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 275(1) Course ID:004384
Engine Cooling Systems
Inspection and repair of engine cooling systems are taught by reading assignments, worksheets, lecture, demonstration and practical projects. 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, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 279(1) Course ID:004385
Engine Exhaust Systems
Inspection and repair of engine exhaust systems components are taught by reading assignments, worksheets, lecture, demonstration and practical projects. 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, 111, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 281(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 credits (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 283(1) Course ID:004387
Fire Protection Systems
Inspecting, 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 credits (15:1 ratio/7 contact hours) Pre-requisite: AMT 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, and 112. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 285(2) Course ID:004388
Engine Electrical Systems
Repair of engine electrical system components, 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, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 287(1) Course ID:004389
Engine Ignition Systems
Operation, overhaul 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 (8contact 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, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 289(1) Course ID:004390
Lubrication Systems
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, and 113. All AMT courses must be achieved with a grade of C or greater.
Components: Lecture Attributes: Technical

AMT 297(1) Course ID:004391
Propellers
Inspection, checking, servicing, and repair of propeller operation, synchronization and ice control systems are included. Students will identify and select propeller lubricants, balance propellers, and repair propeller control.
APT 146(2)  
Course ID: 004543  
Process Applications  
Develops an understanding of how to control and operate processes. Includes work on real life situations simulating 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: APT108 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: 004454  
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 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).  
Components: Laboratory, 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).  
Components: Laboratory, Lecture  
Attributes: Technical  

APT 156(2)  
Course ID: 005337  
Power Plant Protection  
Develops an understanding of how 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. Provides an overview of the energy delivery system, personal responsibility in regard to personal safety and job requirements, familiarizes 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. Pre-requisite: APT 108 with a grade of C or greater. Lecture: 1 credit (15 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 personal safety and job requirements, prepares 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. Pre-requisite: APT 108 with a grade of C or greater. 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 overview of the energy delivery system, personal responsibility in regard to personal safety and job requirements, prepares 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. Pre-requisite: APT 108 with a grade of C or greater. Lecture: 4 credits (60 contact hours).  
Components: Laboratory  
Attributes: Technical  

APT 202(3)  
Course ID: 004454  
Federally Mandated Training  
Presents 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 204(1)  
Course ID: 004546  
Safety Skills Training  
Presents a fundamental knowledge of OSHA, EPA and DOT regulations as concerned with hazardous waste generators. This fundamental knowledge is necessary for process operations to qualify for hazardous response to incidents. The student will be trained in the required skills to qualify them for HAZWOPER Operations level response. The course studies include, but are not limited to: Hazcom, HAZWOPER Operations level, personal protective equipment, working at elevated heights, respirators, SCBAs, and specific hazardous materials. (This course will be presented in a semester format.) Pre-requisite: APT 148 with a grade of C or greater. Co-requisite: APT 202. Laboratory: 1 credit (60 contact hours/60:1 ratio).  
Components: Laboratory  
Attributes: Technical  

APT 251(2)  
Course ID: 001036  
Application of Process Operations  
Prepares the student to demonstrate a working knowledge of the application of the various components involved in process operations. Pre-requisite: Instructor Consent. Lecture/Lab: 2.0 credits (75 contact hours).  
Components: Lecture  
Attributes: Technical  

APT 258(3)  
Course ID: 005512  
Lineman Technology II  
Expands training in the use of and/or assembly of materials, tools, and equipment common to the electric utility industry. Provides pole top rescue techniques, Kilowatt Hour (KWH) meter reading, installation of overhead service, voltage testing, operation of bucket truck, splicing and other knowledge and skills typically required of intermediate-level apprentices. Pre-requisite: APT 159, APT 150, EET 150, EET 151. Co-requisite: APT 259. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  

APT 259(4)  
Course ID: 005513  
Lineman Technology II 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 load/unload and set poles, operate bucket truck and other hydraulic equipment, and perform tasks typically required of intermediate-level apprentices. Pre-requisite: APT 158, APT 159, EET 150, EET 151. Co-requisite: APT 258. Laboratory: 4 credits (240 contact hours).  
Components: Laboratory  
Attributes: Technical  

APT 281(2 - 3)  
Course ID: 001037  
Instructor Consent Required  
Special Problems in Applied Process Technologies  
Provides additional experience in identified areas of student’s need. The subject area and/or tasks must be approved by an assigned instructor. Must also have a component where the student is evaluated by an industry professional. Pre-requisite: Consent of Instructor. Discussion: 2.0 - 3.0 credits (45-135 contact hours).  
Components: Discussion  
Attributes: Technical  

APT 289(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-requisite: 1-6 credits (75-450 contact hours).  
Components: Co-op  
Attributes: Technical  

ARI Academic Related Instruction  

ARI 100(3)  
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 Art  

ART 100(3)  
Course ID: 004346  
Introduction to African Art  
Examines the arts of Africa, including sculpture, painting, pottery, textiles, architecture, altar arts, human adornment and performance art, on the basis of style, iconography, 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: Cultural Studies, AH - Arts and Humanities  

ART 103(3)  
Course ID: 000035  
Ancient Through Medieval Art History  
Surveys the historical development of art and architecture with primary emphasis on cultures of Egypt, Western Asia, Greece, Rome and Medieval Europe. Pre-requisite: English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s). Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities  

ART 106(3)  
Course ID: 000036  
Renaissance Through Modern Art History  
Survey of the historical development of Western art and architecture from the 14th century through the present. Pre-requisite: English and Reading assessment exam scores above the developmental placement level or the successful completion of prescribed developmental course(s). Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: AH - Arts and Humanities
### Course Descriptions

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>000086</td>
<td>ART 108(3) Introduction to World Art</td>
<td>Provides a basic overview of the study, language, history, and relevance of visual art from world cultures and designed primarily for non-art majors. Utilizes visually-enhanced lectures and may include departmental 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</td>
</tr>
<tr>
<td>000017</td>
<td>ART 205(3) African American Art</td>
<td>Investigates the theoretical, historical, psychological, and sociological foundations of African American art. Provides a critical examination of various historical and contemporary movements in African American art. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities</td>
</tr>
<tr>
<td>000621</td>
<td>ART 201(3) Ancient Art History</td>
<td>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 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</td>
</tr>
<tr>
<td>000057</td>
<td>ART 110(3) Drawing I</td>
<td>Introductions 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: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000047</td>
<td>ART 202(3) Medieval Art History</td>
<td>Examines the architecture, sculpture, painting, and related arts from the rise of Christianity to the Beginnings of the Renaissance. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities</td>
</tr>
<tr>
<td>000086</td>
<td>ART 203(3) Renaissance Art History</td>
<td>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. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: AH - Arts and Humanities</td>
</tr>
<tr>
<td>000086</td>
<td>ART 204(3) Modern Art History</td>
<td>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 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</td>
</tr>
<tr>
<td>0000086</td>
<td>ART 208(3) 2-Dimensional Design</td>
<td>Investigates design principles of balance, unity and variety, emphasis, and rhythm, and their application to a variety of art elements of art, including line, shape, value and color. Uses a variety of media. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>0000457</td>
<td>ART 210(3) Life Drawing</td>
<td>Introduces basic life drawing skills and concepts. Lecture: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000086</td>
<td>ART 211(3) School Art</td>
<td>Introductions to art and the teaching of art in the lower (1-2) elementary grades. Components: Laboratory, Lecture</td>
</tr>
<tr>
<td>0000462</td>
<td>ART 213(3) Ancient Art History</td>
<td>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 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</td>
</tr>
<tr>
<td>000017</td>
<td>ART 220(3) Painting I</td>
<td>Introduces advanced studio investigation of painting techniques and concepts. Projects in line, value, space and composition will be investigated through individual development of style and expression, with extensive use of figurative models. Pre-requisite: ART 110, Lab/Lecture: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000017</td>
<td>ART 221(3) Painting II</td>
<td>Includes advanced studio investigation of the technical and formal concerns of painting, including understanding of color theory, materials, paint application, and image making. Pre-requisite: ART 110 or Consent of Instructor Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000017</td>
<td>ART 222(3) Jewelry/Metals I</td>
<td>Provides an introduction to jewelry and metals, including design principles, technical issues and ethical considerations. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000017</td>
<td>ART 223(3) Jewelry/Metals II</td>
<td>Continues the development of techniques introduced in Jewelry/Metals I. Introduces new techniques and expands the use of materials and processes. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>000017</td>
<td>ART 224(3) Typography</td>
<td>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 Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>0000076</td>
<td>ART 225(3) African American Art</td>
<td>Introduces basic and advanced level ceramic techniques and concepts. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>0000076</td>
<td>ART 226(3) African American Art</td>
<td>Continues the development of techniques introduced in African American Art. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
</tr>
<tr>
<td>0000076</td>
<td>ART 227(3) African American Art</td>
<td>Provides an introduction to African American Art. Lecture/Lab: 3.0 credits (90 contact hours). Components: Lecture Attributes: Other</td>
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<td>Course ID</td>
<td>Description</td>
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<tr>
<td>ART 260(3)</td>
<td><strong>Sculpture I</strong>&lt;br&gt;Studio investigation of the technical and formal concerns of three-dimensional expression. Basic sculptural methods and practices will be explored in a variety of media. Pre-requisite: ART 110, ART 170. Lecture/Lab: 3 credits (90 contact hours). Components: Lecture Attributes: Other</td>
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<tr>
<td>ART 261(3)</td>
<td><strong>Sculpture II</strong>&lt;br&gt;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</td>
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<tr>
<td>ART 270(3)</td>
<td><strong>Printmaking I</strong>&lt;br&gt;Introduces the possibilities and potential of the printmaking media for generating fine arts images and ideas. 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</td>
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<tr>
<td>ART 271(3)</td>
<td><strong>Printmaking II</strong>&lt;br&gt;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</td>
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<tr>
<td>ART 280(3)</td>
<td><strong>Beginning Film Photography</strong>&lt;br&gt;Introduces black and white and color photography processes including the use of a camera and the darkroom. Stress theoretical and compositional aspects of photography as an art medium. Lecture/Lab: 3 credits (90 contact hours). Components: Lecture Attributes: Other</td>
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<tr>
<td>ART 281(3)</td>
<td><strong>Digital Photography I</strong>&lt;br&gt;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 &quot;digital darkroom&quot;. Lecture/Lab: 3 credits (90 contact hours). Components: Lecture Attributes: Other</td>
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<tr>
<td>ART 282(3)</td>
<td><strong>Digital Photography II</strong>&lt;br&gt;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</td>
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<tr>
<td>ART 289(3)</td>
<td><strong>Survival Skills for Artists</strong>&lt;br&gt;Introduces skills needed to attain a higher level of education and/or career in the visual arts. Explores the wording and formatting of credentials and statements. Covers the critical language of art, digital and print media, 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: 1.0 credit (30 contact hours). Components: Laboratory Attributes: Other</td>
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<tr>
<td>ART 298(1 - 3)</td>
<td><strong>Instructor Consent Required</strong>&lt;br&gt;<strong>Directed Studies in Art (Topic)</strong>&lt;br&gt;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</td>
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<tr>
<td>ART 301(1)</td>
<td><strong>Art Theory and Design</strong>&lt;br&gt;Provides a basic overview of art theory, philosophy, elements, and principles of design. Lecture: 1.0 credits (15 contact hours). Components: Lecture</td>
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<tr>
<td>ART 1002(1)</td>
<td><strong>Art Media and Critique</strong>&lt;br&gt;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</td>
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<tr>
<td>ART 1003(1)</td>
<td><strong>Introduction to Art History</strong>&lt;br&gt;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</td>
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<tr>
<td>ASC 106(3)</td>
<td><strong>Agricultural Animal Science</strong>&lt;br&gt;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</td>
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<tr>
<td>ASC Animal Sciences</td>
<td><strong>American Sign Language I</strong>&lt;br&gt;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: Other</td>
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<tr>
<td>ASC American Sign Language</td>
<td><strong>American Sign Language II</strong>&lt;br&gt;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 credits (15 contact hours). Components: Laboratory, Lecture Attributes: Other</td>
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<tr>
<td>ASL 101(3)</td>
<td><strong>American Sign Language III</strong>&lt;br&gt;Development of intermediate expressive and receptive ASL skills and cultural features of the language and community. Pre-requisite: ASL 102 with a minimum grade of C or permission of instructor. Components: Laboratory, Lecture Attributes: University Course (Eastern Kentucky University)</td>
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<tr>
<td>ASL 202(3)</td>
<td><strong>American Sign Language IV</strong>&lt;br&gt;Continued development of intermediate expressive and receptive ASL skills and cultural features of the language and community. Pre-requisite: ASL 201 with a minimum grade of C or permission of instructor. Lecture: 3 credits (45 contact hours). Laboratory: 0 credits (15 contact hours). Components: Laboratory, Lecture Attributes: University Course (Eastern Kentucky University)</td>
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<tr>
<td>AST 101(3)</td>
<td><strong>Astronomy</strong>&lt;br&gt;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</td>
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<tr>
<td>AST 155(3)</td>
<td><strong>Astrobiology</strong>&lt;br&gt;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: MT065 and ENCO91 or equivalent as determined by KCTCS placement examination. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: SN - Science</td>
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<tr>
<td>AST 191(3)</td>
<td><strong>The Solar System</strong>&lt;br&gt;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</td>
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<tr>
<td>AST 192(3)</td>
<td><strong>Stars, Galaxies and the Universe</strong>&lt;br&gt;Chains 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: MAT108 or a minimum ACT math score of 18. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: SN - Science</td>
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<tr>
<td>AST 195(1)</td>
<td><strong>Introductory Astronomy Laboratory</strong>&lt;br&gt;Focuses on skills and cultural features of the language and community. Includes Kepler’s Laws of Planetary Motion and Newton’s Laws of Motion. Examines the functions and limitations of different types of telescopes and mountings. Includes observation of the sun, moon, planets, binaries, galaxies, and nebulae. Pre-requisite or corequisite: AST101 or AST191 or AST192; MAT 865 or two years of high school algebra; consent of the instructor. Lab: 1.0 credit (15 Contact Hours). Components: Laboratory Attributes: SL - Science Laboratory</td>
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</tr>
</tbody>
</table>
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 (40.5 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 handling 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 108(3) Course ID:007117
Introduction to Aircraft Maintenance IV
Provides an understanding of basic hydraulic functions, the fabrication of tubing and flex hoses as well as shell comparability. Includes instruction in structural inspection, materials and fasteners, and repair methods. 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, metalal composite aircraft structures, including laminated and honeycomb structures, plastic materials, interfurishing 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

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 airplane and the rigging of primary structure 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 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 224(3) Course ID:007123
Aircraft Systems II
Covers checking, inspecting, troubleshooting and repair of aircraft electrical system and hydraulic 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, presurization, and oxygen systems; and rain and ice control and removal systems. Includes types of fuels used in various aircraft and a discussion of the problems associated with fueling and various fueling problems. 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 discussion, inspection, and troubleshooting of navigational and communication systems, fire detection and extinguishing systems. Covers the inspection, troubleshooting, and repairing of heading, speed, altitude, time, attitude, temperature, pressure and position indicating systems and installation of instruments. Provides the inspection, checking and servicing of speed and take-off warning systems, electrical brake controls, antiskid systems, and autopilot systems, and the pilot-static system, floating compass system and the gyroscopes 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 engines 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 248(3) Course ID:007129
Aircraft Powerplants IV
Includes construction, repair and overhaul of turbine engines. Covers the operation and inspection 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 V
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, propellergenerating 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 VI
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 magneto antignon 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 VII
Includes the inspection, checking, troubleshooting, servicing and repair of engine ice and rain control systems, heat exchangers, superchargers, carburetor air intake and induction manifolds. Covers the repair of engine electrical system components, and the installing, 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

233
Aircraft Powerplant Systems IV

Covers the operation, inspection, 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 (45 contact hours).

Components: Lecture
Attributes: Technical

AUT 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 credit hours (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 Operator License (GROL) and Radar endorsement exams. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Pilot Course, Technical

ATE 299(1 - 6) Course ID:004550
Instructor Consent Required
Selected Topics in Aviation Maintenance Technology: (Topic)
Various aviation maintenance issues, topics 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 06 credits. Lecture: varies. Laboratory: varies. Pre-requisite or Co-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 workoff 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
Develops 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 work off campus and work 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
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 (45contact 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
Presents the theory, component identification, application, operation, service and repair of advanced automotive ignition, fuel, and emissions systems, including related components. Lecture: 3.0 credits (45contact hours).

Components: Lecture
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 180(3) Course ID:001060
Automatic Transmission/Transaxle
Involves the study of the operating principles of rear and front wheel drive automatic transmissions and transaxes and the testing and diagnostic process. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
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 transaxes. 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
Students who participate in the practicum do not receive compensation. Pre-requisite: Permission of the Instructor.

Components: Co-op
Attributes: Technical

AUT 199(1) Course ID:001063
Instructor Consent Required
Cooperative Education Program
Provides students supervised on-the-job work experience related to the student's educational objectives. Students who participate in the Cooperative Education program receive compensation for their work. Pre-requisite: Permission of the Instructor.

Components: Co-op
Attributes: Technical

AUT 240(3) Course ID:001064
Computer Control Systems and Diagnosis
Provides 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(3) Course ID:006899
Hybrid and Electric Vehicle Technology Lab
Focuses on the theories, principles, and diagnosis relating to hybrid automobiles. Pre-requisite: ADX 120 and ADX 121 and ADX 260 and ADX 261. 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
Focuses on the theories, principles, and diagnosis relating to hybrid automobiles. 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: ADX 120 and ADX 121 and ADX 260 and ADX 261. 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
This course covers the basic aspects of framing, roofing, 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 carpet 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

AVN 111(3) Course ID:016447
Ground School Rotary Wing
Provides aeronautical knowledge necessary to prepare student pilots to successfully complete Federal Aviation Administration (FAA) Private Pilot written examination. Course completion standards require that the student successfully complete the Private Pilot Helicopter FAA written examination. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

AVN 112(4) Course ID:016448
Private Pilot Helicopter: Flight I
Provides first twenty-five dual and/or solo flight hours leading to FAA private pilot rotary wing certification using FAA approved flight training syllabus (Lab). A review of elementary flight operations including basic aircraft control, elementary radio navigation, air traffic control procedures, cross-country operations, and solo flight. Associated ground instruction includes a review of knowledge areas required for completion of the Private Pilot Certificate with helicopter rating. At the successful completion of this course the student will have gained the aeronautical knowledge and experience necessary to advance to Private Pilot-Rotary: Flight II Pre-requisite or Co-requisite: AVN 111 with C or better. Lecture/Lab: 4.0 credits (105 contact hours)
Components: Lecture 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 environment. 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

BAS Business Administration System
BAS 110(3) Course ID:016239
Worksheets in Business Applications
Focuses on the application of worksheet features to business practices. Provides students with the knowledge and skills necessary to apply worksheet enhanced functions to derive charts, graphs and tables to aid in analyzing business data. Provides students the opportunity to think critically and find solutions to realistic business problems through use of available data analysis tools. Pre-requisite: Computer Literacy or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

BAS 120(3) Course ID:008095
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: Technical

BAS 125(3) Course ID:016879
Social Media Marketing: Fundamental Concepts, Skills, and Strategies
Cultivates a basic to intermediate understanding of social media history, terminology, and concepts as they apply to the marketing and business sectors. Integrates a working knowledge of platform management and social media marketing strategy. Lecture: 3.0 credits (45 contact hours). Pre-requisite: Placement scores for college level coursework. Pre-requisite: Placement scores for college level coursework.
Components: Lecture Attributes: Technical

BAS 126(3) Course ID:016880
Social Media Marketing: Project Management and Implementation Strategies
Prepares students to create a comprehensive social media marketing campaign, applicable to any business organization. Learn intermediate social media strategies and best practices for engagement. Introduces the student to social media policy, procedure, and engagement guidelines that will explain how all stakeholders and groups in an organization should monitor and participate in social media interactions. Pre-requisite: BAS 125. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: 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 selling process including—prospecting, qualifying, presenting, answering objections, closing, and 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: 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, economic opportunity, and management principles. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

BAS 208(1) Course ID:016967
Small Business Management
Examines essential information regarding business and consumer laws for the small business, as well as identifies essential information to finance a small business. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture Attributes: Technical

BAS 209(1.5) Course ID:016968
Small Business Management
Identifies the essential information to prepare and maintain a small business plan. Examines essential information regarding accounting and financial records for a small business and marketing for a small business. Pre-requisite: BAS 200A or Consent of Instructor. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture Attributes: Technical

BAS 209C(0.5) Course ID:005295
Small Business Management
Identifies information essential to managing growth in a small business. Pre-requisite: BAS 209B or Consent of Instructor. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture Attributes: 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. Computer financial calculators, 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: 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. Demonstrates proper interviewing skills through mock
interviews. Course is offered on a Pass/Fail basis. Pre-requisite: (CIT 105 Introduction to Computers, Sophomore standing, or 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 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, Technical

BAS 274(3) Course ID:000108
Human Resource Management
Introduces basic methods of recruiting, selecting, training, compensating, and maintaining a productive workforce. Examines concepts of effective employee relations including collective bargaining, contract administration, and safety and health programs. Emphasizes techniques for systematic human resource planning and development of policies consistent with government regulations. Pre-requisite: BAS 160 and BAS 283 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules, 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 concept learned in courses required for credit. (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:000109
Principles of Marketing
Introduces marketing functions as it applies 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 283(3) Course ID:000110
Principles of Management
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: Course Also Offered in Modules, Technical

BAS 284(3) Course ID:000112
Applied Management Skills
Applies 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, teambuilding, 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 285(3) Course ID:000113
Problems in Marketing and Management
Demonstrates knowledge of theories and techniques in management and marketing with emphasis on the theoretical skills that managers need for success. Examines course topics which include: delegating, motivating employees, teambuilding, conflict management, coaching, and managing change. This is a capstone course. Pre-requisite: (BAS 282 and BAS 283) or taken concurrently. Lecture: 3.0 credits (45 contact hours).

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

BAS 287(3) Course ID:000114
Supervisory Management
Examines the roles and responsibilities of the supervisor, emphasizing 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: Course Also Offered in Modules, Technical

BAS 288(3) Course ID:000115
Personal and Organizational Leadership
Recognizes personal leadership skills that are essential for effective team and organizational guidance. Examine organizational leadership theories that promote personal and organizational goal setting, ethical management, time management, human relations, effective communication, and fundamental management concepts. Lecture: 3.0 credits (45 contact hours).

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

BAS 290(3) Course ID:005579
Managing Your Money
Introduces the student to basic financial planning concepts. Present fundamental concepts related to financial institutions, the banking system, capital market, 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 294(3) Course ID:005250
Money and Financial Institutions
Examines the business leadership-government-society interface, including the partnership, government, corporate, and social responsibility. Pre-requisite: (BAS 282 and BAS 283) or prior supervisory experience. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

BAS 295(3) Course ID:005251
International Finance
Examines the business leadership-government-society interface, including the partnership, government, corporate, and social responsibility. Pre-requisite: (BAS 282 and BAS 283) or prior supervisory experience. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

BAS 296(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 fundamental principles 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 1551(1) Course ID:016639
Selling as a Profession
Identifies career opportunities available in the four major employment areas of sales as well as positive contributions.
of selling in our market-oriented economy. Incorporates and considers the legal and ethical aspects of personal selling. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

**BAS 1552(1)** | Course ID: 016640
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Successful Selling and Other Special Selling Topics
Demonstrates important relationship building strategies. Research and describe the product, the producer, the competition and consumer buying behavior. Pre-requisite: BAS 1551. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

**BAS 1553(1)** | Course ID: 016641
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Dynamics of Selling
Covers and applies the basic steps in the selling process. Pre-requisite: BAS 1552. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

**BAS 1601(0.6)** | Course ID: 005145
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The Foundations of Business
Analyzes 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
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Business Ownership, Money, and Quality
Examines business ownership, monetary systems, and quality principles. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

**BAS 1603(0.6)** | Course ID: 005147
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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
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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
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Business Decision Making Tools
Identifies 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
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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
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Entrepreneurial Finance
Identifies current and essential strategies for financing small businesses. Pre-requisite: BAS 1701 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture

**BAS 1703(0.5)** | Course ID: 005252
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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
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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
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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
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Current Small Business Managerial Issues
Presents students with issues facing small businesses with an emphasis on entrepreneurship management. Pre-requisite: BAS 1705 or instructor consent. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture

**BAS 2121(0.5)** | Course ID: 006106
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Financial Statement Analysis
Presents 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(0.5)** | Course ID: 006107
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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
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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
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International Culture & Trade
Examines the importance and impact of the economic, cultural, and political environments on global business strategies and management processes. Pre-requisite: BAS 160 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

**BAS 2562(1)** | Course ID: 015765
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Global Trade & Foreign Investment
Examines the global trade 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
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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 2567(0.5)** | Course ID: 005814
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Foundations 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. It applies to state and federal regulations. Integrates basic legal terminology. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture

**AS 2672(0.3)** | Course ID: 005815
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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
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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
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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 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 information to implement, evaluate and control a small business marketing plan. Pre-requisite: BAS2825 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 the relationship 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 organizing 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 concepts 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 credit (7.5 contact hours).
Components: Lecture

BAS 2836(0.5) Course ID:005824
Special Concerns in Management
Explores 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
Applies strategies and theories of management to demonstrate the effectiveness of sound decision-making 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 follow 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
Demonstrates the importance of delegation and effective use of coaching or mentoring to provide constructively feedback to developing employees. Pre-requisite: BAS 2842. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

BAS 2844(0.6) Course ID:005828
Communication and Teamwork
Applies 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
Identifies the new responsibilities of the team leader with emphasis on competencies, 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 a variety of 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
Identifies principles of effective 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 2882(0.6) Course ID:005161
Self Management: Time, Stress, & Effective Change Techniques
Identifies management techniques and skills that provide leaders with the capabilities to maximize both personal and organizational effectiveness. 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 power 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 160 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 2891 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 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 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

BAS 2911(1) Course ID:016842
Introduction to Retailing
Explains the historical aspects of retail development and the impact mass merchandisers have on the retail environment. Examines current trends and influences on retailing. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

BAS 2912(1) Course ID:016643
Retailing Strategies and Store Management
Examines retail structure, store control, and decision-making in retail businesses. Examines the historical aspects of retail development and the impact mass merchandisers have on the retail environment. Examines current trends and influences on retailing. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

BAS 2913(1) Course ID:016730
Retail Management
Examines retailing environment. Examines current trends and influences on retailing. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
making. Identifies fundamental principles of store organization. Explains the social, legal and ethical responsibilities involved in retailing. Pre-requisite: BAS 2911. Lecture: 1 credit (15 contact hours).
Components: Lecture
BAS 2913(1) Course ID:016645

Merchandise Management
Demonstrates how to use appropriate merchandising and promotional tools. Identifies and explains thermographic and psychographic characteristics of the target market as well as the opportunities and risks in conducting business with foreign markets. Pre-requisite: BAS 2912. Lecture: 1 credit (15 contact hours).
Components: Lecture
BAS 2913(1) Course ID:016645

Introduction to HFC/Cable-TV
Introduces the basics of the HFC (Hybrid Fiber Coaxial) portion of the broadband industry. Focuses on primary areas: cable and wire - the design of the cables physically and electrically and how to splice them; printreading - construction drawings and system maps/circuit diagrams; station installation - installation of customer materials and equipment and teaching the customers how to properly use the equipment; basic troubleshooting - finding and repairing trouble in materials and equipment; processing requirements for various signals used in the HFC system and signal level meters and signal testing. Covers the transmission of voice and data signals and how they are transmitted to the subscriber and back to the central office. Includes troubleshooting and fault locating techniques used to repair and maintain subscriber equipment. Pre-requisite: MAT 065 or Equivalent Placement Level or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
BBT 100(3) Course ID:016694

Introduction to Cellular Technology
Introduces the world of wireless communications. Provides information to enhance an understanding of how we use radio frequencies to transmit signals, data, and voice over the airwaves. Provides information regarding how to correctly set up and troubleshoot a variety of equipment used in radio communications. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical
BEX 100(3) Course ID:001118

Basic Electricity 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 101
Components: Lecture
Attributes: Technical
BEX 101(2) Course ID:001119

Basic Electricity Lab for Non-Majors
This is a hands-on class designed to allow the student to use the concepts, principles, and theories covered in Basic Applied. Electricity for non-majors BEX 100. Co-requisite: BEX 100.
Components: Laboratory
Attributes: Technical
BEX 101(2) Course ID:001119

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
Attributes: SN - Science, Course Also Offered in Modules
BIO 112(3) Course ID:000127

Introduction to Biology Lab
Emphasizes basic laboratory studies of structure, function and interactions of living organisms including cell theory, genetics, energetics, evolution, and ecology. Pre-requisite: Co-requisite: BIO 112. Laboratory: 3 credits (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory, Course Also Offered in Modules
BIO 112(1) Course ID:005191

Introduction to Ecology Laboratory
Basic laboratory studies of interactions among living organisms and their environment including biomechanical cycling, trophic structures, sustainability and human impacts on the environment. Pre-requisite: Co-requisite: BIO 120 or BIO 124. Laboratory: 1 credit (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory
BIO 121(1) Course ID:000175

Introduction to Conservation Biology
Historical and current perspectives on species extinction and global loss of biological diversity represented. 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
Attributes: SN - Science
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
Attributes: SN - Science
BIO 130(3) Course ID:000170

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
Attributes: SN - Science
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: 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) and consent of instructor. Lecture: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: Other
BIO 135(4) Course ID:000169

Basic Anatomy and Physiology with Laboratory
Presents the fundamental structure of the human body and the physiological mechanisms involved in normal functioning are presented through lecture and student participation in laboratory activities. 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). Lab: 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 MAT065 or successful completion of the prescribed developmental course(s) or consent of the instructor. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: SL - Science Laboratory, SN - Science
BIO 139(4) Course ID:000174
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, 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 141(4) Course ID:000178
Botany with Laboratory
The anatomy, physiology, and biodiversity of plants emphasizing life processes, the cell, development, heredity, body systems, evolution, taxonomy, phylogeny and ecology. Includes laboratory studies of thermophoresis, 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: Laboratory, Lecture
Attributes: SL - Science Laboratory, SN - Science

BIO 144(3) Course ID:002215
Insect Biology
Presents an overview of the biology of both beneficial and detrimental insects including physiology, behavior, ecology, and evolution. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SN - Science

BIO 148(3) Course ID:016802
Introductory Biology I
BIO 148 introduces the student to the biological mechanisms operating at the molecular cellular and population level that contribute to the origin of maintenance and evolution of biodiversity including the origins and history of the evolutionary process. Course material is presented within a phylogenetic context emphasizing the shared history of all living organisms on earth through common ancestry. The first semester of an integrated one-year sequence (BIO 148 and BIO 152). Pre-requisites: Math ACT of 23 or above or MA 109, past or concurrent enrollment in CHE 105. (KCTCS equivalents: MA 109=MAT 150; CHE 105=CHE 170). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: University Course (University of Kentucky)

BIO 150(3) Course ID:000135
Principles of Biology I
Presents knowledge of biological principles at the cellular and molecular levels, similarities and differences in structure and function of simple and complex cells and theories on the origin and evolution of biological systems. Part one of a two semester sequence (BIO 150 and BIO 152). 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 (2 credits). Laboratory: 3 credits (45 contact hours). Pre-requisite: BIO 150 or consent of instructor.
Components: Lecture
Attributes: SN - Science

BIO 153(2) Course ID:000138
Principles of Biology Laboratory II
Includes organismal, population and community biology. Part two of a two semester sequence (BIO150 and BIO 152). Lecture: 3 credits (45 contact hours). Pre-requisite: BIO 150 or consent of instructor.
Components: Laboratory
Attributes: SL - Science Laboratory

BIO 155(1) Course ID:016428
Introductory Biology Laboratory
This course is designed to provide a broad introduction into the data, results, and information asociated with biological research, and into some of the analytical approaches used to test biological hypotheses. Communication of these aspects of biological research is crucial, and much of this lab course will be focused on the development of effective writing skills for the delivery of this information. Pre-requisite: Math ACT of 23 or above or MA 109, past or current enrollment in CHE 105 (KCTCS equivalents: MA 109=MAT 150; CHE 105=CHE 170). Laboratory: 1 credit hour (2 contact hours).
Components: Laboratory
Attributes: University Course (University of Kentucky)

BIO 155(3) Course ID:006342
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 inspace from a multidisciplinary perspective. Credit not available for both BIO 155 and AST 155. Pre-requisite: MT 065 and ENGR 191 or equivalent as determined by KCTCS placement examination. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Lecture Equivalents: AST 155

BIO 209(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 208/228 should be taken concurrently.
Components: Laboratory
Attributes: SL - Science Laboratory

BIO 218(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); Lab: 1.0 credit (30 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 geneticist's 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: SL - Science Laboratory, SN - Science, Course Also Offered in Modules

BIO 226(3) Course ID:000140
Principles of Microbiology
Introduction to fundamental microbiological 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). Laboratory: 2 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: SN - Science

BIO 227(3) 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 credits (60 contact hours).
Components: Laboratory, Lecture
Attributes: SL - Science Laboratory, SN - Science

BIO 229(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
Attributes: Other

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

BIO 1122(0.75) Course ID:006123
Cell Structure, Function, Energetics, and Cell Division
Covers basic studies of cell structure, function, energetics, and cell division. Pre-requisite: BIO 1121. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

BIO 1123(0.75) Course ID:006124
Classification System, Genetics, and Evolution
Covers basic studies of the classification system, genetics, and evolution. Pre-requisite: BIO 1122. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

BIO 1124(0.75) Course ID:006125
Ecology and Population Dynamics
Covers basic studies of ecology and population dynamics. Pre-requisite: BIO 1123. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

BIO 1201(1) Course ID:016844
Human Ecology Principles
Parent description: Interrelationships among humans, other organisms and the environment including principles of
BMT Biomedical Equipment Technology

BMT 100(1)
Course ID: 001131
Hazardous Risks Encountered by BMETs and Methods of Prevention
Emphasizes origin of hazardous occurrences within a healthcare setting encountered by Biomedical Equipment Technicians and the appropriate methods used to eliminate, reduce or avoid such occurrences. Addresses safety concerns associated with fire, medical gases, radiation, body fluids, microorganisms, devices, and people. Prerequisite: Reading assessment exam scores above KCTCS developmental placement level or successful completion of prescribed developmental courses. Pre-requisite or Co-requisite: AIT 100 or consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical

BMT 110(2)
Course ID: 001133
BMET Career Perspectives and Field Practices
Provides information on employment and career advancement opportunities as well as practices in support of a hospitality-wide safety program. Pre-requisite: BMT 100. Lecture/Lab: 2.0 credits (37.5 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BMT 120(4)
Course ID: 001135
Essentials of Analog and Digital Electronics for BMETs: Level 1
Emphasizes basic analog and digital devices and associated circuits as well as their use within medical equipment. Pre-requisite or Co-requisite: AIT 110. Lecture/Lab: 4.0 credits (75 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BMT 130(4)
Course ID: 005593
Essentials of Analog and Digital Electronics for BMETs: Level 2
Emphasizes advanced analog and digital devices and associated circuits as well as their use within medical equipment. Pre-requisite: BMT 120. Lecture/Lab: 4.0 credits (75 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BMT 140(4)
Course ID: 005594
Biomedical Instrumentation and Biophysical Measurements
Emphasizes biophysical signals and measurements obtained from the human body, their clinical significance, factors which may affect their appearance or numerical value, and the technology used to detect, process, display, and/or record such information. Pre-requisite: BMT 130 and BIO 135. Pre-requisite or Co-requisite: PH 171. Lecture/Lab: 4.0 credits (90 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BMT 210(1)
Course ID: 001138
Fundamental Engineering Design Principles Encountered in Medical Technology
Emphasizes a variety of engineering and scientific principles and their applications in the design and operation of medical equipment including pressure, fluid mechanics, thermodynamics, optics, and sound. Pre-requisite: PH 171 and (MT 125 or higher). Lecture/Lab: 1.0 credit (19 contact hours). (30:1 Ratio)
Components: Lecture
Attributes: Technical

BMT 215(4)
Course ID: 005966
Principles and Practices of Medical Equipment Maintenance and Management
Investigates key aspects of a Medical Technology Management Program. Emphasizes medical device service principles and practices including inspecting, testing, maintenance, calibration, and repairs. Pre-requisite: BMT 110. Co-requisite: BMT 230. Lecture/Lab: 4.0 credits (75 contact hours) (30:1 Ratio Lab).
Components: Lecture

BMT 230(3)
Course ID: 001140
Understanding, Maintaining, and Servicing Medical Equipment
Explores the purpose and functionality of various types of medical technology as well as their performance testing, maintenance, and management requirements. Emphasizes mechanical ventilators, anesthesiachines, hemodialysis machines, video endoscopy systems, and other imaging modalities such as digital radiography, fluoroscopy, and diagnostic ultrasound. Pre-requisite: BMT 130 or consent of instructor. BMT 210 and BMT 215. Pre-requisite or Co-requisite: BMT 110. Lecture/Lab: 3.0 credits (60 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BMT 240(3)
Course ID: 001141
Understanding, Maintaining, and Servicing Specialized Medical Equipment
Explores the purpose and functionality of various types of specialized medical technology as well as their performance testing, maintenance, and management requirements. Emphasizes mechanical ventilators, anesthesiachines, hemodialysis machines, video endoscopy systems, and other imaging modalities such as digital radiography, fluoroscopy, and diagnostic ultrasound. Pre-requisite: BMT 130 or consent of instructor. BMT 210 and BMT 215. Pre-requisite or Co-requisite: BMT 110. Lecture/Lab: 3.0 credits (60 contact hours). (30:1 Ratio Lab)
Components: Lecture
Attributes: Technical

BRX Blueprint Reading

BRX 110(2)
Course ID: 001146
Basic Blueprint Reading for Machinist
Basic applied math, lines, multi-view drawings, symbols, various schematics and diagrams, dimensioning techniques, sectional views, auxiliary views, threads and fasteners, and sketching typical to all shopdrawings are presented. Safety will be emphasized as an integral part of the course. Lecture: 2 credit hours (30 contact hours).
Components: Lecture
Attributes: Technical

BRX 112(4)
Course ID: 001147
Blueprint Reading for Machinist
Provides the student with a beginning and advanced series of lectures, demonstrations, and practice exercises in the study of prints. Safety will be emphasized as an integral part of this course. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

BRX 120(3)
Course ID: 001148
Basic Blueprint Reading
Includes basic applied math, lines, multi-view drawings, symbols, various schematics and diagrams, dimensioning techniques, sectional views, auxiliary views, threads and fasteners, and sketching typical to all shopdrawings are presented. Safety will be emphasized as an integral part of the course. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

BSE Building Science Engineering

BSE 150(5)
Course ID: 006667
Energy Auditor Preparation
Provides a scientific foundation upon which inspectors and auditors can build an accurate understanding of modern structures including an overview of technology, examples of typical installations and their defects, procedures for performing audits, and guidelines for analyzing potential retrofit solutions. Presents a balanced approach building performance to address energy efficiency, building durability, and human health. Lecture/Lab: 5.0 credits (90 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

BTN Biotechnology Laboratory Technician

BTN 100(4)
Course ID: 002777
Contextual Science with Laboratory
Introduces students to laboratory focused concepts and skills necessary for entry-level positions in biotechnology laboratory. Explores students to selected laboratory exercises that parallel the concepts introduced in BTN 103 and BTN 104. Pre-requisite: BTN 103, BTN 104. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture

BTN 101(1)
Course ID: 004277
Introduction to Biotechnology
Introduces current and future applications of biotechnology. Covers biotechnology career opportunities and bioethics. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Technical

BTN 120(1)
Course ID: 005631
Print Reading Fundamentals
Provides basic applied math, lettering, lines, multi-view drawings, title blocks, material lists and the drawing change system. Lecture: 1 credit (15 contact hours).
Components: Lecture

BTN 120(2)
Course ID: 005632
Drawing Views and Setup
Provides sketching, auxiliary and sectional views. Pre-requisite: (BRX 120 with a grade of C or better) or consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture

BRX Blueprint Reading

BRX 220(1)
Course ID: 016150
Basic Construction Prints
Provides a series of lectures, demonstrations, and practice exercises in the study of symbols, views, sections, details, and material lists found on architectural working drawings and construction dimensioning systems and measurements. Lecture: 1.0 credits. (15 contact hours).
Components: Lecture

BRX 220(2)
Course ID: 016151
Construction Blueprints
Provides a series of lectures and practice exercises in the study of symbols, views, sections, details, and material lists found on architectural working drawings, building materials and specifications lists, and charts/schedules. Pre-requisite: BRX 2201 or Consent of Instructor. Lecture: 2.0 credits (30 contact hours).
Components: Lecture

BSE Building Science Engineering
BTN 102(4)  Course ID:007077
Introduction to Biotechnical Engineering
Project Lead The VPA course in Biotechnical Engineering. Exposes students to the diverse fields of biotechnology including biomedical engineering, bio-molecular genetics, bioprocess engineering, as well as agro- and environmental engineering. Engages students in designing engineering problems related to biomechanics, cardiovascular engineering, genetic engineering, agricultural biotechnology, tissue engineering, biomedical devices, human interface, bioprocesses, forensics, and bioethics. Pre-requisite or Co-requisite: Successful completion of, or concurrent enrollment in, high school biology or chemistry course or equivalent; consent of instructor. Lecture/Lab: 4.0 credits (105 contact hours).
Components: Lecture Attributes: Technical
BTN 103(3)  Course ID:007278
Contextual Laboratory Language
Introduces students to basic scientific language and concepts of biotechnology. Academic study skills needed for success in bioscience courses will be emphasized. Covered topics parallel the concepts introduced in BTN 100 and BTN 104. Co-requisite: BTN 100 and BTN 104. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
BTN 104(3)  Course ID:007279
Contextual Laboratory Math
Introduces concepts of basic laboratory calculations emphasizing practical applications in biotechnology laboratories. Covered topics parallel the concepts introduced in BTN 100 and BTN 103. Co-requisite: BTN 100 and BTN 103. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
BTN 105(3)  Course ID:007346
Applied Laboratory Calculations for Biotechnology
Introduces concepts, techniques, and applications of common basic laboratory calculations that are routinely used in the biotechnology laboratory. Emphasizes application of basic computational concepts required of biotechnicians. Requires students to apply strategies to calculate amounts of chemicals required to make solutions, calibrate instruments, collect data, and interpret data. Introduces some computer applications. Pre-requisite: MAT 065 or equivalent as determined by KCTCS examination. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
BTN 106(3)  Course ID:007280
Fundamentals of Scientific Communication
Introduces methods and strategies necessary for written, oral, and visual communications as they are used in the professional arena. Lecture: 3.0 credits (45 contact hours).
Components: Laboratory Attributes: Technical
BTN 110(4)  Course ID:004984
Nucleic Acid Methods
Covers theory of DNA structure and function. Emphasizes laboratory skills in a variety of DNA manipulations. Pre-requisite: One 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 115(4)  Course ID:007347
Biomanufacturing
Surveys basic biomanufacturing principles and procedures designed to assure the quality and safety of a product as the manufacturing team moves the product down the biotechnology production pipeline. Includes a combination of lecture and laboratory activities. Emphasizes the role of government oversight and regulation during discovery, development, and manufacturing of bioproducts as outlined in the Good Laboratory and Good Manufacturing Practices (GLP and GMP) of the Food and Drug Administration (FDA). Pre-requisite: Completion of BTN 201 and BTN 202 with a grade of C or better, permission of program coordinator. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical
BTN 120(4)  Course ID:007348
Biofuels
Introduces students to combustion fuels made from nonrenewable sources, and includes topics on feedstocks, processing, utilization, and social impacts. Pre-requisite: Completion of BTN 201 and BTN 202 with a grade of C or better, permission of program coordinator. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical
BTN 125(2)  Course ID:007349
Bioinformatics I
Introduces the concepts and tools used in the application of information technology to the field of biology. Includes methods for data collection, storing and accessing, biological data, fundamentals of sequence alignment, biological molecule structure prediction, and data mining and analysis. Pre-requisite: Completion of BTN 201 and BTN 202. Lecture: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical
BTN 126(2)  Course ID:007350
Bioinformatics II
Applies concepts introduced in BTN 125 in the design and implementation of basic programming relating to bioinformatics problems. Emphasizes current trends in bioinformatics programming language, databases, and text mining and analysis. Pre-requisite: Completion of BTN 125 with a grade of C or better or permission of program coordinator. Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical
BTN 160(4)  Course ID:007351
Introduction to Agricultural Biotechnology
Introduces theory and methods relating to applications of biotechnology in agriculture. Emphasizes emerging agricultural biotechnology in the area of agricultural biotechnology including food and natural resource management. Explores plant and animal genetic engineering. Pre-requisite: BTN 201 and BTN 202 with a grade of C or better, permission of program coordinator. Lecture: 2.0 credits (30 contact hours), Lab: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical
BTN 201(4)  Course ID:00985
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:009485
Cell Culture and Function
Covers use of cell culture in modern biotechnological applications with emphasis on laboratory skills in avariety 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:009486
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 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 biotechnology under direction of the faculty. Maybe repeated for a maximum of six credits. Lecture varies with credit. Pre-requisite: Permission of instructor. Lab: 1.0 - 3.0 credits (30-90 contact hours).
Components: Laboratory, Lecture 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. Lecture: 0.5 - 8.0 credits (15-480 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 critical thinking. May be repeated for a maximum of 12 credits if topics and/or learning outcomes vary. Pre-requisite: Permission of instructor. Lectures: 1.0 - 3.0 credits (15-45 contact hours).
Components: Lecture Attributes: Technical
BTS Biomedical Technology Systems
BTS 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 according 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

BTS 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

BTS 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 (both with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 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 BTS 120. Addresses how to read electronic schematics and apply basic troubleshooting skills to circuits that utilize integrated-packaged devices and their 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

BTS 130(2) Course ID: 007228
Medical Equipment Management I
Presents medical technology management, principles and practices with regard to medical equipment assessment, planning, acquisition, acceptance, and replacement and disposal. Pre-requisite: BTS 100, BTS 110 and AIT 1101 (each with a grade of C or better). Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 140(1) Course ID: 007229
Science Principles Employed in Medical Technologies
Presents physical and chemical science principles that are incorporated into and used in medical 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

BTS 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 power systems, water and medical gas systems, nursecall systems, patient beds, sterilizers, infant incubators, 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

BTS 210(2) Course ID: 007231
Diagnostic Medical Equipment and Non-
Radiographic Imaging Modalities
Presents medical equipment and instrumentation used to assess biophysical 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 staff ongoing medical imaging 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

BTS 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, hematologic 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

BTS 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 assure 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: CITO 160. Pre-requisite or Co-requisite: CITO 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 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 tomography (CT) 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 equipment modalities 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, circuitdesign 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: BTS 270 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 280(2) Course ID: 007238
General Care Monitoring and Instrumentation
Presents various physiological parameters measured in low and mid-acuity situations typically encountered in ingenerial 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. Emphasis is given to various medical technologies including scales, thermometers, general electrocardiograph monitors, non-invasive blood pressure monitors, pulse oximeters, and spirometers. Pre-requisite: BIO 135, BTS 125, and BTS 140 (each with a grade of C or better). Pre-requisite Or Co-requisite: BTS 230. Lecture/Lab: 2.0 credits (37.5 contact hours).

Components: Lecture
Attributes: Technical

BTS 285(2) Course ID: 007239
Critical Care Monitoring and Instrumentation
Continues the presentation of various physiological parameters measured in mid and high acuity situations typically encountered in intensive/critical 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 230 (both with a grade of C or better). Pre-requisite or Co-requisite: BTS 250. Lecture/Lab: 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 200, BTS 220, and BTS 230 (each with a grade of C or better). Pre-requisite or Co-requisite: BTS 220, BTS 260, BTS 275, and BTS 285. Clinical: 2.0 credits (120 contact hours).

Components: Clinical
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 (90 contact hours).
Components: Laboratory, Lecture
Attributes: Course Also Offered in Modules, Technical

CAD 102(4) Course ID: 004052
Drafting Fundamentals
Exploring the fundamentals of drafting in the use of equipment through measurement of lines, angles, circles, arcs, and irregular curves; alphabet of lines; freehand sketching; geometric constructions; orthographic projection; characteristics of lines and planes; lettering; and dimensioning techniques. Lecture/Lab: 4.0 credits (90 contact hours).
Components: 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 application in conjunction with current computer technology. Introduces topics that include computer hardware and software, 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 interconnects 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, areacounting, 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, as well as for descriptive geometry in solving advanced problems. Includes application of principles and graphicstechniques of sectioning; techniques involved in oblique projections, axonometric projections, and perspective drawings; and dimensioning techniques and symbol usage common to all drafting disciplines. Pre-requisite: CAD102 with a grade of C or better or Approval of Instructor. Lecture: 4.0 credits (90 contact hours).
Components: 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 methodologies; 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: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 130(4) Course ID: 004057
Descriptive Geometry
Examines the spatial relationships between points, lines, and planes in various orthographic projections withgraphical 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 technique of drafting, layering, and symbols associated with one or more design applications, and calculate parameters, 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 withdrafting and design using parametric modeling software. Introduces principles and examples of parametric modeling and exploreassociative function and flexibility of concurrent part design. Lecture: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 210(4) Course ID: 004059
Industrial Drafting Processes
Explores weldment design, welding symbols, welding processes, and fabrication techniques, tool and die, and fixture drawings. Includes design specifications, pattern drawings, casting, forming processes, and mechanical drafting 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: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 216(4) Course ID: 016429
Building Information Modeling
Introduces Building Information Modeling (BIM), an intelligent model-based process that provides insight to the design, construct, manage buildings and infrastructure through three-dimensional models, and generate construction drawing sets. Creates structural elements for analytical purposes such as visualizations, drafting, and detailed design. Pre-requisite: CAD 120 with a grade of C or better or approval of the Instructor. Lecture: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 220(4) Course ID: 004068
Architectural Design
Introduces architectural design 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 interior/exterior views of student designs. Pre-requisite: CAD 120 with a grade of C or better or approval of the Instructor. Lecture: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 222(4) Course ID: 004061
Mechanical Design
Explores the design principles, mechanical adaptation, and drawing practices involved in the development o mechanical working drawings and the design principles in various manufacturing disciplines; gear drawing and design, and cam and follower design and drawing; mechanical assemblies, machine design, power transmission, 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: 4.0 credits (90 contact hours).
Components: 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: 4.0 credits (90 contact hours).
Components: 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: 4.0 credits (90 contact hours).
Components: 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: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 262(4) Course ID: 005185
Working Drawings
Prepares 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: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

CAD 291(2) Course ID: 004063
Special Problems
Special problems course. Allows the student to gain intermediate experience in their perspective fields through projects and task assignments provided by the instructor based on applications the student may one day experience as a professional. Set 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 coordinator. Pre-requisite: Permission of the instructor. Lab: 2.0 credits (60 contact hours).

Components: Laboratory
Attributes: Technical

CAR 292(4) Course ID:005186
Department Consent Required
Industrial Applications
Emphasizes the development of a portfolio of mechanical drawings specific to the occupational opportunities inspecific geographical locations. Focuses on various assignments and curriculum 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 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 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

CAR 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
Co-op 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 140(3) Course ID:001154
Surveying & Foundations
 Enables the student to become familiar with construction surveying methods, site layout procedures and materials used in the construction of foundation systems as well as discussion on the use of the buildertool, transit and laser levels. Covers the characteristics of concrete, excavation procedures, forming methods and material estimating. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

CAR 141(2) Course ID:001155
Surveying & Foundations-Lab
Familiarizes the student with construction surveying methods, site layout procedures and materials used in the construction of foundation systems as well as the application of the buildertool, transit and laser levels. Covers the application of concrete procedures, excavation procedures, forming methods and material estimating. Co-requisite: CAR 140, Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Technical

CAR 150(3) Course ID:001156
Concrete Formwork
Introduces the student to heavy and commercial concrete form construction methods. Covers information about concrete as a building material, rigging, concrete wall form systems, abovegrade floor systems, vertical piers and column form systems, on grade curb forms, horizontal beam forms, fireproofing encasement forms, stair forms, brick and deck forms. Lecture: 3 credits (45 contact hours).

Components: Lecture
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 form systems, abovegrade floor systems, vertical piers and column form systems, on grade curb forms, horizontal beam forms, fireproofing encasement forms, stair forms, brick and deck forms. Familiarizes student with OSHA construction standards on Concrete and Shoring, and Excavations. Co-requisite: CAR 150. Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Technical

CAR 190(3) Course ID:001158
Light Frame Const. I-Lab
Permits the student to practice floor, wall and stair framing 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: Lecture
Attributes: Technical

CAR 191(2) Course ID:001159
Light Frame Const. I-Lab
Permits the student to practice floor, wall, and stair framing 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 Const. II-Lab
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 roof 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, site safety practice of roofing truss systems, roof safety practice of roof truss systems, construction safety of roof truss systems, and site safety practice of roof truss systems. Co-requisite: CAR 196. Laboratory: 2 credits (60 contact hours).

Components: Laboratory
Attributes: Technical

CAR 198(1 - 6) Course ID:005344
Instructor Consent Required
Special Topics in Carpentry
Includes various Construction Carpentry Technology topics, issues and trends. Topics may vary semester by semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credits. Pre-requisite: Consent of Instructor. Lecture: 1.0-6 credits (15-90 contact hours). Laboratory: 1.0-6 credits (30-180 contact hours).

Components: Lecture
Attributes: Technical
CDH 110(3) Course ID:016830
Dental Health Communication Skills
Provides an overview of oral health communication, oral health literacy, and patient assessment interviewing skills for the Community Dental Health Coordinator. Emphasizes impact of oral health literacy on one's health. Includes communication strategies, verbal and nonverbal communication skills. Covers motivational interviewing, human behaviors, and health concepts emphasizing oral health. Incorporates patient assessment, feedback, education, and behavior change interventions for dental patients. Pre-requisite: Must be registered Dental Hygienist (RDH). Lecture: 3.0 credits (45 contact hours)
Components: Lecture Attributes: Technical

CDH 115(3) Course ID:016831
Dental Health Coordination, Documentation, Reporting, and Finance
Provides an overview of coordination, documentation, and reporting approaches for working with families as well as individuals. Includes family assessment, case documentation and overview of the services system. Covers healthcare finance, the referral process and components of case management. Pre-requisite: Must be registered Dental Hygienist (RDH). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CDH 125(2) Course ID:016832
Dental Health Teaching and Learning Skills
Provides an overview of teaching and learning skills as they apply to the Dental Health field. Includes teaching and learning techniques, goal setting and critical thinking. Covers internet usage and safety as well as an introduction to concepts of lifelong learning. Pre-requisite: Must be registered Dental Hygienist (RDH). Lecture: 2.0 credits (30 contact hours)
Components: Lecture Attributes: Technical

CDH 220(3) Course ID:016833
Prevention of Periodontal Disease
Covers education and procedures used in the prevention of periodontal disease. Includes soft deposits, calculus and identification of tissue changes as well as characteristics of the most common types of periodontal disease. Covers oral cancer treatment and use of sickle scalers for performing gross debridement. Prevents/scores/observing. Pre-requisite: Must be a registered Dental Hygienist (RDH). Lecture: 3.0 credits (45 contact hours)
Components: Lecture Attributes: Technical

CDH 245(3) Course ID:016834
Community Dental Health Coordinator Internship
Demonstrates practical application of the Community Dental Health Coordinator (CDHC) skills in a practicum setting. Includes knowledge and skills required to organize, develop and manage integrated dental care community-based clinics within practice standards. Pre-requisite: Must be a registered Dental Hygienist (RDH). Practicum: 6.0 hours (360 contact hours)
Components: Lecture Attributes: Technical

CET 210(3) Course ID:004705
Structural Analysis and Design
The course will cover building structures 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 students 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 layout, and topographic surveys. Students will perform real data research and evaluation, convert outdated 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: Lecture Attributes: Technical

CET 260(3) Course ID:004707
Hydrology and Drainage
Students will be introduced to the fundamentals of hydrology, including hydraulics of open and closed systems, water quality and drainage. Characteristics of pressures and flows in pipes, storm water runoff, culverts and ditch flow will be studied. Pre-requisite: ACH 180, ACH 225, and PHY 211, or consent of instructor. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CHE Chemistry
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: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

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: SL - Science Laboratory

CHEM Chemistry
CHEM 211(3) 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

CHEM 200(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

CHEM 203(1) Course ID:016154
Light Frame Construction III - Scheduling
Presents the concepts of interior and exterior finish methods and materials of installation. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CHEM 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

CHEM 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
CHE 130(4) Course ID:000236
Introductory General and Biological Chemistry
Presents the elementary principles of general, organic and biological chemistry. Pre-requisite: (AppliedMathematics 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: 1.5 credit (30 contact hours).
Components: Laboratory, Lecture
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 health fields.
Pre-requisite: Mathematics assessment exam scores with placement in College Algebra or higher OR successful completion of the prescribed pre-requisite course(s) for College Algebra or Equivalent with a grade of “C” or better OR successful completion of MAT 116 or MAT 110 with a grade of “C” or better.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, qualitative analysis, and quantitative 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 140 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 22) OR (College Algebra or higher with “C” or better) OR (CHE 130 OR CHE 140 with a grade of “C” or better) OR (CHE 160 with a grade of “P” OR (Appropriatescore on math or chemistry placement exam). Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 175(1) Course ID:000240
General College Chemistry Laboratory I
Reinforces concepts covered in CHE 170 and introduces basic laboratory techniques, methods, and instrumentation through selected experiments. Emphasizes both qualitative and quantitative techniques. Pre-requisite or Co-requisite: CHE 170. Laboratory: 1 credit (45 contact hours, 45:1 ratio).
Components: Laboratory
Attributes: SL - Science Laboratory, SN - Science
CHE 180(4) Course ID:000227
General College Chemistry 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 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 qualitative and quantitative 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:006680
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:006683
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 130 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
Introduces 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 160 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 credits (60 contact hours).
Components: Lecture
Attributes: SN - Science
CHE 280(3) Course ID:000232
Organic Chemistry Laboratory II
Explores 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:006175
Instructor Consent Required
Selected Topics in Chemistry: (Topic)
Presents a topic in chemistry chosen by the instructor. 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: 1-3 credits (15-45 contact hours).
Components: Lecture
CHE 295(1 - 3) Course ID:006176
Instructor Consent Required
Selected Topics in Chemistry Laboratory: (Topic)
Explores experiments pertinent to a topic in chemistry chosen by the instructor. 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. Laboratory: 1-3 credits (30-90 contact hours).
Components: Laboratory
CHE 299(1 - 3) Course ID:006177
Instructor Consent Required
Laboratory Research in Chemistry: (Topic)
Presents a research on a problem chosen by the instructor. 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. Laboratory: 1-3 credits (30-90 contact hours).
Components: Laboratory
CHE 320(0.75) Course ID:006126
Fundamentals
Introduces non-science majors to the fundamentals 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: 0.75 credit (11.25 contact hours).
Components: Lecture
Course Descriptions

CHE 1202(0.75) Course ID:0006127
Intro to Organic & Biochem
Introduces non-science majors to the fundamentals and applications of organic and biochemistry in society. Pre-requisite: 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. Pre-requisite: 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: 3.0 credit hours. Pre-requisite: CIS 130 or consent of instructor.

Components: Lecture Course Equivalents: CIT 234 Attributes: Course Also Offered in Modules, Technical

CIS 230(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 230(0.9) Course ID:005859
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 credit (13.5 contact hours).

Components: Lecture

CIS 230(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

CIS 230(0.3) Course ID:005851
Presentation Software Level 3
Uses advanced functions of presentation software. Includes working with complex presentations and the creation and preparation of data for distribution on the Web. Pre-requisite: (CIS 130 or CIS 1304) or consent of instructor. Lecture: 0.3 credit (4.5 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 skillsin touch typing; creating simple documents, slide shows and spreadsheets; using a course management system; using a search engine to find information on the Internet; initializing and using student email and onlinestudent services. This course does not fulfill the Digital Literacy requirement. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 105(3) Course ID:004710
Introduction to Computers
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: Digital Literacy, Course Also Offered in Modules, Technical

CIT 111(4) Course ID:006189
Computer Hardware and Software
Presents a practical view of computer hardware and client operating systems. Covers computer hardware components; troubleshooting, repair, and maintenance; operating system interfaces and management tools; networking components; computer security; and programming procedures. Pre-requisite: (CIT 105 AND MAT 055) OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours).

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

CIT 120(3) Course ID:004712
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 or Co-requisite: MAT 085 or (MAT 126 or higher) 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
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. Offers students the opportunity to play and analyze games facilitating discussion on game design and function. Completion of partial game design will occur. Pre-requisite: CIT105 OR MID 100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Course Equivalents: MID 124 Attributes: Technical

CIT 125(3) Course ID:006901
Intro to Digital Maps
Provides basic theories and concepts of geographical information systems including basic GIS capabilities, data analysis, data types, coordinate systems, cartography and mapping concepts. Introduces GIS software using industry-specific applications and technology to provide a conceptual base to build expertise in GIS. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 130(3) Course ID:004713
Productivity Software
Utilizes current word processing, spreadsheet, database, and presentation application software to solve common business problems. Covers basic features of each software application. Pre-requisite: CIT 105 OR OST 105 OR IMD 100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 140(3) Course ID:004714
JavaScript I
Provides students with an overview of the JavaScript scripting language. Includes coding, testing, and debugging JavaScript programs; using variables, operators, and data types; creating dynamic web pages using JavaScript; controlling the behavior of forms, buttons, and text elements; and using control structures, pattern matching, objects, and application scripts. Pre-requisite: CIT 120 AND (CIT 150 or CIT 155) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

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

CIT 141(3) Course ID:005037
PHP I
Explores the fundamentals of PHP, with emphasis on syntax, structure, and current usage. Includes dynamic generation of web pages, fluid forms, and web security. Pre-requisite: CIT 120 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 142(3) Course ID:005092
C++ I
Introduces students to fundamental programming concepts using the C++ programming language. Includes datatypes, control structures, simple data structures, error-handling, modular programming, and information 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:005247
C I
Introduces students to fundamental programming concepts using the C programming language. Includes datatypes, 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 144(3) Course ID:005190
Python I
Introduces students to fundamental programming concepts using the Python programming language. Includes datatypes, 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 Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 147(3) Course ID:004703
Programming I: Language
Introduces students to fundamental programming concepts using an industry-specific or emerging programming language. Includes datatypes, 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
Course ID:004716
Visual Basic ICT 148(3)
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-enabled server computing. Provides hands-on experience and some rudimentary programming in an Internet environment. Pre-requisite: CIT 105 OR Consent of Instructor. Pre-requisite Or Co-requisite: CIT 120. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, 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, socialnetworks, and web branding. 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: Lecture
Attributes: Technical

CIT 157(3)
Course ID:008905
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 105 OR Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 158(3)
Course ID:008906
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 operation. Helps students to be able to build simple LANs, perform basic configurations for routersand 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: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 160(3)
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 ConsentInstructor. Pre-requisite Or Co-requisite: CIT 111 OR Consent of Instructor Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

CIT 161(4)
Course ID:006906
Routing & Switching Essentials
Covers the architecture, components, and operations of routers and switches. Pre-requisite: CIT 160 OR Consent of Instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 170(3)
Course ID:004729
SQL I
Provides students with an extensive introduction to database management 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: Technical

CIT 171(3)
Course ID:004721
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+ exam. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

CIT 180(3)
Course ID:006191
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 182(3)
Course ID:006911
Attacks and Exploits
Provides information and skills necessary to understand the variety of attacks and exploits against computers and networking. 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 comprehensive introduction to information storage management. Examines the required technology essentials across all domains including server, storage, networking, applications, and databases to help develop a stronger understanding of virtualization and cloud computing. Pre-requisite: CIT 201 or CIT 203 OR Consent of Instructor. Lecture: 3.0 credits (45 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. Introduces the VMware ESXi servers and VMware vCenter server for creation and management of virtual machines, virtual switches and storage architectures including distributed resource scheduling, high availability, and fault tolerance. Satisfies the requirements for the Associate Data Center Virtualization (VCA-DCV). Pre-requisite: CIT 203 or Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 204(3)
Course ID:016721
VMware Optimize and Scale
Provides advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Utilizes techniques to optimize resources in a virtualized data center to support infrastructure as a service (IaaS) architectures. Satisfies the VMware Certified Professional/Data Center/virtualization (VCP-DCV) course requirement. Pre-requisite: CIT 203 and 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 advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Utilizes techniques to optimize resources in a virtualized data center to support infrastructure as a service (IaaS) architectures. Satisfies the VMware Certified Professional/Data Center/virtualization (VCP-DCV) course requirement. Pre-requisite: CIT 203 and 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 design 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 167 or Consent of Instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

CIT 210(4)
Course ID:004723
Connecting Networks
Covers the knowledge and skill needed to deploy 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 Equivalents: 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 161I)) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Course Also Offered in Modules, 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 storagetechnologies, 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 preppingstudents for various Microsoft certification exam series. Pre-requisite: (CIT 111 AND CIT 180 OR CIT 161I) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: 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 OR Consent of Instructor. 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 OR Consent of Instructor. 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 still 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 CIT 161I)] OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: 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 underlyingtechnologies required to support them. Includes design, installation, configuration, management, and troubleshooting of TCP/IP networks. Pre-requisite: (CIT 160 OR CIT 161) OR Consent of Instructor. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Integrated Laboratory, Integrated Lecture Course Equivalents: CIT 267 Attributes: Technical

CIT 221(3) Course ID:006916

Computer Graphics
Introduces basic computer graphics with an emphasis on graphics for game design. Instructs students in practical aspects of graphics such as color, ray tracing, raterazarization, shading, mapping, light, and shadow. Pre-requisite: CIT 105 OR IMD 100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Course Equivalents: IMD 221 Attributes: Technical

CIT 222(3) Course ID:016260

3D Modeling for Video Games
Instructs students in the use of industry-standard 3D modeling software specific to the video-game industry. Emphasizes both architectural and character modeling. Familiarizes students with the use of 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 221 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Course Equivalents: IMD 222 Attributes: Technical

CIT 223(3) Course ID:006917

3D Animation for Video Games
Exposes 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 producingcincuts, and preparing character assets for in-game motion. Allows students to acquire the necessary skills to integrate audio with their animations using basic sound engineering software and processes. 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 223 Attributes: Technical

CIT 225(3) Course ID:006918

GIS Data Analysis
Explores Geographical Information System extensions. Introduces and identifies popular advanced extensions used for image analysis, spatial analysis, and 3D analysis. Collection and analysis of field data utilizing GPS devices and data collection applications. Pre-requisite: CIT 125 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 of Information Systems
Introduces the sociotechnological aspects of information systems and their implications for organizations, as well as current topics and technologies associated with information systems. Emphasizes the Internet and web 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 Attributes: Technical

CIT 232(3) Course ID:006193

Help Desk Operations
Introduces a variety of tools and techniques to provide usersupport in help desk operations. Explores helpdesk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operationsand 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 Attributes: Course Also Offered in Modules, 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 Equivalents: 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 preparation 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 intergrate to form spontaneous websites and dynamic featurerich 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 I
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 and object types and structures, concurrency, file and data base processing, mobile computing, and otheradvanced topics. Pre-requisite: CIT 143 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 web site. 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 Web site. Pre-requisite: ((CIT 150 AND CIT 155 OR CIT 157) AND CIT 170 AND 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 multipurpose services on multiple platforms from installation to configuration, availability, and security. Requires hands-on experiences with web services. Pre-requisite: ((CIT 150 OR CIT 155 OR CIT 157) AND (CIT 214 OR CIT 219) AND CIT 219) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Attributes: Technical

CIT 257(3) Course ID: 008625
Applied Internet Technologies
Provides a framework of the content of the Internet Technologies Web Programming track into 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 263 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 design, install, configure, and troubleshoot cabling systems and equipment used to connect a local area network. Pre-requisite: CIT 160 OR CIT 161 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, 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: 008246
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 268(3) Course ID: 004731
Internet Protocols
Provides students with the knowledge and skills to install, configure, and manage troubleshooting internetworking TCP/IP and its associated protocols. Pre-requisite: (CIT 111 AND CIT 160) OR Consent of Instructor. Lecture: 3.0 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, 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

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-quality Game Design Document. Pre-requisite: CIT/IMD 124 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Course Equivalents: IMD 272 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 titled 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 true three-dimensional game development using an industry-specific or emerging programming language. 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
Introduces students to the knowledge and skills to design, develop, and implement distributed and Web applications using the Visual Basic programming language. Provides an in-depth study of networking technologies. Requires participation in class presentations, as well as individual and/or group projects involving Networking technologies. 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 Attributes: Technical

CIT 283(4) Course ID: 004738
Wide Area Network Design and Management
Provides students with the skills necessary to understand and apply advanced networking concepts. Covers WAN connectivity protocols such as PPP, ISDN, and Frame Relay, as well as advanced network management projects. Completes the final of four courses that prepares 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 Course Equivalents: CIT 212 Attributes: Technical

CIT 284(3) Course ID: 006929
Computer Forensics
Provides basic knowledge on methods and processes for computer forensics, intrusion detection, evidence collection,
disk imaging, and report writing. 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 285(3) 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 214 OR CIT 262) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

CIT 286(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 AND CIT 217) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

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 defense in-depth prevention systems. Pre-requisite: CIT 167 OR CIT 212 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours). Components: Lecture Attributes: Technical

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. Focuses on both the offensive 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/Lab: 3.0 credits (60 contact hours). Components: Lecture Attributes: Course Also Offered in Modules, Technical

CIT 289(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 Attributes: Technical

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 Attributes: Course Also Offered in Modules, Technical

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 Attributes: Technical

CIT 299(1 - 3) 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 Attributes: Technical

CIT 1051(0.5) Computer Basics Provides an introduction to the computer and the convergence of technology including 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) System and Utility Software 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) 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) 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 Provides basic use of application and programming software. Pre-requisite: RDG 20 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture

CIT 1111(0.8) Computer Hardware Essentials Provides a practical view of hardware components. Pre-requisite: (CIT 105 AND MAT 065) OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours). Components: Lecture

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

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

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

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

CIT 1201(1) Control and Data Structures Provides development and design basics to appropriately select control and data structures. Pre-requisite: CIT 1201 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Components: Lecture

CIT 1202(1) Computer Program Application Develop and design language-independent solutions, or computational thinking, to solve computer-related problems. Pre-requisite: CIT 1202 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Components: Lecture

CIT 1251(1) Intro to Projection Projections, coordinate systems and basic mapping software utilization are introduced. Pre-requisite: CIT 105 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours). Components: Lecture

CIT 1252(1) Intro to Publishing Maps Displaying data and publishing of information are explored. Pre-requisite: CIT 1251 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours). Components: Lecture

CIT 1253(1) GeoSpatial Data Data analysis, remote sensing and database manipulation. Pre-requisite: CIT 1252 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours). Components: Lecture

CIT 1301(0.8) Word Processing Applications Utilizes word processing application software to solve common business problems. Pre-requisite: CIT 105 OR OST105 OR IMD 100 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours). Components: Lecture

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

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

CIT 1401(0.6) JavaScript Basics Provides an overview of the JavaScript language. Introduces variables, operators, and data types. Pre-requisite: CIT 120 AND (CIT 150 or CIT 155) OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Components: Lecture
CIT 1421(0.6) Course ID:006988
C++ Overview
Introduces fundamental programming concepts using the C++ programming language. Pre-requisite: CIT 120 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

CIT 1422(0.8) Course ID:006899
C++ Control Structures
Introduces control structures for the C++ language. Identifies errors and code efficiency. Pre-requisite: CIT 1421 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

CIT 1423(0.8) Course ID:006990
C++ Functions
Introduces functions for the C++ language. Identifies errors and code efficiency. Pre-requisite: CIT 1422 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

CIT 1424(0.8) Course ID:006991
C++ Arrays and Pointers
Introduces arrays and pointers for the C++ language. Identifies errors and code efficiency. Pre-requisite: CIT 1423 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

CIT 1441(1) Course ID:016607
Python Overview
Introduces fundamental programming concepts (including data types and control structures) using the Python programming language. Pre-requisite: CIT 120 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1442(1) Course ID:016608
Functions and Data Structures
Introduces simple data structures, error-handling, modular programming, and file processing using the Python programming language. Pre-requisite: CIT 1441 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

CIT 1443(1) Course ID:016609
Python OOP Programming
Introduces object-oriented event-driven programming and graphical user interfaces using the Python programming language. Pre-requisite: CIT 1442 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

CIT 1491(1) Course ID:015653
Java Programming Structure
Introduces students to fundamental programming concepts using the Java programming language including datatypes, control structures, error-handling, and simple data structures. Pre-requisite: CIT 120 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1492(1) Course ID:015652
Java Object Oriented Design
Introduces students to fundamental programming concepts using the Java programming language to develop object-oriented and modular programming. Pre-requisite: CIT 1491 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1503(0.8) 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. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

CIT 1504(1) 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. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1551(1) Course ID:016715
Web Page Development Basics
Introduces web page design through the use of HTML and CSS. Emphasizes W3C web design and accessibility standards. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1552(1) Course ID:016716
Web Page Development Formatting
Uses text and/or web editors to create web documents with various formats and page layouts, multimedia, table/and forms. Emphasizes W3C web design and accessibility standards. Pre-requisite: CIT 1551 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

CIT 1553(1) Course ID:016717
Web Page Development Publishing
Implements web page design through the use of HTML and CSS. Emphasizes W3C web design and accessibility standards. Pre-requisite: CIT 1552 OR Consent of instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 1571(1) Course ID:016718
Website Design and Accessibility
Introduces web site production and design process. Pre-requisite: CIT 105 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours) Laboratory: 0.5 credit (15 contact hours).

Components: Laboratory, Lecture

CIT 1572(1) Course ID:016719
Website Design and Accessibility
Introduces web site design with particular emphasis on design involving layout, navigation, and interactivity. Pre-requisite: CIT 1571 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours) Laboratory: 0.5 credits (15 contact hours).

Components: Laboratory, Lecture

CIT 1600(1) Course ID:007000
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. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

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

Components: Lecture

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

Components: Lecture

CIT 1604(1) Course ID:007003
Network Tools and Security
Introduces tools used to troubleshoot and secure networks. Pre-requisite: CIT 1603 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

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 65 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 credit (6 contact hours).
Components: Lecture

CIT 1613(0.6) Course ID: 016320
OSI Layer Operations
Describes the functions and responsibilities of the various OSI model layers 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 simple LAN networks including 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 capabilities 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 085 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 networking 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
Provides concepts and techniques for troubleshooting errors and issues on a network. Pre-requisite: CIT 1622OR 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: 1.0 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 1632 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 design, architecture and components. Describes basic operations of switches including configuration and port security. Pre-requisite: CIT 161 OR Consent of Instructor. Lecture: 0.5 credits (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 static and default routing. Examines the role of the router and the routing tables in a network. Pre-requisite: CIT 161 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1674(0.6) Course ID: 016329
Routing Protocols & RIP
Describes dynamic routing protocols. Covers basic concepts and configuration of RIP-1 and RIP-2. Pre-requisite: CIT 1673 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1676(0.5) Course ID: 016330
RIP
Describes the operation and configuration of RIP protocols. Pre-requisite: CIT 1675 OR Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

CIT 1677(0.5) Course ID: 016331
OSPF
Describes the operation and 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 1678(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 1601(0.8) Course ID: 007017
Security Concepts
Introduces basic security concepts and methodologies. Assists in the preparation of the COMPTIA Security+ examination. Pre-requisite: CIT 160 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1602(0.8) Course ID: 007018
Threats and Vulnerabilities
Introduces threats and vulnerabilities in relation to computer and network devices. Pre-requisite: CIT 1601 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1700(1.6) Course ID: 007013
Database Concepts
Provides an overview of database and database management system concepts. Pre-requisite: (CIT 105 OR OST 1050 OR IMD 100) AND (MAT 085 OR MAT 126) OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 1701(0.6) Course ID: 007014
Database Modeling and Design
Provides an overview of database modeling and design, normalization, and network data models Pre-requisite: CIT 1701 OR Consent of Instructor. Lecture: 0.6 credits (15 contact hours).
Components: Lecture

CIT 1702(0.6) 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: 0.6 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 technologies 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 technologies 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: 1.0 credit (15 contact hours).
Components: Lecture

CIT 1801(0.8) Course ID: 007019
Security Concepts
Introduces basic security concepts and methodologies. Assists in the preparation of the COMPTIA Security+ examination. Pre-requisite: CIT 105 OR OST 1050 AND (CIT 160 OR CIT 161)) OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1802(0.8) Course ID: 007020
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

Course Descriptions

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CIT 1803(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 1804(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: CIT180 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
Introduces concepts about ethical hacking. Pre-requisite: CIT 180 or consent of instructor. Lecture: 0.8 credits (12 contact hours).
Components: Lecture

CIT 1842(1) Course ID:007026
Computer/Network Attacks
Introduces 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
Introduces the operation and configuration of advanced switching technologies in networks, including STP, RSTP and 802.1aggregation. Pre-requisite: CIT 167 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2091(1) Course ID:016595
Advanced Switching
Covers single- and Multi-area OSPF operation and configuration in both IPv4 and IPv6 networks. Pre-requisite: CIT 2091. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 2092(1) Course ID:016596
Single- and Multi-area OSPF
Provides concepts and skills for installing, 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 2121 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2121(1.2) Course ID:016722
WANs, PPP, and Frame Relay
Covers basic concepts such as TCP/IP addressing and subnetting. Provides concepts and skills for installing and setup Windows Server. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2121 OR Consent of Instructor. Lecture: 1.2 credits (18 contact hours).
Components: Lecture

CIT 2122(1.2) Course ID:016723
Configuring Connections
Covers advanced single- and Multi-area OSPF operation and configuration in both IPv4 and IPv6 networks. Pre-requisite: CIT 2092 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 2123(1) Course ID:016724
Securing Network Access
Provides concepts and skills for managing updates and local performance, monitoring system performance and network traffic. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2123 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2124(0.6) Course ID:016725
Network Design
Provides concepts and skills for managing updates and local performance, monitoring system performance and network traffic. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2124 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2131(0.6) Course ID:007029
Windows OS Installation & Setup
Provides concepts and skills for managing updates and local performance, monitoring system performance and network traffic. 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 2132(0.6) Course ID:007030
Network Connectivity
Provides concepts and skills for managing updates and local performance, monitoring system performance and network traffic. 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 2133(0.6) Course ID:007031
Windows OS Resources
Provides concepts and skills for managing updates and local performance, monitoring system performance and network traffic. 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 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. 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 2135(0.6) Course ID:007033
Monitoring Windows Systems
Provides concepts and skills for configuring updates and local performance, monitoring system performance and network traffic. Assists in the preparation of exams in the Microsoft certification exam series. Pre-requisite: CIT 2135 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

CIT 2141(1) Course ID:007096
OS Server Concepts
Introduces the operation and configuration of Access Control Lists (ACL) and Virtual Private Networks (VPN) in a complex network. Enables students to successfully configure network devices to implement security on networks. Pre-requisite: CIT 2092 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

CIT 2142(1) Course ID:007097
Server Management Services
Provides concepts and skills for installing, 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 2142 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2143(1) Course ID:007098
Server Role Policy
Provides concepts and skills for installing, 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 2143 OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

CIT 2151(0.75) Course ID:016337
Initial Server Deployment
Provides concepts and skills for installing, 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 2151 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 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 in an enterprise level. Pre-requisite: CIT 2151 OR Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Contact Hours</th>
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<td>CIT 2153</td>
<td>Administering the Domain</td>
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<tr>
<td>CIT 2154</td>
<td>Advanced Administration Topics</td>
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<tr>
<td>CIT 2181</td>
<td>Advanced Active Directory</td>
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<tr>
<td>CIT 2182</td>
<td>Server High Availability</td>
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<tr>
<td>CIT 2183</td>
<td>Disaster Recovery &amp; AD Services</td>
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<td>Intro to UNIX/Linux</td>
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<td>Accounts, Resources, &amp; Editors</td>
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<td>File Processing and Lab</td>
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<td>User End Support</td>
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<td>Database Queries and Tables</td>
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<td>Mobile Apps &amp; Adv. Functions</td>
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<td>Java Type Theory and Classes</td>
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<td>CIT 2284</td>
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**Course Descriptions**

- **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 adatabase-driven web site. Pre-requisite: CIT 2152 or Consent of Instructor. Lecture: 0.75 credits (11.25 contact hours).

- **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).

- **Advanced Active Directory**
  - Covers the advanced configuration tasks necessary to deploy, manage, and maintain a Windows Server environment, including advanced network and file services. Helps prepare students to implement a core Windows Server 2012 infrastructure in an enterprise environment. Pre-requisite: CIT 214. Lecture: 1.0 credits (15 contact hours).

- **Server High Availability**
  - Covers the advanced configuration tasks necessary to deploy, manage, and maintain a Windows Server environment, including Dynamic Access Control, network load balancing, and Failover Clustering. Helps prepare students to implement a core Windows Server 2012 infrastructure in an enterprise environment. Pre-requisite: CIT 2161 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

- **Disaster Recovery & AD Services**
  - Covers the advanced configuration tasks necessary to deploy, manage, and maintain a Windows Server environment, including disaster recovery, certificate services, and identity federation. Helps prepare students to implement a core Windows Server 2012 infrastructure in an enterprise environment. Pre-requisite: CIT 2162 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

- **Intro to UNIX/Linux**
  - Introduces basic Unix/Linux concepts. Pre-requisite: (CIT 111 AND CIT 160) OR Consent of Instructor. Lecture: 0.6 credits (12 contact hours).

- **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).

- **File Processing and Lab**
  - Introduces commands and scripts for file processing. Pre-requisite: CIT 2172 OR Consent of Instructor. Lecture: 0.4 credits (6 contact hours). Lab: 1.0 credit (30 contact hours).

- **Spatial Analysis**
  - Georeferencing and digitization will be mastered. Pre-requisite: CIT 125 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).
Distributed Application Design

Provides students with the knowledge and skills to design, develop, and implement Web client application using the Visual Basic programming language. Includes advanced application and user interface design, and custom libraries. Pre-requisite: CIT 2531. Lecture: 1 credit (15 contact hours).

Components: Lecture

CIT 2533(1) Course ID:018346
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 213 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 2631(0.75) Course ID:007101
Dir Services Group Policy

Explains how to configure group policy settings to manage directory services such as users, desktop environments, software, and security settings. Pre-requisite: CIT 2612 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 2781(1) Course ID:016626
Distributed Application Design

Provides students with the knowledge and skills to design, develop, and implement Web client application using the Visual Basic programming language. Includes advanced application and user interface design, and custom libraries. Pre-requisite: CIT 248 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 2782(1) Course ID:016627
Active X Data Objects

Provides students with the knowledge and skills to design, develop, and implement Web client applications using the Visual Basic programming language. Includes ActiveX Objects and stored procedures. Pre-requisite: CIT 2781 OR Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 2783(1) Course ID:016628
Security & Distributed Apps

Provides students with the knowledge and skills to design, develop, and implement distributed Web client applications using the Visual Basic programming language. Includes distributed applications. Pre-requisite: CIT 2752 OR Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

CIT 2841(0.6) Course ID:007040
Computer Forensics Overview

Provides a computer forensics overview and presents concepts about forensics investigation. Pre-requisite: CIT 180 or consent of instructor. Lecture: 0.6 credits (9 contact hours).

Components: Lecture

CIT 2842(0.4) 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, 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 offensive 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

CIT 2911(1) Course ID:007106
Project Management Concepts

Introduces basic project management and systems analysis concepts. Pre-requisite: 36 hours of CIT courses OR Consent of Instructor. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

CIT 2912(0.8) Course ID:007107
Project Planning

Applies acquired techniques, knowledge, and skills to successfully analyze, design, and plan a CIT project. Pre-requisite: CIT 2911 OR Consent of Instructor. Lecture: 0.8 credits (12 contact hours).

Components: Lecture

CIT 2913(0.6) Course ID:007108
Project Implementation

Applies acquired techniques, knowledge, and skills to successfully implement a CIT project. Pre-requisite: CIT 2912 OR Consent of Instructor. Lecture: 0.6 credits (9 contact hours).

Components: 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.

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(3) 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. Laboratory: 3.0 credits (90 contact hours).

Components: Laboratory

Attributes: Technical

CMM 114(6) Course ID:001814
Fundamentals of Machine Tools

Provides the basic principles 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 include: drill presses, power saws, measurement instruments, mills and lathes. Lecture: 1.0 credits (15 contact hours). Lab: 5.0 credits (150 contact hours/30:1 ratio).

Components: Laboratory

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
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, Lecture
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 give them a complete picture of the machining 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. 1.0credit (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 set up 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:005088
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 Metallurgy
Introduces the Machinery’s Handbook as a reference source for solving manufacturing problems and provides 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
Prepares mold-making including thermoplastic and thermosetting materials, compression mold, transfer mold, injection molding 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
Prepares basic die making including die sets, punch presses, blanking dies, piercing dies, screw and dowelhinges, punch and punch blocks, die life, bending dies, pilots, die block construction, stock strippers, stockguides, progressive dies, stock stops 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 benchwork. Applies knowledge to a tool and die environment. Introduces the basic power equipment and machine tool used in a tool and die shop. Lab: 4.0 credits (120 contact hours).

Components: Laboratory
Attributes: Technical

CMM 201(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 milling machine operations that simulate industry standards. Pre-requisite: ((CMM 122 or CMM 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, punch forms and anode of cylindrical grinder ID and OD and angular grinding on die and mold components. Pre-requisite: (CMM 210 with a grade of C or greater) or Consent of Instructor. Lecture: 2.0 credits (30 contact hours). Laboratory: 6.0 credits (180 contact hours).

Components: Laboratory, Lecture

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 the 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: 4.0 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 acyclindrical grinder. **National Standards require EDM and cylindrical grinder training. Those program lacking this equipment can only present theory only. 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. Laboratory: 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 other cylindrical grinding. Colleges lacking this equipment can only present present theory only. 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: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:000245
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 grade of C or greater) or Consent of instructor. Lecture/Lab: 6.0 credits (150 contact hours).

Components: Lecture
Attributes: Technical

CMM 238(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.

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 co-op do receive compensation.) Pre-requisite: Permission of Instructor. Co-Op: 1.0 credit (75 contact hours).

Components: Co-Op
Attributes: Technical

CMM 2301(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 2302(3) 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 2301 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Lecture

CMM 2401(3) Course ID:005087
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 2402(3) Course ID:005088
Advanced 3D Code Sequencing and Macro Systems
Introduces 3-D Programming using CAM systems to effect engineering changes that enhance productivity. Uses the CAM system to create and produce complex 3-D parts. Pre-requisite: ((CMM 130 and CMM 132) or (CMM 134 or CMM 138) and (CMM 2401) 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

CMS Communications

CMS 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: 2.0 credit; Laboratory: 2.0 credit hours.

Components: Laboratory, Lecture
Attributes: Technical

CMS 120(1) Course ID:000293
Employability Skills Seminar
This course will focus on those skills necessary for job securement 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

CMS 141(1 - 4) Course ID:000294
Communications Practicum
Student works a minimum of two hours each week with the college radio station or TV station.

Components: Independent Study

CMS 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

CMS 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

CMS 157(3) Course ID:000300
Basic Photography
Photographic techniques such as composition, lighting, exposure control, and skills needed by a photojournalist. Other topics may include using digital cameras, digital file formats, enhancing the digital image, and structuring the digital image. Lab component may include the use of a computer with photo imaging software and/or a darkroom using film cameras and enlargers. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours).

Components: Laboratory, Lecture

CMS 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

COE Cooperative Education

COE 199(1 - 3) 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 co-operative education experience varies by curriculum, the amount may never exceed eight hours in an Associate Applied Science Degree, diploma or certificate program. This course is available only to students enrolled in Associate Applied Science Degree, diploma and certificate program that list Cooperative Education as 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 is enrolled, and minimum cumulative grade point average (GPA) of 2.0.

Components: Co-Op
Attributes: Technical

COE 198(1 - 9) Course ID:005265
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

COE 199(3) Course ID:001203
Cooperative Education I
Cooperative education 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 80 hours of approved work experience. Pre-requisite/Co-requisite: Permission of instructor.

Components: Co-Op
Attributes: Technical

COMM Communications

COMM 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. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: SB - Social Behavior Science

COMM 181(3) 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 KCCTS 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

COMM 184(1) Course ID:000313
Intercollegiate Debating
Preparation for and participation in intercollegiate debate. 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 credits (45 contact hours).
Components: Lecture
Attributes: OC - Oral Communication

COM 249(3) Course ID:000314
Mass Media Communication
Examines mass media messages, audiences, technologies, and regulations in a global society. Pre-requisite: Current KCTCS placement scores for College level reading and writing, or Consent of Instructor. 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 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 credits (45 contact hours).

Components: Lecture
Attributes: Cultural Studies, SB - Social Behavior Science

COM 281(3) Course ID:000316
Communication in Small Group
Examines communication processes in small group situations including conflict, leadership, and decisionmaking. 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 credits (45 contact hours).

Components: Lecture
Attributes: OC - Oral Communication

COM 284(1) Course ID:002198
Intercollegiate Debating
Preparation for and participation in intercollegiate debating. May be repeated to a maximum of four credits.

Components: Lecture
Attributes: Other

COM 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

COM 288(3) Course ID:000318
Oral Interpretation
Analyzes prose and poetry for oral interpretation. Helps to those who plan 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

COM 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: 3.0 credit hours.

Components: Lecture
Attributes: Other

COM 181(1) Course ID:015806
Public Speaking Essentials
Applies the basic principles and techniques in research, organization and delivery of speeches appropriate to 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

COM 1812(1) Course ID:015807
Basic Informative Speaking
Provides practical platform experience in developing speaking abilities to enable the student to communicate clearly in a clear, coherent language appropriate for the presentation of informative speeches. Pre-requisite: COM 1511. Lecture: 1.0 credit (15.0 contact hours).

Components: Lecture

COM 1813(1) Course ID:015808
Basic Persuasive Speaking
Provides practical platform experience in developing speaking abilities to enable the student to communicate clearly in a clear, coherent language appropriate for the presentation of persuasive speeches. Pre-requisite: COM 1812. Lecture: 1.0 credit (15.0 contact hours).

Components: Lecture

COM 2051(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

COM 2052(1) Course ID:016232
Communication in a Job Search
Provides experience in communication developing communication skills for use in technology-based job search 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

COM 2053(1) Course ID:016233
Communication in Organizations
Provides experience in developing communication competence in leadership roles, conflict management, 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

COM 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: 1.0 credit (15 contact hours).

Components: Lecture

COM 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 settings ranging from the family, peer groups, and work contexts. Pre-requisite: COM 2521. Lecture: 1 credit (15 contact hours).

Components: Lecture

COM 2523(1) Course ID:005802
Looking at Relationship 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 obligations and the components involved in such relationships including compliance-gaining and conflict resolution. Pre-requisite: COM 2522. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical

COS 105(14) Course ID:000534
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: (Highschool 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, 6-1
This course is designed to cultivate proper attitude and behavior patterns needed to create a sucessful Cosmetologist. Kentucky Statutes and regulations, safety, biology, 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 the study of structure, composition, and function of the skin. Pre-requisite: (Highschool 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 116(14) Course ID:001214
Cosmetology II, 6-2
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 by cosmetological 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 135(1 - 8) Course ID:001223
Instructor Consent Required

Individual Requirements

Instructor Consent Required

Consent of Instructor. Lecture: 1.0 - 8.0 credit hours (15 - 240 contact hours).

Components: Lecture
Attributes: Laboratory, Lecture

COS Description
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 StateBoard of Cosmetology as they apply to the salon. Includes bacteriology and infection control through thepractice of sanitation procedures, the study of the cells, structure of the hand, arm, nail and their diseaseddisorders, and the study of beauty salon management including the practice of interacting with clients, coworkers, and supervisors. (Students practice in class and are required 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 examination prepared 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 skinconditions, disorders and diseases, and those treatable by the esthetician. Explains treatments related to skinand 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 cosmetology and nail technology students. Includes of theory, classmethods of lesson planning, media use and testing methods. Introduces methods used to teach the practicalapplication of skills. Pre-requisite: Cosmetologist’s License; one year work experience, apprenticeship in cosmetology. 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 cosmetology 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 Hairdressersinstructor exam. Pre-requisite: COS 212. Lecture: 3 credits (45 contact hours). Laboratory: 10 credits (300 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 218(20) Course ID:015567
Teaching I
Introduces teaching methods used in training cosmology, esthetics, and nail technology students. Demonstratesteaching methods of theory, media use, and testing methods. Develops and applies the methods used to teach theoretical application of skills. Pre-requisite: Cosmetologist’s License, one year work experience, and Apprentice Cosmetologists Instructor’s License. Lecture: 6.0 credits (90 contact hours). Lab: 14.0 credits (210 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 credits (240 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 thebodysystems in maintaining homeostasis. All phases of beauty salon management are studied, includinginteracting with clients, co-workers and supervisors. Laboratory experience is advanced with performanceexpectations 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 cosmetology curriculum. A comprehensive writtenand practical exam is given in preparation for the State Board Licensure exam. Students implement theirown judgement of procedures and solutions to be used on clients with supervision.
Components: Laboratory, Lecture
Attributes: Technical

COS 225(1) - 8 Course ID:004413
Instructor Consent Required
Individual Requirements II
Provides additional lecture/laboratory time to meet licensure requirements of 1800 clock hours. Pre-requisite: Consent of Instructor. Lecture/Lab: 1.0 - 8.0 contact hours (15 - 120 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

COS 275(13) Course ID:005545
Esthetician III
Covers procedures for business and management, the practice of esthetic setup, sanitation, application techniques, advanced esthetics which include peels, deep pore cleansing, clinical skin care, aroma therapy, and spa/body treatments. Includes Kentucky Statutes and Regulations. Provides for the study of the functions and benefits of electrotherapy including pre- and post-operative care for physician treatments and the application of various cosmeceutical products. Pre-requisite: (High school diploma or equivalent) and admission to esthetician program. Lecture/Lab: 13.0 credits (315 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

COS 235(1 - 8) Course ID:004413
Introduction to Cosmetic Chemistry
Provides an opportunity to apply chemical services. Pre-requisite: COS 1161(3). Lecture/Lab: 1 credit (15 contact hours).
Components: Lecture

COS 316(3) Course ID:005003
Chemical Services
Basic chemical services. Lecture: 1 credit (15 contact hours). Laboratory: 2 credits (30 contact hours).
Components: Laboratory, Lecture

COS 1144(1) Course ID:005004
Cosmetic Techniques Lab
Provides an opportunity to apply chemical services. Focuses on perms, color application and straightening ofhair. Lecture: 1 credit (45 contact hours).
Components: Laboratory

COS 1165(1) Course ID:005006
Electricity & Light Therapy for Cosmetology
Study of electricity and light therapy. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 1166(1) Course ID:005007
Intermediate Hair Design Lab
Continues the application of hair design theory and skills. Lecture: 1 credit (45 contact hours).
Components: Laboratory

COS 1167(1) Course ID:005008
Facials
Theory of facials. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 1168(1) Course ID:005009
Makeup and Hair Removal
Provides the theoretical base for application of makeup. Hair removal principles and techniques. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 218(13) Course ID:005010
Anatomy for Cosmetology I
Study of the structures and functions of the human body. Application of these studies in cosmetology services. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).
COS 2182(3) Course ID:005011
Anatomy for Cosmetology II
Study of the interaction of all body systems and the maintenance of homeostasis. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).
Components: Laboratory, Lecture

COS 2183(3) Course ID:005012
Salon Management
The study and application of all phases of salon management. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).
Components: Laboratory, Lecture

COS 2184(1) Course ID:005013
Intermediate Chemical Services Lab
The study of the interaction of all the body systems in maintaining homeostasis. Application of these studies to cosmetology services. Pre-requisite: (COS 1101 and COS 1102 and COS 1163 and COS 1164 and COS 1165 and COS1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater. Laboratory: 1 credit (45 contact hours).
Components: Laboratory

COS 2185(1) Course ID:005014
Hair Enhancements
Study of artificial hair. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 2186(1) Course ID:005015
Client Services Lab
Provides the student with the opportunity to demonstrate client services. Emphasis is on communication and positive public relation techniques. Laboratory: 1 credit (45 contact hours).
Components: Laboratory

COS 2187(1) Course ID:005016
Intermediate Hair Shaping
Hair shaping techniques for the intermediate practitioner. Lecture: 1 credit (15 contact hours).
Components: Lecture

COS 2188(1) Course ID:005017
Cosmetology Trends and Issues
Trends and issues of cosmetology are covered. Lecture: 1 credit (15 contact hours).
Components: Lecture

CPR Cardiopulmonary Resuscitation

CPR 100(1) Course ID:001239
CPR for Healthcare Professionals
Cardiopulmonary resuscitation (Adult/Infant/Child) is a course designed to teach current emergency techniques relative to cardiac and/or respiratory arrest, as put forth by the American Heart Association, National Safety Council or American Red Cross. The American Heart Association, National Safety Council or American Red Cross standardized course qualifies a student for certification of cardiopulmonary resuscitation.
Components: Lecture Attributes: Technical

CRA 232(5) Course ID:016092
Building Controls II
Develops techniques for configuring, tuning and troubleshooting a networked building control system. Covers networked field equipment and central computer-controlled building control systems. Pre-requisite: CRA 230 or consent of instructor. Lecture/Lab: 5.0 credits (105 contact hours).
Components: Lecture Attributes: Technical

CRJ Criminal Justice

CRJ 100(3) Course ID:004191
Introduction to Criminal Justice
Provides an introduction to the philosophical and historical background of the criminal justice systems, processes, purposes and functions. Includes an evaluation of the criminal justice system today, including trends and career orientation. Pre-requisite: (Current placement scores for RDG 30 or higher completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 102(3) Course ID:004192
Introduction to Corrections
Provides an introduction to the development of correctional systems, and the processes, procedures, and issues of current correctional systems, both juvenile and adult. Pre-requisite: (Current placement scores for RDG 30 or higher completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090). Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 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 denominated it will be at the discretion of each individual college whether live ammunition will be utilized by the student and faculty to demonstrate the firing of weapons and marksmanship practice. Pre-requisite: (Current placement scores for RDG 30 or higher 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

CRJ 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 scores for ENC 091 or higher or completion of ENC 090). Lecture: 2.0 credits (30 contact hours); Lab: 2.0 credits (69 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRJ 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 completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 201(3) Course ID:000899
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 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 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 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 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 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 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, report writing and case preparation. Pre-requisite: (Current placement scores for RDG 30 or higher 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 208(3) Course ID:004199
Delinquency and the Juvenile Justice System
Provides an introduction of the origins and theories associated with juvenile delinquency, and a comprehensive analysis of environmental issues that influence delinquency, plus a thorough overview of the juvenile justice system processes. Pre-requisite: (Current placement scores for RDG 30 or higher 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 210(3) Course ID:004200
Physical Security Technology & Systems
Introduces facility security with the use of environmental design and integrated electronic technology (cameras, monitors, and alarms). Pre-requisite: (Current placement scores for RDG 30 or higher 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 211(3) Course ID:004201
Liability & Legal Issues
Provides an overview of legal aspects of security, which includes but is not limited to civil and criminal law, liability of asset protection, use of force, false imprisonment, negligent security, and invasion of privacy. Pre-requisite: (Current placement scores for RDG 30 or higher completion of RDG 020) and (Current placement scores for ENC 091 or higher or completion of ENC 090) AND (CRJ 100 or Consent of Instructor). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
CRI 215(3) Course ID: 004202
Introduction to Law Enforcement
Introduces the law enforcement and the legal environment, and introduces the historical and ideological developments of law enforcement. Pre-requisite: Current placement scores for RDG 30 or higher 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 216(3) Course ID: 004203
Criminal Law
Introduces the concepts of the criminal law. 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 217(3) Course ID: 004204
Criminal Procedures
Introduces the concepts of the criminal procedures necessary for the effective enforcement of criminal law. 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 218(3) Course ID: 004193
Police Supervision
Introduces the concepts of police administration. 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

CRI 219(4) Course ID: 007358
Police Recruit Defensive Tactics
Introduces the concepts of police defensive tactics. Pre-requisite: CRJ 215 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: 1.0 credit (15 contact hours) Lab: 3.0 credits (91.5 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRI 220(3) Course ID: 005220
Introduction to Computer Forensics for Criminal Justice
Introduces the concepts of digital forensics for criminal justice. 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 222(3) Course ID: 004205
Prison & Jail Administration
Introduces the concepts of prison and jail administration. 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: 007339
Basic Traffic Collision Investigation
Introduces the concepts of traffic 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 030 or higher or completion of RDG 020) and (Current placement scores for ENC 091 or higher completion of ENC 090). Lecture: 2.0 credits (30 contact hours). Lab: 2.0 credits (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

CRJ 225(4) Course ID: 007360
Driving and Traffic Enforcement for Law Enforcement
Provides an understanding of traffic 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 scores 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
Introduces research, study, and discussion of current and emerging topics, issues, and trends in courtroom procedures. Includes basic courtroom procedures and the role 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 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
Introduces research, study, and discussion of current and emerging topics, issues and trends in 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

CRJ 240(3) Course ID: 006102
Introduction to Corporate & Industrial Security
Introduces research, study, and discussion of current and emerging topics, issues, and trends in corporate and industrial security. 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 245(3) Course ID: 006322
Introduction to Business and Industrial Fraud
Introduces research, study, and discussion of current and emerging topics, issues and trends in business and industrial fraud. Includes basic concepts of occupational fraud and abuse and the roles of the key personnel in the criminal justice system. Includes practical procedures for defining, 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: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 257(3) Course ID: 006804
Introduction to Terrorism
Introduces the concepts of terrorism 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 completion of ENC 090). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

CRJ 260(3) 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 262(3) Course ID: 016629
Criminal Psychology
Provides a basic understanding of the psychological theories explaining criminal behavior. Includes topi csgregarding the effects of the brain’s structural and functional processes on behavior, evidence based psychological techniques for treating criminal behavior, behavioral profiling, basic overview of common mental health problems, ways of recognizing mental health issues when dealing with offenders, and proven psychological techniques for calming problem situations thereby creating a safer and more efficient solution. Pre-requisite: CRJ 100, PSY 110. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
### CRT Auto Body Repair

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<td>Auto Body Repair Lab</td>
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<td>CRT 130(6)</td>
<td>Non-Structural Analysis and Damage Repair Lab</td>
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<td>CRT 150(6)</td>
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<td>CRT 151(6)</td>
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### CS Computer Science

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<td>Lecture</td>
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</table>

### CRT Course Descriptions

**CRT 129(1 - 3)** Course ID: 000427
**Instructor Consent Required**
**Selected Topics in Criminal Justice**
Introduces students to the law enforcement field, including law enforcement agencies, the criminal justice system, and the role of law enforcement in society. Credits (150 contact hours). Pre-requisite: Consent of Instructor. Components: 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. Pre-requisite: Consent of Instructor. Co-Op: 1.0 - 8.0 credit hours. Components: Co-Op Attributes: Technical

**CRT 230(5)** Course ID: 000936
**Structural Analysis and Damage Repair**
Provides instruction on the analysis, repair, and replacement of structural panels on unibody automobiles and body and frame alignment on unibody and frame cars. Credit: 6.0 credits (90 contact hours). Components: Lecture Attributes: Technical

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

**CRT 251(6)** Course ID: 000939
**Mechanical and Electrical Components Lab**
Provides practical experience in the diagnosis, repair, and 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. Credit: 6.0 credits (90 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. Credit: 1.0 credit (45 contact hours). Components: Laboratory Attributes: Technical

**CRT 295(4)** 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. Credit: 4.0 credits (120 contact hours). Components: Laboratory Attributes: Technical

**CRT 296(2)** Course ID: 000943
**Instructor Consent Required Advanced Practicum**
Provides supervised on-the-job work experience related to the students’ educational objectives. Pre-requisite: Consent of Instructor. Independent Study. Credit: 2.0 credits (150 contact hours). Components: Practicum Attributes: Technical

### CS Course Descriptions

**CS 115(3)** Course ID: 000321
**Introduction to Computer Programming**
This course teaches introductory skills in computer programming using a high-level computer programming language. There is an emphasis on both the principles and practice of computer programming. Credit: 3.0 credits (90 contact hours). Components: Lecture Attributes: University Course (University of Kentucky)

**CS 215(4)** Course ID: 0007199
**Introduction to Program Design, Abstraction, and Problem Solving**
The course covers introductory object-oriented problem solving, design, and programming engineering. Fundamentals of data structures and algorithm design will be addressed. Credit: 4.0 credits (60 contact hours). Components: Lecture Attributes: University Course (University of Kentucky)

**CS 216(3)** Course ID: 0007199
**Introduction to Software Engineering**
Software engineering topics include: life cycles, metrics, requirements specifications, design methodologies, validation and verification, testing, reliability and project planning. Credit: 3.0 credits (90 contact hours). Components: Lecture Attributes: University Course (University of Kentucky)

**CS 221(2)** Course ID: 000325
**First Course in Computer Science for Engineers**
This course introduces students to the fundamentals of computer science, including programming concepts, data structures, and algorithms. Credit: 2.0 credits (60 contact hours). Components: Lecture Attributes: University Course (University of Kentucky)

**CS 261(3)** Course ID: 0161377
**Social Networks: Methods and Tools**
The course examines the role of social networks in the modern society. Credit: 3.0 credits (90 contact hours). Components: Lecture Attributes: Independent Study
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 270(3) Course ID:010097 Systems Programming

This course provides an introduction to computer systems and explores computer architecture, operating systems, and networks from a programmer’s perspective. The course also introduces advanced programming and debugging tools. Topics include hardware instruction sets, machine language and C language program representations, linking/loading, operating systems (process management, scheduling, memory management, inter-process communication, and file systems), network programming (socket programming and web protocols), and common security attacks and solutions. Pre-requisites: EE280 and CS216. Lecture: 3.0 credits (45 contact hours)

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 125(2) Course ID:004212

Sanitation and Safety

Develops an understanding of the basic principles of sanitation and safety and to be able to apply 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 210, CUL 220 and CUL 225. Lecture: 2.0 credits (30 contact hours). Lab: 2.0 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 with different Co-requisite: CUL 210 and different instructor. Lecture/Lab: 4.0 credits (90 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

CUL 250(4) Course ID:004211

Garde Manger

This course includes the production of hot and cold food exhibits. Topics include hot and cold buffet displays, hors d’oeuvre, canapés and salads. Garnishing techniques along with cold food preparation 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 260(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: 4.0 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: Analytic math skills 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 instructor.

Components: Lecture
Attributes: Technical
the profession and current career opportunities and trends. 

**CUL 102(1) Course ID:001634**

**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. 

**Components:** Lecture

**CUL 125(1) Course ID:001634**

**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 125(1) Course ID:0016350**

**Food Service Sanitation/Safety**

Develops an understanding of the basic principles of sanitation and safety and applies them in the foodservice operations. Pre-requisite: CUL 1251. Lecture: 1 credit (15 contact hours). 

**Components:** Lecture

**CUL 230(1) Course ID:0016351**

**Food and Nutrient Sources**

Describes the characteristics, functions, and food sources of the major nutrients. Lecture: 1 credit (15 contact hours). 

**Components:** Lecture

**CUL 230(1) Course ID:0016352**

**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 280(1) Course ID:0016354**

**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 280(1) Course ID:0016355**

**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

**CUL 280(1) Course ID:0016356**

**Food Service Financial Aspects**

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). 

**Components:** Lecture

**DAH Dental Hygiene**

**DAH 101(2) Course ID:000330**

**Infection Control & Medical Emergencies**

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 (15 contact hours). 

**Components:** Lecture

**DAH 121(3) Course ID:000333**

**Dental Sciences**

Examines oral histology and embryology, head and neck anatomy, and tooth morphology as applicable to the practice of dental assisting and dental hygiene. Pre-requisite: Admission into the Integrated Dental Assisting or Dental Hygiene Program. Lecture: 3 credits (45 contact hours). 

**Components:** Lecture

**DAH 124(2) Course ID:000335**

**Materials In Dentistry**

Examines the physical and chemical properties of dental materials with an emphasis on composition and application. 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). 

**Components:** Laboratory, Lecture

**DAH 131(3) Course ID:004337**

**Oral Pathology**

Introduces the disciplines of general pathology and oral pathology as related to dental auxillary function. Pre-requisite: Dental Assisting: Minimum grade of "C" in DAH 101, DAH 121, DAH 135, DAH 125, and DAS 130. Lecture: 1.5 credits (22.5 contact hours). 

**Components:** Lecture

**DAH 135(2) Course ID:000334**

**Oral Radiology**

Examines theory and clinical practice of oral radiographic methods. Presents history and development of x-radiation; properties and uses of x-radiation; radiation hygiene; exposing, processing and mounting intraoral and extraoral films; and identification of radiographic anatomic 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). 

**Components:** Lecture

**DAH 135, DAS 125, and DAS 130. Lecture: 1.0 credit (15 contact hours).**

**Components:** Lecture

**DAS 125(6) Course ID:015651**

**Dental Assisting I**

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). 

**Components:** Laboratory, Lecture

**DAH 130(2) Course ID:006812**

**Seminar I**

Emphasizes 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). 

**Components:** Laboratory, Lecture

**DAS 225(2) Course ID:015652**

**Dental Assisting II**

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, DAS 125, and DAS 130. Lecture: 1.0 credit (15 contact hours). Lab: 1.0 credit (30 contact hours). 

**Components:** Laboratory, Lecture

**DAS 230(1) Course ID:006813**

**Seminar II**

Provides the opportunity to discuss clinical experiences and prepare to sit for the Dental Assisting National Board (DANB). Provides student the opportunity to further develop professional growth plan. Pre-requisite: Minimum grade of "C" in DAH 101, DAH 121, DAH 124, DAH 135, DAS 125, and DAS 130. Lecture: 1.0 credit (15 contact hours). 

**Components:** Lecture

**DAS 245(2) Course ID:015653**

**Preventive Dentistry**

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, DAS 125 and DAS 130. Lecture: 1.0 credit (30 contact hours). 

**Components:** Laboratory, Lecture

**DAS 250(5) Course ID:015654**

**Clinical Externship**

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, DAS 125, and DAS 130. Practicum: 5 credits (320 contact hours). 

**Components:** "Practicum" 

**DGD Digital Game and Simulation Design**

**DGD 131(3) Course ID:007066**

**3D Texturing and Lighting I**

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). 

**Components:** Lecture

**DGD 132(3) Course ID:005474**

**Introduction to 3D Graphics**

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). 

**Components:** Lecture

**DGD 231(3) Course ID:007067**

**3D Texturing and Lighting II**

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). 

**Components:** Lecture
DGH 232(3) Course ID:005476
3D Character Development
Develop realistic 3D characters with complete body structure. Pre-requisite: DGD 132 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

DGH 233(3) Course ID:007068
3D Character Rigging
Introduces basic techniques to rig a digital 3D character with a skeleton that can be manipulated to produce anatomical or realistic movement. Pre-requisite: DGD 232 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

DGH 234(3) Course ID:005475
3D Animation
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).
Components: Lecture Attributes: Technical

Components: Clinical, Laboratory, Lecture
Attributes: Technical

DGH 132(2) Course ID:004331
Pharmacology
Examines the disciplines of pharmacology and therapeutics 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

DGH 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

DHC 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

DHC 220(4) Course ID:008341
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

DHC 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

DHP 120(4) Course ID:004862
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 equivalent; 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: Acceptance into the Dental Hygiene Program; Computer Literacy or equivalent, and CPR certification. BIO 137 and BIO 139 or equivalent, with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours).
Components: Lecture Attributes: Technical

DHP 123(3) Course ID:000337
Clinical Dental Hygiene I
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

DHP 124(3) Course ID:005476
3D Character Development
Develop realistic 3D characters with complete body structure. Pre-requisite: DGD 132 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

DHP 126(3) Course ID:007070
Game Engines I
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).
Components: Lecture Attributes: Technical

DHP 127(3) Course ID:007071
Game Engines II
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).
Components: Lecture Attributes: Technical

DHP 128(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: Acceptance into the Dental Hygiene Program; Computer Literacy or equivalent, and CPR certification. BIO 137 and BIO 139 or equivalent, with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DHP 129(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 DAH 101, DAH 121, DAH 124, DAH 135, and DHG 120. Lecture: 1.5 credits (22.5 contact hours); Lab: 0.5 credits (90 contact hours). Clinical: 1.0 credit (120 contact hours).
Components: Clinical, Laboratory, Lecture Attributes: Technical

DHP 130(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 DHP 220 and DHP 226. Lecture: 1.0 credit (15 contact hours). Clinical: 2.0 credits (240 contact hours).
Components: Clinical, Lecture Attributes: Technical

DHP 131(5) Course ID:004862
Oral Biology I
Covers the disciplines of general pathology, oral pathology, pharmacology, and therapeutics as related to dental hygiene. Pre-requisite: [DHP 120 and DHP 121 and DHP 122 and (BIO 226 or equivalent)] with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours). Clinical: 1.0 credit (120 contact hours).
Components: Clinical, Lecture Attributes: Technical

DHP 135(3) Course ID:004863
Dental Radiology
Presents the theory and clinical practice of oral radiographic methods. Includes history and development of x-radiation; properties and uses of x-radiation; radiation hygiene; exposing, processing and mounting intraoral and extraoral radiographs; identification of radiographic anatomical landmarks; and advancements in computer imaging technology in dental radiology. Pre-requisite: Acceptance into the Dental Hygiene Program; Computer Literacy or equivalent; 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).
Components: Laboratory, Lecture Attributes: Technical

DHP 136(1) Course ID:004861
Dental Hygiene II
Continues DHP 120 which prepares the student to provide treatment that includes preventative and therapeutic procedures to promote and maintain oral health and assist the patient in achieving oral health goals. Pre-requisite: [DHP 120 and DHP 121 and DHP 122 and (BIO 226 or equivalent)] with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours). Clinical: 1.0 credit (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical

DHP 137(3) 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 DHP 220 and DHP 226. Lecture: 2.0 credits (30 contact hours).
Components: Lecture Attributes: Technical
DHP 136(2) Course ID:004864
Periodontics I
Focuses on the clinical, histological and radiographic differences between healthy and unhealthy periodontal tissues. Includes etiology, risk factor assessment, pathogenesis and classification of periodontal diseases. Pre-requisite: DHP 120 and DHP 121 and DHP 222 and (BIO 226 or equivalent[s]) with a grade of “C” or better. Lecture: 2.0 credits (30 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 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: 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 226(2) Course ID:004867
Periodontics II
Provides for the continuation and expansion of the content of Periodontics for the Dental Hygienist I. Emphasizes the role of the dental hygienist in the recognition of systemic implications as 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: (DHP 130 and DHP 131 and DHP 135 and DHP 136) with a grade of “C” or better. Lecture: 2.0 credits (30 contact hours).
Components: Lecture Attributes: Technical

DIT 110(3) Course ID:001274
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:001275
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 120(3) Course ID:001278
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 safety and basic oxy fuel cutting.
Components: Lecture Attributes: Technical

DIT 121(3) Course ID:001279
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: 3.0 credits (135 contact hours).
Components: Laboratory Attributes: Technical

DIT 122(3) Course ID:001280
Undercarriage
Students learn the theory and operation of undercarriage systems and their components. These components include: end老虎, roller track, roller frames, idlers, roller supports, and mainframes. Co-requisite: DIT 120.
Components: Lecture Attributes: Technical

DIT 140(3) Course ID:001282
Hydraulics
Covers the theory and operation of hydraulic systems 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:001283
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 (30 contact hours).

DIT Diesel Technology
DIT 150(3) Course ID:001284
Power Trains
Credit 3 (45 contact hours).
Components: Lecture Attributes: Technical

DIT 151(2) Course ID:001285
Power Trains Lab
Provides hands-on activities related to the concepts covered in DIT 150. Covers inspection, diagnosis and repair of tractors, starters, alternators and accessory systems found 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:001286
Powertrain for Construction Equipment
Credit 3 (45 contact hours).
Components: Lecture Attributes: Technical

DIT 153(2) Course ID:001287
Powertrain for Construction Equipment Lab
Credit 2 (30 contact hours).
Components: Laboratory Attributes: Technical

DIT 160(3) Course ID:001288
Steering and Suspension
Credit 3 (45 contact hours).
Components: Lecture Attributes: Technical

DIT 161(2) Course ID:001289
Steering and Suspension Lab
Provides hands-on activities related to 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 160(3) Course ID:001290
Brakes
Credit 3 (45 contact hours).
Components: Lecture Attributes: Technical

DIT 161(2) Course ID:001291
Brakes Lab
Provides hands-on activities related to the concepts covered in DIT 160. Includes inspection, diagnosis and repair of truck suspension systems, wheel alignment, and wheel balancing. Co-requisite: DIT 160. Laboratory: 2 credits (90 contact hours).
Components: Laboratory Attributes: Technical

DIT 190(3) Course ID:001292
Electrical Systems for Diesel Equipment
Credit 3 (45 contact hours).
Components: Lecture Attributes: Technical

DIT 191(2) Course ID:001293
Electronic Systems for Diesel Fuel Equipment Lab
Provides hands-on activities related to the concepts covered in DIT 190. Covers inspection, diagnosis and repair of 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(1) Course ID:001297
Instructor Consent Required
Practicum
Credit 1 (15 contact hours).
Components: Practicum Attributes: Technical

DIT 199(1) 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 Cooperative Education Program normally receive recompensation. Pre-requisite: Permission of Instructor
Components: Co-op Attributes: Technical

DLC 101(2) Course ID:004872
Dental Materials I
The major content of this course includes an introduction to the study of dental materials including basics 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

DLC 111(2) Course ID:004874
Dental Materials II
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 121(2) Course ID:004875
Complete Dentures I
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 122(2) Course ID:004876
Complete Dentures II
Credit 2 (30 contact hours).
Components: 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 basics 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

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 credits (45 contact hours).
Components: Lecture Attributes: Digital Literacy

DLC 100(1) Course ID:007393
Dental Materials I
The basic principles of complete denture prosthodontics are presented including balanced, monoplane and angularized 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, selecting 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

DLC 100(2) Course ID:007394
Dental Materials II
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 100(3) Course ID:007395
Complete Dentures I
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 101(2) Course ID:004871
Dental Materials I
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 101(2) Course ID:004872
Dental Materials II
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 101(2) Course ID:004873
Complete Dentures I
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 101(2) Course ID:004874
Complete Dentures II
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical

DLC 101(2) Course ID:004875
Complete Dentures III
Credit 2 (30 contact hours).
Components: Lecture Attributes: Technical
DMS 105(13) Course ID:005941
Introduction to Cardiology
Provides an overview of anatomy and physiology and the electrophysiology of the cardiovascular system. Includes an introduction to the theory and application of the 12-lead electrocardiogram, holter monitor, and stress test. Covers cardiovascular pharmacology, medical terminology, medical law and ethics, and patient care. Includes an overview of Cardiac Catheterization lab, Vascular Sonography, and Respiratory Care. Pre-requisite: Admission to Diagnostic Medical Sonography Program. Lecture: 10.0 credits (150 contact hours). Clinical: 3.0 credits (150 contact hours).
Components: Clinical, Lecture
Attributes: Technical
DMS 110(9) Course ID:004392
Department Consent Required Sonography
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 protocols. 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(7) 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: 7.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical
DMS 112(2) Course ID:006795
Patient Care Concepts in Sonography
Provides an introduction to patient care in the sonographic profession, adding to instruction received in required nursing assistant course. Includes information about healthcare settings, professionalism, methods of communication, 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 hour credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
DMS 115(6) Course ID:004395
Instructor Consent Required Sonography
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, with an emphasis on the demonstration of clinical applications of theoretical principles and concepts. Pre-requisite: Admission to Diagnostic Medical Sonography Program; Computer Literacy; NAA 100 or equivalent; CPR certification. Lecture: 4.0 credits (60 contact hours), Laboratory: 2.0 credits (90 contact hours). (45:1 Ratio).
Components: Laboratory, Lecture
Attributes: Technical
DMS 116(6) Course ID:006260
OB/GYN Sonography
Covers the study of the clinical applications within the sonographic specialties of obstetrics and gynecology. Includes related clinical symptoms and laboratory tests, 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 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 anatomy, and normal/abnormal sonographic patterns. Includes a laboratory component for the practice and application of normal sonographic patterns, 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: 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 venous, peripheral arterial and abdominal vascular sonography within the sonographic vascular circulation. Includes related clinical symptoms and laboratory tests, 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/fetus, gravid and non-gravid pelvic structures with basic competencies to be performed. Pre-requisite: Minimum grade of "C" in (DMS 109 and DMS 115) or (DMS 111 and DMS 116). Clinical: 3.0 - 4.0 credits (180 - 240 contact hours).
Components: Clinical
Attributes: Technical

DMS 138(4) Course ID:008264
Vascular Clinical Education I
Includes observation and performance 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 ultrasonic 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 Review
Provides a review of abdominal sonography to prepare the student for the related registry. Includes obtaining 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:006266
Department Consent Required
Online Vascular Review
Provides a review of vascular sonography to prepare the importance of quality measurements and safety practices. 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 related to the more advanced cardiovascular diseases. Includes how to correlate Doppler findings and measurements. Covers transesophageal echocardiography, stress echocardiography, Intensive Care/Un 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:006267
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 MedicalSonography 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 pathology; cardiovascular 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 MedicalSonography 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 238(8) Course ID:006268
Vascular Clinical Education II
Provides a review of vascular sonography to prepare 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 239(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

DMS 255(6) Course ID:005939
Vascular Technology
Presents normal/abnormal sectional anatomy, hemodynamics, patient assessment and diagnostic testing related tovascular technology. Includes applications of pathophysiologic basis, clinical signs and symptoms and typical findings related to the peripheral vascular system. Includes therapeutic interventions, intraoperative monitoring and the use of contrast agents. Covers vascular physics including blood flow characteristics and pressure/flow/velocity relationships. Pre-requisite: minimum "C" grade in (DMS 119 and DMS 240) or Consent of Program Coordinator. Lecture/Lab: 6.0 credits (120 contact hours).
Components: Lecture
Attributes: Technical

DMS 260(6) Course ID:005940
Vascular Clinical Education
Provides clinical experience by student actively assisting and performing vascular procedures under direct supervision of a Vascular Technologist. Completes competencies including cerebrovascular, upper/lower venous/arterial extremity, and abdominal vasculature. Pre-requisite: DMS 255 with minimum "C" grade.Clinical: 6.0 credits (360 contact hours).
Components: Clinical
Attributes: Technical
DMS 280(3) 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: application 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 3D 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 intellectual property ethics. Presents basic use of application, programming, systems, and utility software. Lecture/Lab: 3.0 credits (60 contact hours)
Components: Lecture
Attributes: Digital Literacy, Technical

DPT 102(2) Course ID: 016604
3D Printing Technology Fundamentals
Provides an introduction to the world of three-dimensional (3D) printing or additive manufacturing (AM) and its applications. Introduces topics including 3D printing technologies, basic use of 3D applications, programming, systems, 3D-scanning, and utility software. Pre-requisite or Co-requisite: CIT 105, demonstration of digital literacy competency by exam or certificate, or other approved course with digital literacy status. Lecture/Lab: 2.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

DPT 150(3) Course ID: 016605
Introduction to Engineering Mechanics for 3D Printing
Provides an introduction to simplified engineering mechanical principles as they apply to 3D printing, additive manufacturing, designs and products. Requires students to apply concepts related to simple force and stress analysis, material property selection, and deformation to their designs for the purpose of improving functional performance and overall printing success. Explores finishing and post processing techniques to enhance the final appearance and marketability of their printed work. Pre-requisite: DPT 100 or DPT 102. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical

DPT 280(1) Course ID: 016606
Special Projects for 3D Printing, Level I
Allows the student to gain intermediate level experience in their prospective fields through projects and tasks assigned by the instructor and based on applications the student may one day experience as professional. Focuses on various assignments and curriculum as determined by the program instructor. Pre-requisite: DPT 100 or DPT 102. Lecture/Lab: 1.0 credits (30 contact hours).
Components: Lecture
Attributes: Technical

ECEL Electrical & Computer Engineer

ECEL 252(3) Course ID: 005759
Introduction to Electrical Engineering
Reviews electrical quantities, definitions and laws, as applied to DC and AC circuits. Introduces transient and steady-state solutions of linear networks, impedance concepts, the Phasor Transform for AC Analysis, complex AC Power, diode applications, and operational Amplifiers. Discusses electrical safety. Pre-requisite: PHY 232, MA 214. Lecture: 3 credits (45 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 201(3) Course ID: 000447
Principles of Microeconomics
Covers the allocation of scarce resources from the viewpoint of individual economic units. Topics include supply and demand, elasticity, costs, and markets. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Course Also Offered in Modules

ECO 202(3) Course ID: 000449
Principles of Macroeconomics
Covers how society's needs are satisfied with the limited resources available. Includes issues such as inflation, unemployment, economic growth, globalization, and fiscal and monetary policy. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Course Also Offered in Modules

ECO 101(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 102(1) Course ID: 005926
Markets and Macroeconomic Goals
Covers contemporary economic issues such as price indices, efficiency, equity, poverty and welfare. Pre-requisite: ECO 101. Lecture: 1 credit (15 contact hours).
Components: Lecture

ECO 103(1) Course ID: 005927
Markets and Regulation
Covers contemporary economic issues such as externalities, market failure, globalization, and environmental pollution. Pre-requisite: ECO 101. Lecture: 1 credit (15 contact hours).
Components: Lecture

ECO 201(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 202(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. Pre-requisite: ECO 201. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 203(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. Pre-requisite: ECO 202. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 204(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 203. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

ECO 205(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

EDM Education

EDM 270(3) Course ID: 004011
Teaching and Learning in the Middle Grades
Teaching and Learning in the Middle Grades
Prerequisite: 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: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EDP Educational and Counseling Psychology

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 lifespan from early childhood to adulthood. Requires field experience of a minimum of 15 clock hours in instructor-approved educational agencies. Pre-requisite: PSY 100 or PY 110. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other

Course Descriptions

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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 learners in regular classrooms. Prerequisite: EDP 202. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

EDP 260(3) Course ID: 016282
Motivation and Classroom Management
Provides students with a theoretical background of motivation and behavior. Reviews current classroom practices to motivate students and ensure positive classroom behavior. Applies strategies to classroom situations. Teaches basic research methods that apply strategies to classroom situations. Prerequisite: EDP 202. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

EDU Education

EDU 110(3) Course ID: 004451
Orientation to Education
Introduces the roles and responsibilities of both the paraprofessional and the classroom teacher. Covers legal and ethical issues that might be encountered in the classroom, instructional support strategies that might be implemented by paraprofessionals, 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. Pre-requisite: ENG 101. 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 EDP 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: 004541
Introduction to American Education
Presents 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

EDU 240(3) Course ID: 002279
Elementary and Middle School Literature
Surveys both traditional and modern literature for elementary school children. Emphasizes selection, evaluation, story telling, and the use of media to meet the literary needs and interests of students 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 fieldwork. Pre-requisite: All program courses 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 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 Electrical Engineering

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.

Components: Lecture
Attributes: Technical

EEES Electronics

EEES 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 Ohm’s Law; construction and analysis of series, parallel, and series-parallel circuits; potential of magnetism and electronics; alternating current and voltage; reactive components; 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 Electronics Technology

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)
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 is emphasized, with safety integrated as a core component of the study. Pre-requisite (ELT 110 or EET 119) with a minimum grade of
Course Descriptions

EET 154(2) Course ID:001358
Electrical Construction I
Involves the study of materials and procedures used in construction wiring. Co-requisite: EET 155.
Components: Laboratory
Attributes: Technical

EET 155(2) Course ID:001359
Electrical Construction I Lab
Designed to give hands-on experiences with electrical materials and equipment in construction wiring. Co-requisite: EET 154. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

EET 198(2) Course ID:001361
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.
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 264 and EET 265) 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.
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 (945 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 generator equipment construction, operation, applications, and the maintenance of DC and AC motors and generator 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 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

EET 266(3) Course ID:001421
Rotating Machinery and Transformers
Focuses on the principles of operation and application of single-phase and three-phase AC transformers, rotating machinery and AC, DC motors and 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 267. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EET 267(3) Course ID:001422
Rotating Machinery and Transformers Lab
Applies the principles of operation, application and maintenance of single-phase and three-phase AC Transformers, motors and alternators, and DC motors and generators. A study of and compliance with the National Electrical Code standards will insure safe installation methods. Pre-requisite: [(EET 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 268(3) Course ID:001423
Instructor Consent Required
Rotating Machinery Electrical Motor Controls I
This course focuses on the construction, operation and maintenance of DC motors and generators and AC motors and alternators. This course addresses the diversity of control devices and applications used in industry today. Safety and electrical lockouts are also included. Pre-requisite: [(EET 110 or EET 119) with a minimum grade of C] or consent of Electrical Technology program advisor(s). Co-requisite: EET 269. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EET 269(4) Course ID:001424
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, and DC motors and generators. Safety and electrical lockouts are included. Pre-requisite: [(ELT 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 also included. Pre-requisite: [(EET 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: [(EET 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 credit (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 control devices, 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 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: [(EET 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 also 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: [(EET 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
Underlying principles and applications of programmable logic controllers including installation, logic fundamentals, and numbering systems; basic programming of inputs.
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 datamultiplexing, and safety circuits of industrial. Pre-requisite: [(EET 110 or EET 119) with minimum grade of "C"] and (EET 276 and EET 277) or EET 286 or EET 274 with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Co-requisite: EET 277. Lecture: 2.0 credits (30 contact hours).
Components: Laboratory
Attributes: Technical

EET 279(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

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 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.
Components: Lecture
Attributes: Other

EGR 102(2) Course ID:016991
Fundamentals of Engineering Computing
Introduces students to the practice and principles of computer programming and computational problem solving. Students will engage in hands-on project-based problem solving using computer software and hardware, with a particular emphasis on problems and techniques commonly appearing in various domains of engineering.
Components: Laboratory
Attributes: Technical

EGR 101(1) Course ID:009198
Engineering Exploration I
Engineering Exploration I introduces students to the engineering and computer science professions, College of Engineering degree programs, and opportunities for career path exploration. Topics and assignments include study skills, team development, ethics, problem solving and basic engineering tools for modeling, analysis and visualization. Open to students enrolled in the College of Engineering. Students who received credit for EGR112 are not eligible for EGR 101. Pre-requisite: Enrolled in the College of Engineering or MA ACT of at least 23 or equivalent. Students who received credit for EGR 112 are not eligible for EGR 101. Pre-requisite: 1.0 credit (30 contact hours). Components: Lecture
Attributes: University Course (University of Kentucky)

EGR 102(2) Course ID:016991
Fundamentals of Engineering Computing
Introduces students to the practice and principles of computer programming and computational problem solving. Students will engage in hands-on project-based problem solving using computer software and hardware, with a particular emphasis on problems and techniques commonly appearing in various domains of engineering.
Components: Lecture
Attributes: University Course (University of Kentucky)

EGY 120(4) Course ID:006821
Outdoor Plant Communications
Introduces students to fiber optic communication systems and up-to-date fiber techniques including how to design, install, test, and maintain fiber optic single mode networks. Emphasizes Single Mode Fiber option with installation with the associated international standards, theory, and practice. Prepares the student to work with fiber optic splicing, testing and troubleshooting equipment that is found in the workplace. Pre-requisite: (EET 110 and EET 111) or (electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EGY 104(0) Course ID:006822
Energy Utility Technologies
Introduces students to the technologies used in utility companies, including line maintenance, underground operations, substations and switchyards 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
Attributes: Technical

EGY 204(0) 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 252 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
Attributes: Technical

EGY 204(0) Course ID:006824
Solar / Photovoltaic Technologies
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 efficient 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 250 or electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EGY 204(0) Course ID:006825
Solar / Photovoltaic Technologies
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 experience with a blower 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
Attributes: Technical

EGY 204(0) Course ID:006826
Solar / Photovoltaic Technologies
Wind / Turbine Technologies
Introduces the theory and practices of wind power and how it is used and connected as a renewable energy source for the home, farm and business. Pre-requisite: ELT110 or consent of instructor. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EGY 204(0) Course ID:006826
Solar / Photovoltaic Technologies
Wind / Turbine Technologies
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 efficient 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 250 or electrical experience and consent of instructor). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EGY 204(0) Course ID:006825
Solar / Photovoltaic Technologies
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 blower 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
Attributes: Technical

EGY 204(0) Course ID:006826
Solar / Photovoltaic Technologies
Wind / Turbine Technologies
Introduces the theory and practices of wind power and how it is used and connected as a renewable energy source for the home, farm and business. Pre-requisite: ELT110 or consent of instructor. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory
Attributes: Technical

EGY 204(0) Course ID:006826
Solar / Photovoltaic Technologies
Wind / Turbine Technologies
ELT 102(3)  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 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). Lab: 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 (30 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: Technical

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 impedances, 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, control, 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, 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). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture Attributes: Technical

ELT 122(3)  Course ID:000573
Mechanical Power Transmission Systems Lab
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, packaging/seals, bearings, mechanical fasteners, pipe fittings, pumps, and valves. Co-requisite: ELT 121. 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, packaging/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 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 technician. Includes knowledge of the fundamental basic skills and knowledge required to effectively perform the installation and maintenance job duties and functions. Introduces fiber optic and electrical transmitters and cables. 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 225(3)  Course ID:001105
Computer Software Maintenance
Covers maintenance of the personal computer with an emphasis on installation, upgrading, and configuration of operating system. Covers memory management, boot sequences, printing subsystem, 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 226(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 229(3)  Course ID:004650
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
Introduces the theory and utilization of electrical motors and generators, including AC and DC motors and drives. Includes theory and utilization of limit switches, solenoids, relays, contactors, 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
Introduces the theory of programmable logic controllers. 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 260(5) Course ID:004652
Instructor Consent Required
Robotic and Industrial Automation
Introduces basic digital circuits, specifically number components, and basic programming. 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
Introduces basic digital circuits, specifically series and parallel circuits. Emphasizes design, construction, and troubleshooting of simple DC circuits in laboratory exercises. Pre-requisite: ELT 1001 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
Attributes: Technical
ELT 285(3) Course ID:000679
Instrumentation and Measurements
Introduces basic digital circuits, specifically series and parallel circuits. Emphasizes design, construction, and troubleshooting of simple AC circuits in laboratory exercises. Pre-requisite: ELT 201 and PHY 211 or Consent of Instructor. Lecture: 4.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ELT 290(4) Course ID:000697
Applied Fluid Power
Introduces 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 288(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 290(1 - 4) Course ID:000742
Selected Topics in Engineering Technology: (Topic)
Offers selected topics in engineering technology, due to rapidly changing technology or in response to local needs. Includes various topics semester to semester at the discretion of the instructor. Course may be repeated with different topics to a maximum of eight credit hours. Pre-requisite: Consent of Instructor. Lecture: 1.0-4.0 credit hours (15-60 contact hours); Laboratory: 0.3-3.0 credit hours (0-45 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
ELT 295(1 - 2) Course ID:000746
Instructor Consent Required
Independent Problems
Provides an objective for independent study for engineering and electronics technology students using a problem or special project approved by the instructor. This course may be repeated twelve or to a maximum of forty elective credits. Pre-requisite: Consent of Instructor. Lecture: 1.0 - 2.0 credits (15-30 contact hours); Laboratory: 1.0 - 2.0 (30-60 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
ELT 1101(1) Course ID:005638
Basic Electricity
Introduces basic DC circuits, specifically safety, basic test equipment, electrical resistance and Ohm's law. Pre-requisite: MAT 065 or equivalent placement level or Consent of Instructor. Lecture: 0.6 credits (9 contact hours). Lab: 0.4 credits (12 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
ELT 1102(1) Course ID:005639
Series and Parallel Circuits
Introduces basic DC circuits, specifically series and parallel circuits. Emphasizes design, construction, and troubleshooting of simple DC circuits in laboratory exercises. Pre-requisite: ELT 1101 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
Attributes: Technical
ELT 1103(1) Course ID:005640
Introductory Circuit Analysis
Introduces basic DC circuits, specifically series-parallel circuit analysis techniques. Emphasizes design, construction, and troubleshooting of simple DC circuits in laboratory exercises. Pre-requisite: ELT 1102 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
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
Attributes: Technical
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
Attributes: Technical
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; and friction. Pre-requisite or concurrent: MA 213.
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 are dependent on trained personnel to maintain morbidity and mortality. Prepares the student to sit for the National RegistryEMT 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 prehospital care in the management of life-threatening injuries. Includes a minimum twenty-four (24) hour clinical observation in the emergency department and/or on a state licensed ambulance service. Pre-requisite or Co-requisite: CPR License Lab: 6.0 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 where 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-
Courses and Descriptions

**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 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, Laboratory
Attributes: Technical

**EMS 221(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 214(6)** Course ID:015876
Paramedic Theory for Registered Nurses (RNs)
Provides the Registered Nurse with specialized knowledge and skills necessary to assess and manage ill and/or injured patients in the pre-hospital setting. Areas of specialized instruction include: pre-hospital environments, preparatory skills, airway management, patient assessment, trauma and medical patient management, obstetrical/gynecological conditions, pediatric and neonatal care, psychiatric and behavioral emergencies, and special considerations. Pre-requisite: Must be a registered nurse and EMT. Lecture/Lab: 6.0 credits (120 contact hours).

**Components:** Lecture, 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 ambulance and field setting and the emergency department. Pre-requisite: EMS 211. Clinical: 1.0 credit (180 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 practice in a simulated cardiac arrest, arrhythmia recognition and 12-lead ECG, cardiac care, and critical interventions. Pre-requisite: EMS 210 and EMS 211. Co-requisite: EMS 221. Lecture: 3.0 credits (45 contact hours).

**Components:** Lecture, Laboratory
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 with a focus on the emergency department, operating room, and respiratory care. Pre-requisite: EMS 215. Clinical: 1.0 credit (60 contact hours).

**Components:** Clinical
Attributes: Technical

**EMS 230(4)** Course ID:007311
Traumatic Emergencies
Provides a detailed study 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. Pre-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, musculoskeletal system, and the other body systems. Pre-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 pathophysiology 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. 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 airmedical 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)
Provides 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

**EMS 2851(3)** Course ID:016630
Field Internship I
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. Practicum: 3.0 credits (270 contact hours).

**Components:** Practicum

**EMS 2852(2 - 3)** Course ID:016631
Field Internship II
Provides the opportunity for continued 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 2851. Lab: 1.0 credit (45 contact hours). Practicum: 2.0 credits (180 contact hours).

**Components:** Laboratory, Practicum
ENC 90(3) Course ID:000464
Foundations of College Writing I
Introduces students to writing as a process with an emphasis on paragraph-length assignments and writing in response to reading. Stress basic conventions of standard English as these apply to students' own work as well as the use of technology to produce and share writing. 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 91(3) Course ID:000465
Foundations of College Writing II
Applies writing as a process with instruction in intermediate writing skills and technology. Stressess 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 910(0.75) Course ID:006750
Intermediate Grammar
Introduces intermediate writing skills and editorial improvement, stressing the conventions of standard written English. Pre-requisite: As determined by KCTCS Placement Policy or successful completion of ENC 090. Lecture 0.75 credits (11.25 contact hours).
Components: Lecture
Attributes: Remedial - English

ENC 912(1) Course ID:006751
Composition Strategies
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 0911. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Remedial - English

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 0911. Lecture: 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 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 70-80 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 Incumbent 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
Focuses on academic 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 103(0.75) Course ID:000469
Instructor Consent Required
Writing: An Accelerated Course
Combines the content of ENG 101 and ENG 103 in an intensive course emphasizing argumentation and library research and fulfills the writing/reading/information requirements. Pre-requisite: ACT English score of 25 or COMPASS English score of 90 AND AACT Reading score of 20 or COMPASS reading score of 90. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: WC - Written Communication

ENG 105(3) Course ID:00136
Writing Craft: Introduction to Imaginative Writing
An introduction to the genre and craft of imaginative writing, including fiction, nonfiction, and poetry. Students will study and practice writing in various modes through composition, peer critique, and research. Lecture and workshop. Offers credit for the UK Core requirement in Intellectual Inquiry in Arts & Creativity. Fulfills ENG pre-major requirement and provides ENG minor credit. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: All - Arts and Humanities, University Course (University of Kentucky)

ENG 135(3) Course ID:000275
Greek and Roman Mythology in Translation
Examines mythic literature, primarily Greek and Roman texts. Includes selections from primary works such as Works and Days, The Iliad, The Odyssey, Greek tragedy, The Metamorphoses and The Aeneid, with attention to their influence on later literature and culture. Pre-requisite: English ACT 18 and Reading ACT 20 (completion of transitional reading and writing. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

ENG 161(3) Course ID:000470
Introduction to Literature
Introduces students to an analytical rather than historical approach to literature in order to deepens students' insight into the nature and purpose of literature. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: All - Arts and Humanities

ENG 203(3) Course ID:000472
Business Writing
Provides instruction and experience in writing for business, industry and government. Emphasizes clarity, conciseness, and effectiveness in preparing letters, memos, and reports for specific audiences. Pre-requisite: [ENG 101 and (ENG 102 or Consent of Instructor)] or ENG 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other, Course Also Offered in Modules

ENG 204(3) Course ID:000474
Technical Writing
Provides instruction and experience in writing for science and technology. Emphasizes clarity, conciseness, and effectiveness in preparing instructions, proposals, and lab reports for specific audiences. Lecture: 3 credits (45 contact hours). Pre-requisite: [ENG 101 and (ENG 102 or Consent of Instructor)] or ENG 105.
Components: Lecture
Attributes: Other

ENG 207(3) Course ID:000477
Instructor Consent Required
Creative Writing: (Subtitle Required)
Provides instruction for beginners in the craft of writing, teaching students how to revise work in progress. Involves practice in aspects of craft and promotes experimentation with different forms, subjects, and approaches; outside reading provides models and inspiration. May be repeated under different subtitles for a maximum of 6 credit hours. Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other
<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Attributes</th>
<th>Components</th>
<th>Pre-requisite</th>
<th>Contact Hours</th>
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<tbody>
<tr>
<td>000487</td>
<td>Survey of American Literature II</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000478</td>
<td>Survey of American Literature I</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
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<td>000479</td>
<td>Survey of Western Literature from the Greeks through the Renaissance</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000468</td>
<td>Introduction to Film</td>
<td>AH - Arts and Humanities</td>
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<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000459</td>
<td>The Old Testament as Literature</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000453</td>
<td>Literature and Theme</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>Literature and Genre</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000449</td>
<td>Introduction to Women's Literature</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000473</td>
<td>The New Testament as Literature</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
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<td>000491</td>
<td>The Old Testament as Literature</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
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<td>Literature and Genre</td>
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<td>Lecture</td>
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<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>Literature and Place</td>
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<td>Literature and Identities</td>
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<td>Literature and Plan</td>
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<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000489</td>
<td>Survey of Western Literature from 1660 to the Present</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000488</td>
<td>Survey of American Literature I</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>Survey of American Literature I</td>
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<td>Lecture</td>
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<td>Survey of Western Literature from the Greeks through the Renaissance</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<tr>
<td>000481</td>
<td>Survey of English Literature II</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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<td>000480</td>
<td>Survey of English Literature I</td>
<td>AH - Arts and Humanities</td>
<td>Lecture</td>
<td>Pre-requisite: ENG 101. Lecture: 3 credits (45 contact hours)</td>
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Legend:
- **AH - Arts and Humanities**
- **Components:** Lecture
- **Attributes:** Other

Notes:
- Pre-requisite: ENG 101
- Lecture: 3 credits (45 contact hours)
ENM 2032(1) Specialized Business Messages
Course ID: 0015860
Enhances students’ skills in business writing through exploration of specialized business messages and modes, including writing for job search, technology-enabled writing, and writing for oral delivery. Pre-requisite: ENG 2031. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
ENM 2033(1) Reports and Proposals
Course ID: 0015861
Emphasizes lengthy and complex business messages, specifically researching for and writing business report and business proposals. Pre-requisite: ENG 2032. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

ENM Energy Management

ENM 101(9) Energy Industry Fundamentals
Course ID: 007242
Investigates competencies required for employment by various industries that manufacture energy sources. Introduces students to methods of power production, power distribution, and physics principles that are associated with both, and addresses competencies identified by the Center for Energy Workforce Development (CEWD) organization needed for power industries. Qualifies the student to take the CEWD Energy Industry Fundamentals Certification exam. Lecture: 9.0 credits (150 contact hours).
Components: Lecture
Attributes: Technical
ENM 111(3) Sustainability Management
Course ID: 007243
Examines the management of corporations as it relates to sustainability. Includes an overview of energy technology, energy resources, and emerging future energy technologies coupled with social and environmentally related legislation and its effect on corporations’ triple bottom line (people, profit, and planet). Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ENM 121(3) Solar Design and Applications
Course ID: 007244
Educates students about alternative solar energy applications which will contribute to a reduction in fossil fuel energy usage and increase cost savings related to conventional energy consumption. Additionally, the course serves to satisfy the competencies needed to qualify students to complete the North American Board of Certified Energy Practitioners (NABCEP) Entry Level Solar Certification. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ENM 200(3) Commercial Energy Analysis
Course ID: 007219
Examines ways to improve the energy efficiency of commercial buildings. Emphasizes the building envelope, lighting, HVAC, motors, appliances, water, electrical, and compressed air systems and their controls with a focus on the energy management system. Examines energy savings and reductions in operational expenses, commercial energy use software and how they can integrate and communicate with each other for smooth transmission of electricity. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ENM 210(3) Smart Grid Applications
Course ID: 007220
Introduces students to the components needed to renovate the current vertical structured power grid to a smart grid where power grid will allow energy to flow in different directions. Focuses on the application of different components within a smart grid system and how they integrate and communicate with each other for smooth transmission of electricity. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ENM 230(3) Building Automation
Course ID: 007221
Introduces students to the components involved in a building automated system (BAS). Investigates the communication and components contained in an integrated building system that controls various building automation systems. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture
Attributes: Technical
ENM 250(3) Regulatory and Environmental Issues in Energy Management
Course ID: 007222
Observes building energy conservation code compliance adopted by various states. Compiles other courses into the energy management program providing additional skills needed for energy efficient buildings. Qualifies students to take the LEED Green Associate exam upon completion of the course. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
ENM 260(3) Air Conditioning and Refrigeration Regulations
Course ID: 007223
Analyzes the regulations associated with the 608 EPA certification. Outlines techniques and regulations associated with EPA policies. Compiles other proposed energy management courses providing additional skills needed for energy efficient buildings. Qualifies students to take the 608 EPA Certification Exam at the completion of the course. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ENM 1013(3) Energy Emerging Technologies
Course ID: 0016422
Introduces students to emerging technologies and careers in the energy industry. Addresses the competencies identified by the Center for Energy Workforce Development (CEWD) organization that are needed for energy industries. Combines with the other two modules to qualify students to take the CEWD Energy Industry Fundamentals (EIF) certification. Pre-requisite: ENM 1012. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

ENV Environmental Technology

ENV 110(4) Introduction to Environmental Technology
Course ID: 001442
Introduction to Environmental Technology
Introduction to Environmental Technology provides a background in the historical and current developments in environmental problems, solutions, strategies, and regulations. Students explore the various aspects of water, land, air pollution, pollution prevention and control, and the role of regulation at the local, state, and federal level.
Components: Lecture
Attributes: Technical

EQM Equine Management

EQM 100(3) Introduction to Equine Studies
Pre-requisite: EQM 100 and BA 160, or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQM 120(3) Introduction to Commercial Breeding Practices
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: Laboratory, Lecture
Attributes: Technical

EQM 140(2) Equine Business Management I
This course is a continuation of Equine Business Management I. Topics of discussion include types of farrowings, 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 242(3) Equine Law
Pre-requisite: EQM 140 and concurrent enrollment in or successful completion of ACC 201 and ECO 201, or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

EQM 246(1) Current Trends in the Equine Industry
Pre-requisite: EQM 140 and concurrent enrollment in or successful completion of ACC 201 and ECO 201, or consent of instructor. Lecture 1 credit (15 contact hours).
Components: Lecture
Attributes: Technical
EQS Equine Studies

EQS 101(3) Course ID:007320
Components: Lecture
Attributes: Technical
Provides a general overview and basic understanding of care and management of the thoroughbred, including identification and registration information, conformation, equine behavior and equine facility design and management. Lecture: 3.0 credits (45 contact hours).

EQS 103(1) Course ID:005349
Components: Lecture
Attributes: Technical
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).

EQS 104(3) Course ID:007321
Components: Lecture
Attributes: Technical
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).

EQS 110(3) Course ID:005350
Components: Lecture
Attributes: Technical
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: EQS 101 or consent of instructor. Lecture: 3.0 credits (45 contact hours).

EQS 111(1) Course ID:005351
Components: Lecture
Attributes: Technical
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 racing, identification of important riders in history and noteworthy current riders. Lecture: 1 credit (15 contact hours).

EQS 112(4) Course ID:005352
Components: Lecture
Attributes: Technical
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 straights. 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 off after exercise and on racing. Equine Studies is a selective admission program and enrollment in this course is dependent upon acceptance into the Equine Studies program. Pre-requisites: EQS 111 and Consent of Instructor. Pre-requisite or Co-requisite: EQS 103 and EQS 104. Lecture/Lab: 4.0 credits (150 contact hours).

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).

EQS 115(3) Course ID:015655
Components: Lecture
Attributes: Technical
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).

EQS 121(1) Course ID:005497
Components: Lecture
Attributes: Technical
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 breeds. Lecture: 1.0 credit (15 contact hours).

EQS 122(3) Course ID:005498
Instructor Consent Required
Yearing Breaking and Management
Introduces the basics of managing and training yearling 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).

EQS 123(3) Course ID:005499
Breaking and Prepping Two-Year-Olds
Covers basics of preparing racehorses through their yearling to 2-year old transition. Includes acquiring yearlings and/or two-year olds, breaking, preparing for in-training sales and/or racing, concepts of nutrition for growing equine athletes, cardiovascular conditioning, muscle fitness, presentation and injuries of two-year olds in race training. Pre-requisite: Consent of Instructor. EQS 103: Racehorse Care. EQS 104: Racehorse Care Lab. Lecture/Lab: 3.0 credits (90 contact hours).

EQS 125(3) Course ID:005804
Components: Lecture
Attributes: Technical
Equine Nutrition
Presents principles of nutritional management as it relates to the overall health and performance of the thoroughbred. Pre-requisite: EQS 110 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

EQS 130(3) Course ID:005354
Components: Lecture
Attributes: Technical
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).

EQS 200(2) Course ID:005500
Components: Lecture
Attributes: Technical
Lameness in Racehorses
Expands on basic equine anatomy with emphasis on normal function of front and near legs and evaluating deviations from normal function presented as lameness in racetrack. Also discusses response to injury, forms of therapy and training methods for horses returning from injury. Pre-requisite: EQS 110 permission of instructor. Co-requisite: Concurrent enrollment in EQS 110. Lecture: 3 credits (45 contact hours).

EQS 212(3) Course ID:005503
Instructor Consent Required
Racehorse Riding Principles
Builds on basic skills learned in EQS 113 and adds principles of riding racehorses on a training track, incomparing 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).

EQS 213(2) Course ID:005504
Instructor Consent Required
Racehorse Riding Techniques
Teaches advanced fundamentals of race riding such as breaching racehorses alone and in company, using propelling 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: 2.0 credits (60 contact hours).

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 a training 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).

EQS 223(4) Course ID:005507
Components: Lecture
Attributes: Technical
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 showing, 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).

EQS 240(3) Course ID:007322
Components: Lecture
Attributes: Technical
Equine Legal and Business Principles
Provides legal insights and practical tips for a successful horse business. Lecture: 3.0 credits (45 contact hours).

EQS 299(1-9) Course ID:005626
Components: Lecture
Attributes: Technical
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. Within the maximum amount of credit granted for an Equine Studies 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 101(4) Course ID:006638
Introduction to Reading and Vocabulary
High-beginning level ESL 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.

Components: Lecture
Attributes: English for Foreign Students

ESL 111(4) Course ID:005308
Beginning Listening and Speaking
High-beginning level students will improve the ability to speak and understand English in simple everyday conversation, and develop awareness, comprehension, and interaction. The readings and activities introduced in the course will allow students to engage in meaningful dialogue, and in the process, refine their English skills. Pre-requisite: ESL 020 or placement.

Components: Lecture
Attributes: English for Foreign Students

ESL 121(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 comprehension 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 131(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 and 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 ESL 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: placement examination. Lecture: 4 credits (60 contact hours).

Components: Lecture
Attributes: English for Foreign Students

ESL 30(4) Course ID:005078
College Reading and Vocabulary Development for High-Intermediate Non-Native English Speakers
High-intermediate level ESL students will master fundamental reading skills, expand vocabulary and improve comprehension and interaction. The readings and activities introduced in the course will allow students to engage in meaningful dialogue, and in the process, refine their English skills. Pre-requisite: ESL 020 or placement.

Components: Lecture
Attributes: English for Foreign Students

ESL 31(3) Course ID:004037
Beginning Conversation for Non-Native English Speakers
Beginning level students will learn basic conversation and practice basic sounds and intonation patterns.

Components: Lecture
Attributes: English for Foreign Students, Course Also Offered in Modules

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.

Components: Lecture
Attributes: English for Foreign Students

ESL 52(3) Course ID:004044
Improved College Reading for Low-Intermediate Non-native English Speakers
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.

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 052 or placement test.

Components: Lecture
Attributes: English for Foreign Students

ESL 61(4) Course ID:004046
Foundations of College Writing I 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.

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: following the writing process, organization, multi-paragraph writing, 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.

Components: Lecture
Attributes: English for Foreign Students

ESL 63(4) Course ID:004048
Foundations of College Writing III for Non-Native English Speakers
Intermediate-level ESL students continue to develop the writing process, editing, and critical reading. Grammar instruction includes grammatical points, such as modal auxiliaries, gerunds, infinitives, adjective and noun clauses. Pre-requisite: ESL 62 or placement test.

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 word choice and syntax. 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: Remedial - English, English for Foreign Students

ESL 72(3) Course ID:007046
College Writing II for Non-Native Speakers
Introduces writing modes, including description, narration, comparison and contrast, cause and effect, process, and persuasion; presents methods of pre-writing; emphasizes development of thesis statements, topic support, and organization; short essay organization is emphasized. A student cannot receive credit for both ESL 62 and ESL 72. Pre-requisite: Currently appropriate assessment scores and a writing sample or completion of ESL 71. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Remedial - English, English for Foreign Students

ESL 82(3) Course ID:007047
College Grammar II for Non-Native Speakers
Introduces basic verb tenses, formation of questions, modal verbs, clauses, and parts of speech to non-nativespeakers 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: Remedial - English, English for Foreign Students

ESL 80(4) Course ID:005079
Beginning Writing
High-beginning level ESL students will learn composition skills by receiving instruction in the following: the writing process, organization, sentence development, paragraph writing, and editing. Basic instruction in grammar provided. Students will be recommended to this course based on the ESL placement examination.

Components: Lecture
Attributes: Remedial - English, English for Foreign Students

ESL 91(4) Course ID:005080
Intermediate Writing for Non-Native English Speakers
Low-intermediate level ESL students will enhance their composition skills by receiving instruction in: the writing process, organization, multi-paragraph writing, editing, and critical reading. Basic instruction in grammar provided. Pre-requisite: placement test.

Components: Lecture
Attributes: English for Foreign Students

ESL 92(4) Course ID:005082
Advanced Writing for Non-Native English Speakers
ESL 92 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. Students will be introduced to documenting sources. Grammar instruction includes advanced grammatical points. Pre-requisite: ESL 91 or placement.
test.

Components: Lecture
Attributes: English for Foreign Students

ESL 100(3) Course ID:016566
Listening for Academic Purposes
This course cultivates skills to improve academic speaking performance for non-native speakers of English enrolled in American university classes. Special attention is given to effective academic presentations, interpersonal communication skills, pronunciation and accent. This course is designed to raise students' speaking skills so they can participate in academic settings with competencies similar to their Native-speaker peers. Pre-requisite: KCTCS assessment instrument scores as shown in Mandatory Placement policy. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: University Course (University of Kentucky)

ESL 110(3) Course ID:016517
Speaking for Academic Purposes
This course cultivates skills to improve academic speaking performance for non-native speakers of English enrolled in American university classes. Special attention is given to effective academic presentations, interpersonal communication skills, pronunciation and accent. This course is designed to raise students' speaking skills so they can participate in academic settings with competencies similar to their Native-speaker peers. Pre-requisite: KCTCS assessment instrument scores as shown in Mandatory Placement policy. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: University Course (University of Kentucky)

Reading for Academic Purposes
This course cultivates skills to improve academic reading performance for non-native speakers of English enrolled in American university classes. Special attention is given to cross-disciplinary academic reading, reading rates and speeds, effective research methods, documentation and essay exams skills. This course is designed to raise students' reading skills so they can participate in academic settings with competencies similar to their native-speaker peers. Pre-requisite: KCTCS Assessment instrument scores as shown in Mandatory Placement policy. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: University Course (University of Kentucky)

Writing for Academic Purposes
This course cultivates skills to improve academic writing performance for non-native speakers of English enrolled in American university classes. Special attention is given to cross-disciplinary research, collaboration, the writing process, content organization and development, editing and proofreading. This course is designed to raise students' writing skills so they can participate in academic settings with competencies similar to their native-speaker peers. Pre-requisites: KCTCS assessment instrument scores as shown in Mandatory Placement policy. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: University Course (University of Kentucky)

ESL 311(1) Course ID:007396
ESL Greetings & Farewells
Highlights greetings and introductions, giving and receiving personal information, and making plans and discussing the future. Introduces expressing the future using the verb "to go." Lecture: 1.0 credit (15 contact hours)
Components: Lecture
Attributes: English for Foreign Students

ESL 312(1) Course ID:007397
ESL Shopping & Eating
Focuses on reading a menu, ordering food, and activities related to shopping. Lecture: 1.0 credit (15 contact hours)
Components: Lecture
Attributes: English for Foreign Students

ESL 313(1) Course ID:007398
ESL Making Appointments & Medical Needs
Focuses on making appointments, going to the doctor. Introduces numbers, dates, time, addresses, and using the telephone. Lecture: 1.0 credit (15 contact hours)
Components: Lecture
Attributes: English for Foreign Students

ESP Energy Systems
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 operations 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

ESP 130(3) Course ID:005493
Electrical Concepts
Provides an overview of the electrical concepts needed to operate a fossil-fired power plant stressing-plant electrical distribution and safe operation. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 132(3) Course ID:005494
Electrical Machinery and Controls
Provides detailed training in the operation of electrical machinery and controls in a fossil-fueled powerplant including proper operation during normal operations, startups and shutdowns, and transient. Pre-requisite: ESP 130. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 211(3) Course ID:005320
Power Plant Operations I
Introduces overall power plant operations including electrical generation, fuels and steam generation. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 212(3) Course ID:005323
Power Plant Operations II
Provides detailed training in the operations of boilers, fuel, air, combustion and emissions systems, including auxiliary equipment of a coal-fired (fossil fueled) power plant. Proper operation during normal operations, startups and shutdowns, and transient conditions will be stressed. Pre-requisite: ESP 211 or consent of the instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 213(3) Course ID:005322
Power Plant Operations III
Provides detailed training in the operations of water, steam, turbines and generator systems of a coal-fired (fossil fueled) power plant stressing proper operation during normal operations, startups and shutdowns, and transient conditions. Pre-requisite: ESP 212 or consent of the instructor. Lecture: 3.0 credits (45 contact hours)

Components: Lecture
Attributes: Technical

ESP 214(3) Course ID:005321
Power Plant Operations IV
Provides detailed training in the operation of the auxiliary components of a power plant, including valves, traps, actuators, pumps, couplings, air compressors, seals, lubrication systems, air ejectors, heat exchangers, and switches. Proper operation of each type of component and its function in the plant will be stressed. Pre-requisite: ESP 213 or consent of the instructor. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 220(3) Course ID:005495
Power Plant Thermodynamics
Introduces basic thermodynamic concepts and the applications of thermodynamics in a fossil-fueled power plant. Pre-requisite: PHY 151 or higher. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

ESP 280(3) Course ID:005496
Capstone in Energy Systems
Serves as the capstone course for the Energy Systems program by integrating prior learning into a single integration learning experience. Requires planning, research, and completion of both individual and team-based reports based on real-world problems or projects in the Energy Systems field. Pre-requisite: ESP 213. Lecture: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: Technical

EST Environmental Science Technology
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 labortestos 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, Lecture
Attributes: SL - Science Laboratory, SN - Science

EST 160(3) Course ID:004745
Hydrogeological Engineering
This course provides an introduction to geology and hydrology with an emphasis on understanding natural processes and the effects of human activities. Major 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

EST 170(2) 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 soils, surface water, groundwater, and benthic invertebrates. Laboratory: 2 credits (60 contact hours). Pre-requisite: EST 150 or consent of instructor.
Components: Laboratory
Attributes: Technical
The course examines freshwater ecosystems and typical aquatic pollutants. Discussion topics focus on these issues, 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 220, EST 240, and EST 250 or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

EST 220(3)
Course ID: 004747
Pollution of Aquatic Ecosystems

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

EST 225(3)
Course ID: 005054
Freshwater Invertebrates

An overview of the morphology, life history and ecology of freshwater invertebrates and their habitats as well 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 biometrically useful to infer stream quality. Pre-requisite: EST 150.

Components: Lecture
Attributes: Technical

EST 230(2)
Course ID: 004748
Aquatic Chemistry Laboratory

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 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

EST 240(4)
Course ID: 004749
Sources and Effects of Air Pollution

This course introduces 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

EST 250(3)
Course ID: 004750
Solid and Hazardous Waste Management

This course provides an introductory 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 telecommunications installation experience. Pre-requisite: Basic physics or electricity courses are recommended but not required. Lecture: 4 credits (75 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

EX 196(1-6)
Course ID: 000747
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, non-degree and undecided students. Lecture: Variable; Laboratory: Variable. Pre-requisite: Consent of instructor.

Components: Laboratory, Lecture
Attributes: Technical

FAM 252(3)
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, parenthood, communication, economics 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: 3.0 credit hours of social or behavioral science or consent of instructor.

Components: Lecture
Attributes: SB - Social Behavior Science

FAM 253(3)
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: 3.0 credit hours in social or behavioral science or consent of instructor.

Components: Lecture
Attributes: SB - Social Behavior Science

FAM 255(3)
Course ID: 000059
Child Development

Overviews the various aspects of development (physical, social, emotional, intellectual) for children ages birth through adolescence. Emphasizes techniques of directed observation. Pre-requisite: 3.0 credit hours of social or behavioral science or consent of instructor.

Components: Lecture
Attributes: Other, Technical
**FLK Folk Studies**

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. Emphasis on the varieties of cultural expression, customs and worldview practiced by regional, ethnic, racial and sectarian cultures. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities, AH - Arts and Humanities

**FLM Filmmaking**

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 112 AND 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 design, 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

**FLN Funeral Services**

FLN 101(2) Course ID: 006947 Introduction to Funeral Service
Introduces the history, principles, and practices of funeral service with attention to the fundamental skills, knowledge, ethics, aptitudes, and obligations of a funeral service professional in the United States. Pre-requisite: Admission to Funeral Service Program or consent of instructor. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

FLN 102(2) Course ID: 006948 Funeral Service Management and Merchandising
Surveys management and merchandising techniques as related to the operation of a funeral business.

Pre-requisite: Admission to Funeral Service Program. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

FLN 115(3) Course ID: 006949 Funeral Service Directing
Covers the funeral service procedures, practices and customs of various religions and groups in the United States, as well as the techniques and considerations needed in conducting such services.

Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

FLN 120(4) Course ID: 006950 Funeral Service Counseling
Examines psychological concepts in the areas of grief, bereavement, and mourning with particular emphasis on the roles of the funeral director in relation to these concepts as well as a facilitator of the funeralservice, crisis intervenor, and after care counselor.

Pre-requisite: Admission to the Funeral Service Program. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

FLN 131(3) Course ID: 006952 Funeral Service Ethics, Regulations, and Statutes
Surveys general principles of mortuary and business law. Emphasis is on ethical practice. Compliance with the need and at-need regulatory agencies included.

Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours).

Components: Laboratory
Attributes: Technical

FLN 150(3) Course ID: 006954 Pathology
Investigates pathological changes related to disease processes. Discusses the effects of physical and chemical trauma on the human body, particularly manifestations relevant to mortuary science.

Survey the major diseases. Pre-requisite: Admission to the Funeral Service Program and BIO 225 or equivalent. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

FLN 165(2) Course ID: 006954 Sociology of Funeral Service
Surveys social phenomena that affect all elements of funeral service, including family and social structure and other factors that relate to funeral service.

Pre-requisite: Admission to the Funeral Service Program. PSY 110 or SOC 101. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

FLN 170(4) Course ID: 006955 Thanatology
Surveys the basic principles of chemistry as they relate to funeral service. Stresses the chemical principles and precautions involved in sanitation, disinfection, public health and embalming practice. Reviews the government regulation of chemicals currently used in funeral service.

Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**FNS Financial Management**

FNS 110(2) Course ID: 006948 Financial Service Management and Merchandising
Surveys management and merchandising techniques as related to the operation of a funeral business.

Pre-requisite: Admission to Funeral Service Program. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

FNS 115(3) Course ID: 006949 Funeral Service Directing
Covers the funeral service procedures, practices and customs of various religions and groups in the United States, as well as the techniques and considerations needed in conducting such services.

Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

FNS 120(4) Course ID: 006950 Funeral Service Counseling
Examines psychological concepts in the areas of grief, bereavement, and mourning with particular emphasis on the roles of the funeral director in relation to these concepts as well as a facilitator of the funeralservice, crisis intervenor, and after care counselor. Pre-requisite: Admission to the Funeral Service Program. Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

FNS 131(3) Course ID: 006952 Funeral Service Ethics, Regulations, and Statutes
Surveys general principles of mortuary and business law. Emphasis is on ethical practice. Compliance with the need and at-need regulatory agencies included. Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours).

Components: Laboratory
Attributes: Technical

FNS 150(3) Course ID: 006954 Pathology
Investigates pathological changes related to disease processes. Discusses the effects of physical and chemical trauma on the human body, particularly manifestations relevant to mortuary science. Survey the major diseases. Pre-requisite: Admission to the Funeral Service Program and BIO 225 or equivalent. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

FNS 165(2) Course ID: 006954 Sociology of Funeral Service
Surveys social phenomena that affect all elements of funeral service, including family and social structure and other factors that relate to funeral service. Pre-requisite: Admission to the Funeral Service Program. PSY 110 or SOC 101. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

FNS 170(4) Course ID: 006955 Thanatology
Surveys the basic principles of chemistry as they relate to funeral service. Stresses the chemical principles and precautions involved in sanitation, disinfection, public health and embalming practice. Reviews the government regulation of chemicals currently used in funeral service. Pre-requisite: Admission to the Funeral Service Program. Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

**FHM Health Mathematics Fundamental**

FHM 100(2) Course ID: 001463 Dosage Calculations
Provides an overview of basic math skills, a thorough knowledge of the system of measurement and conversion, and application skills to perform dosage calculations. Emphasis is placed on unit analysis to calculate medication dosages.

Components: Lecture
Attributes: Technical

FHM 287
Course Descriptions
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPX 100(3)</td>
<td>Fluid Power</td>
<td>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.</td>
</tr>
<tr>
<td>FPX 101(2)</td>
<td>Fluid Power Lab</td>
<td>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.</td>
</tr>
<tr>
<td>FPX 1001(0.3)</td>
<td>Introduction to Fluid Power</td>
<td>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. Pre-requisite: ([FPX 101 and FPX 1011) with a grade of C or better] or Consent. Co-requisite: FPX 1012 or Consent.</td>
</tr>
<tr>
<td>FPX 1004(1)</td>
<td>Hydraulic System Components and Applications</td>
<td>Introduces the basic fundamentals of hydraulic component design, system design, and operation. Covers higher level schematic layout and design as well as the specific 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 1005 or Consent.</td>
</tr>
<tr>
<td>FPX 1005(1)</td>
<td>Pneumatic Systems and Components</td>
<td>Introduces the basic fundamentals of pneumatic components and operation. Covers higher level schematic layout design as well as the specifics involved with the actual component selection. Provides an 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.</td>
</tr>
<tr>
<td>FPX 1010(0.3)</td>
<td>Introduction to Fluid Power Lab</td>
<td>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).</td>
</tr>
<tr>
<td>FPX 1011(0.3)</td>
<td>Introduction to Hydraulic System Maintenance Lab</td>
<td>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 credits (9 contact hours).</td>
</tr>
<tr>
<td>FPX 1012(2)</td>
<td>Fluid Power Lab</td>
<td>Provides practical experiences in the study of fluid power theory, hydraulic and pneumatic systems and their operations. Co-requisite: FPX 101 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).</td>
</tr>
<tr>
<td>FPX 1013(0.3)</td>
<td>Introduction to Hydraulic System Maintenance</td>
<td>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).</td>
</tr>
<tr>
<td>FPX 1014(0.55)</td>
<td>Hydraulic System Components and Applications Lab</td>
<td>Introduces basic fundamentals of hydraulic component design, 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 (16.5 contact hours).</td>
</tr>
</tbody>
</table>
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, 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 firefighter 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 practicals. Pre-requisite: FRS 202 or Consent of Instructor. Lecture: 3 credits (90 contact hours).
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 204 or Consent of Instructor. Lecture: 5 credits (75 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
FRS 206(3) 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: 6 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 13-AUG-2008
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, product of combustion, and safety issues related to life hazards. Explains the three physical states of matter in which fuels are commonly found. Lecture: 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 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.
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
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, of doors, windows, and walls. Discusses maintenance of tools and equipment used for forced entry and safety factors. Pre-requisite: (FRS 101 or FRS1014) or Consent of Instructor.
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
Components: Laboratory, Lecture
FRS 1023(0.4) Course ID:003898 13-AUG-2008
Aircraft Rescue
Provides the basic information needed by firefighters to effectively perform the various tasks involved in aerial firefighting 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 (60 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
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 faints, injuries, general illness, sustaining injury or sudden illness until a higher level of trained emergency care technicians.
Components: Laboratory, Lecture
FRS 1026(0.3) Course ID:003901
Bloodborne Pathogens
Provides an understanding of 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 the ability to recognize conditions that indicate problem use of gloves. Lecture: 1 credit (2 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
Introduces the use of tools and equipment used for forced entry and safety factors. Pre-requisite: (FRS 101 or FRS1014) or Consent of Instructor
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.
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 themselves 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.
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, hovenvironmental factors influencing wildland fires, and the ability to recognize situations that indicate problem 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 101 and FRS 1016 and FRS 1028) or Consent of Instructor. Co-requisite: FRS 1034 or Consent of Instructor
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.
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 awater 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.

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

Components: Laboratory, 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

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 1026 and FRS 1034) or Consent of Instructor.

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 safety. Lecture: 0.2 credits (3 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.

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.

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.

Components: Laboratory, Lecture
FRS 1054(0.6) Course ID: 003911
Fire Hose, Appliances and Streams II
Covers the selection, maintenance and testing of fire hose, nozzles and appliances. Pre-requisite: FRS 1033 or Consent of Instructor.

Components: Laboratory, Lecture
FRS 1055(0.7) Course ID: 003912
Ropes II
Includes rope size, strength, type and length of rope to accomplish a firefighting or rescue task. Pre-requisite: FRS 1021 or Consent of Instructor

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.

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 1028 and FRS 1034) or Consent of Instructor.

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

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

Components: Laboratory, Lecture
FRS 2014(0.3) Course ID: 003917
Ventilation II
Includes advanced level study in ventilating procedures. Reviews mechanical ventilation systems and their use in fireground operations. Pre-requisite: FRS 1034 or Consent of Instructor. Lecture: 0.3 credits (40 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 crawlspaces, 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 2020(1.1) 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
FRS 2023(1.1) Course ID: 003922
Pump Operations I
Includes the basic information pertaining to the required competence of fire service pump operators. Pre-requisite: FRS 1041 or Consent of Instructor.

Components: Laboratory, Lecture
FRS 2024(0.1) Course ID: 003923
Foam Fire 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 (1 contact hour).

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 2027(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 2028(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
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
Conclusion
FYE Achieving Academic Success

FYE 100(1) Course ID:007399
Strategies for College Success
Introduces students to strategies and information that promote success in the college environment, including educational planning, campus resources, and academic success skills. NOTE: Student may not receive credit for both FYE 100 and FYE 105. Lecture: 1.0 credit (15 contact hours).
Components: Lecture
Attributes: Other, Course Also Offered in Modules

FYE 105(3) Course ID:007213
Achieving Academic Success
Introduces students to strategies that promote academic, personal, and professional success in the college environment. Fosters a sense of belonging, promotes engagement in the curricular and co-curricular life of the college, and provides opportunities for student to develop academic plans that align with career and life goals. NOTE: Students may not receive credit for both FYE 100 and FYE 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Other, Course Also Offered in Modules

GEN General College Studies

GEN 91(3) Course ID:007368
Foundations of Information Literacy
Introduces information literacy skills. Focuses on skills related to definininginformation needs, finding sources, using information to solve problems, organizing and presenting information, and evaluation. Pre-requisite: COMP 90 - Reading Score of 60+ OR English Score of 39+ Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Reading

GEN 100(1) Course ID:000871
Introduction to College
Introduces new students to college and college life, support services provided by the college, techniques for academic success, and career exploration. Lecture: 1.0 credit hour (15 contact hours).
Components: Lecture
Attributes: Other, Course Also Offered in Modules

GEN 102(3) Course ID:000872
Foundations of Learning
Presents strategies which promote academic and personal success in college, including utilizing campus resources, learning and memory, self-management, critical reading, critical thinking, classroom skills, and career exploration. Lecture: 3.0 credit hours (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules

GEN 103(1) Course ID:085328
Instructor Consent Required
Principles of Peer Mentoring
Focuses on the study of issues, topics, and strategies related to mentoring first-year students. Relevant student development theory is highlighted. Prepares peer mentors to assist in teaching a section of GEN 100. Pre-requisite: Sophomore status and consent of instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Other

GEN 104(2) Course ID:005329
Instructor Consent Required
Applied Principles of Peer Mentoring
Offers academic credit to peer mentors who assist teaching a section of GEN 100 with a faculty member. Prepares peer mentors for helping plan course content, meeting with first-year students, and assisting with other coursework-related responsibilities as determined by the GEN 100 faculty member. Pre-requisite: GEN 103 and consent of GEN 100 instructor and Sophomore status. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Other

GEN 120(3) Course ID:003864
Service Learning
Engages students directly in structured, community-based activities to acquaint them with community opportunities, services, and needs. Integrates concepts from the classroom with community service allowing student to practice concepts while developing an appreciation of service. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

GEN 122(1) Course ID:003871
The Exemplary Tutor
Trains college students to be effective tutors by introducing ethics and philosophy of tutor-tutorerelationships and concepts of questioning, learning styles, problem solving, active listening, goal setting, and critical thinking. Can be taken 1 time for a total of 1 credit. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Other

GEN 123(1 - 3) Course ID:003872
The Exemplary Reading Tutor
Provides credit for students wishing to tutor in reading or reading based courses as related to the reading expectations in the KDE Core Curriculum. Grants 1 credit for 45 hours of tutoring. 2 credits for 90 hours of tutoring, and 3 hours for 120 hours of tutoring. May be repeated for a total of 6 credits. Pass/Fail. Pre-requisite: GEN 122
Components: Laboratory, Lecture
Attributes: Other

GEN 125(3) Course ID:006590
Applied Meta-Thinking
Develops critical thinking skills and literacy processes across disciplines utilizing communication and appropriate applications in making self-paced, self-directed decisions and judgments. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Art - Arts and Humanities, Course Also Offered in Modules

GEN 130(3) Course ID:005055
Introduction to Information Resources
Provides basic concepts of the information society including different types of libraries and electronic resources, such as the internet, online databases, and information management software. Focuses on the nature of information, computer technology, and ethical computing issues. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Other

GEN 131(1) Course ID:005524
Basic Library Research and Resources
Introduces students to effective and efficient use of information resources through development of search statements/strategies, location and evaluation of information and information resources, and review and revision of search strategies as needed. Introduces students to the library catalog, print resources, databases, and web resources and to the evaluation of information. Lecture: 1 credit (15 contact hours).
Components: Lecture
Attributes: Other

GEN 140(3) Course ID:000179
Instructor Consent Required/Development of Leadership
Presents concepts of leadership and group dynamics, especially focusing on each student's individual leadership philosophy, and providing opportunities for all students to develop leadership skills and potential. Pre-requisite: Consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, Course Also Offered in Modules

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
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).
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: 1.0 credit (15 contact hours).

Components: Lecture
Attributes: Technical

GEN 1021(1) Course ID:007078
College Basics & Learning Styles
Provides an overview of 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 credit (15 contact hours).

Components: Lecture
Attributes: Course Also Offered in Modules

GEN 1252(1) Course ID:006592
Learning Skills Application
Presents skills for thinking critically and creatively, connecting prior learning, using reciprocal relationships, and interpreting information. Lecture: 1.0 credit (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 credit (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 skill 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 skill 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 effective employment behaviors. Lecture: 0.4 credits (6.0 contact hours).

Components: Lecture

GEN 2251(0.4) Course ID:006602
Acquiring Digital Skills
Acquire, 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
Identifies project and time management strategies to set appropriate goals and timelines. Pre-requisite: GE 225 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: GE2251 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: GE2251 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: GE2251 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-starter 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

GEN 2259(0.3) Course ID:006610
Self-directed Learning
Identifies skills and strategies for being a self-starter 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 understanding 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.

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: Cultural Studies, 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. Consider significant issues such as sustainable development, environment, human rights, and gender...
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
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
Attributes: Foreign Language, Cultural Studies
GER 201(3) Course ID:000880
Intermediate German I
Includes the systematic review of grammar and furthering of reading, writing, listening, and speaking skillsbased upon cultural and literary materials. Pre-requisite: GER 102, or equivalent or placement test.
Components: Lecture
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: GER201 or equivalent or placement test.
Components: Lecture
Attributes: Foreign Language, Cultural Studies
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 145(3) Course ID:016881
Remote Sensing
Introduces remote sensing of the earth with topics that include the physical principles of remote sensing, history and future trends, sensors and their characteristics, image data sources, and image classification and analysis techniques. Pre-requisite or Co-requisite: CIT 125 or consent of instructor. Lecture: 3.0 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
GIS 255(3) Course ID:016882
Geospatial Programming
Examines customization of GIS software applications by way of modified service interface elements while integrating topics in theory and implementation of the various scripting languages currently used. Prepares students to solve spatial problems and streamline GIS workflows through the creation and modification of scripts. Pre-requisite: CIT 125 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
GIS 260(3) Course ID:016883
Geospatial Web Mapping
Introduces the design, publishing, optimization and maintenance of geospatial servers, and basic geospatiaweb services and applications. Includes an introduction to browser and mobile enabled interactive applications. Pre-requisite: CIT 125 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
GLY 101(3) Course ID:000878
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 GLY111.
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.
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
Interprets geologic maps and cross-sections, and study important invertebrate fossil groups. Requires one fieldtrip. 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 125(3) Course ID:016917
Geology of the National Parks and Monuments
Introduces the principles of physical geology within the context of the U.S. National Parks and Monuments, including Earth materials, geologic time, plate tectonics, and the surface and internal processes that have shaped and continue to shape the Earth as related to specific National Park and Monument sites. Includes an overview of the history of the park system and its unique role in understanding and preserving our natural history and environment. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

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 relative dominance and sudden fall. Lecture: 3.0 credit 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 geological processes to illustrate how science works. Pre-requisite or Co-requisite: GLY 130. Lab: 1.0 credit (30 contact hours).

Components: Laboratory
Attributes: SL - Science Laboratory

GLY 140(3) Course ID:016864
Introduction to Oceanography
Investigates geologic, physical, biogeochemical, and biologic processes that occur within the oceans of the world. Emphasizes connections between these processes and how those connections interact with our planet’s life. Explores geologic evolution of the ocean floor, dynamic composition of ocean water, lithospheric and atmospheric interactions with the hydrosphere, marine life and ecosystems, and the impact of human activity on marine ecosystems. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

GLY 220(4) Course ID:000847
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, the history of Earth, 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 credit (30 contact hours).

Components: Lecture
Attributes: SL - Science Laboratory, SN - Science

HCS 110(1) Course ID:016971
Health IT Terminology
Explains terminology used by workers in health care, public health, or those who work with Health IT systems including common medical terms, technology systems, health data standards, and clinical terminology. Pre-requisite or Co-requisite: AHCS 115 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture
Attributes: Technical

HCS 150(2) Course ID:016974
Health IT Analysis & Quality
Covers specific health care and public health applications. Introduces Health IT standard data structures, software applications, enterprise architecture in health care, and public health organizations. Pre-requisite or Co-requisite: CIT 105 AND HCS 145, or Consent of Instructor. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

HCS 180(1) Course ID:016976
Usability and Human Factors
Introduces rapid prototyping, user-centered design and evaluation, and usability. Emphasizes the effects of new technology and workflow on downstream processes, as well as facilitation of a unit-wide focus group on workflow. Pre-requisite or Co-requisite: CIT 105 AND AHCS 115 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture
Attributes: Technical

HCS 200(1) Course ID:016977
Health IT Computer Systems
Provides an intermediate overview of computer architecture, data organization, representation, structure of programming languages, networking, and data communication about Health IT Systems. Pre-requisite or Co-requisite: CIT 105 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture
Attributes: Technical

HCS 210(3) Course ID:016978
Implementing Health IT Systems
Introduces the OSI model, including the purpose and content of each of its seven layers as well as hardware, processes, protocols, and tools at each layer. Provides a practical experience that will address approaches to assessing, selecting, and configuring EHRs (electronic health records) to meet the specific needs of customers and end-users. Emphasizes the principles underlying system configuration, including system selection, planning, testing, troubleshooting, and final deployment. Pre-requisite or Co-requisite: AHCS 145 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

HCS 220(1) Course ID:016979
Working with HIT Systems
Introduces the components of Health IT systems and their applications. Introduces the potential threats to security and need for standards, high levels of usability, and awareness
Components: Laboratory Attributes: Technical
HCS 230(2) Course ID:016980
Vendor-Specific Systems
Provides an in-depth discussion in Vendor-Specific Systems, focusing specifically on system and database architectures used in commercial Electronic Health Records (EHRs), vendor strategies for terminology, knowledge management, ways to assess decision support capabilities of EHRs, and vendor-specific training (point of care). Pre-requisite or Co-requisite: HCS 200 or Consent of Instructor. Lecture: 2.0 credits (30 contact hours).

Components: Lecture Attributes: Technical
HCS 260(1) Course ID:016981
Health IT Instructional Design
Examines Health IT learning management systems, instructional design software tools, teaching techniques and strategies, evaluation of learner competencies, maintenance of training records, and measurement of training program effectiveness. Pre-requisite or Co-requisite: HCS 165 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture Attributes: Technical
HCS 280(1) Course ID:016982
Project Management & Teams
Introduces project management tools and techniques that result in the ability to create and follow a project management plan. Emphasizes the value of being "team players" by understanding roles, the importance of communication, and group cohesion. Lecture: 1.0 credits (15 contact hours).

Components: Lecture Attributes: Technical
HCS 281(1) Course ID:016983
Health IT Customer Service
Develops customer service skills to encourage effective communication across the team. Introduces roles that will be encountered in healthcare and public health settings. Lecture: 1.0 credits (15 contact hours).

Components: Lecture Attributes: Technical
HCS 290(1) Course ID:016984
Leadership for Health IT
Develops the processes and skills for leadership roles and effective management of teams. Emphasizes the leadership modes and styles best suited to Health IT system deployment. Pre-requisite or Co-requisite: HCS150 or Consent of Instructor. Lecture: 1.0 credits (15 contact hours).

Components: Lecture Attributes: Technical
HCS 295(1) Course ID:016985
Healthcare Facility Management
Provides advanced instruction for students in the operation of 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. Lecture: 7.0 credits (210 contact hours).

Components: Laboratory Attributes: Technical
HEO 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
HEO 108(7) Course ID:001522
Motorgrader 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 (215 contact hours).

Components: Laboratory Attributes: Technical
HEO 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
HEO 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
HEO 115(7) Course ID:004571
Hydraulic Excavator Operator
Covers a broad base of skills required to operate heavy equipment safely. Includes how to operate a hydraulic excavator safely. Pre-requisite: HEO 151. Lecture: 45 contact hours). Lab: (180 contact hours).

Components: Laboratory, Lecture Attributes: Technical
HEO 125(3) Course ID:001525
Special Problems I
Reinforces material presented in HEO 150, 200, and 250. Discusses job orientation, blueprint reading, and equipment operation. Pre-requisite Or Co-requisite: DIT 103. Lab: 3.0 credits (90 contact hours).

Components: Laboratory, Lecture Attributes: Technical
HEO 151(6) Course ID:015678
Heavy Equipment Operating I
Instructs students in the operation of heavy equipment such as bulldozers, backhoes, front end loaders, graders, and scrapers. Explains techniques of operation such as digging, ditching, sloping, 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
HEO 150(7) Course ID:015679
Heavy Equipment Operating II
Instructs students in the operation of heavy equipment such as bulldozers, backhoes, front end loaders, graders, and scrapers. Explains techniques of operation such as digging, ditching, sloping, grading, backfilling, clearing fields, and foundation excavating. Pre-requisite or Co-requisite: DIT 103. Lecture: 7.0 credits (210 contact hours).

Components: Laboratory Attributes: Technical
HEO 201(6) Course ID:015678
Heavy Equipment Operating II
Instructs students in the operation of heavy equipment such as bulldozers, backhoes, front end loaders, graders, and scrapers. Explains techniques of operation such as digging, ditching, sloping, grading, backfilling, clearing fields, and foundation excavation. Pre-requisite or Co-requisite: DIT 103. Lecture: 6.0 credits (90 contact hours).

Components: Lecture Attributes: Technical
HEO 225(3) Course ID:001528
Special Problems II
Reinforces material presented in HEO 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
HEO 251(6) Course ID:015680
Heavy Equipment Operating III
Reinforces material presented in HEO 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, 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 Healthcare Facility Management
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 an aging healthcare environment; gain understanding of the structure and operating relationships that exist in the hospital setting; and gain an understanding of his/her role within the healthcare 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 laws. 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 in 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 student 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/scope 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. 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, ventilation, building envelope, medical, steam, and security systems that comprise most healthcare facilities. Reviews computer systems and software such as building management 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 and benchmarking. Pre-requisite: HFL 100 Introduction to Healthcare Facility Management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 150(3)  Course ID: 015666
Planning, Design and Construction I
Covers project management delivery from concept, development, design, contracting, 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 101 Introduction to Healthcare Facility Management. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HFL 230(3)  Course ID: 015667
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, 2010; 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 systems programs. Develops and conducts environmental 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)  Course ID: 015668
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. Maintains 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, RadioFrequency 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

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.
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.
Components: Lecture
Attributes: Technical

HIM 106(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.
Components: Lecture
Attributes: Technical

HIM 210(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, documentary 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.
Components: Lecture

HIM 214(3)  Course ID: 004308
Archives Studies: Preservation & Conservation
This course provides an in-depth analysis of the preservation and conservation issues confronting archivist. 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.
Components: Lecture
Attributes: Technical

HIM 216(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 appended to, 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 consideration regarding deaccessioning and collection sales. Pre-requisite: HIM 104.
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 confronting 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, emergency mitigation and response procedures. Each student is expected to prepare a museum emergency response plan. Pre-requisite: HIM 104.
Components: Lecture
Attributes: Technical

HIM 234(3)  Course ID: 004312
Museum Studies: Exhibits
This course provides an extensive analysis of the issues presented in the display of a museum’s collections. Topics covered include exhibit planning, design, fabrication, installation, and interpretation. Ethical considerations and cultural sensitivities regarding the presentation of artifacts will also be addressed. Pre-requisite: HIM 104.
Components: Lecture
Attributes: Technical

HIM 252(3)  Course ID: 004315
Electronic Records Management
This course provides 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.
Components: Lecture
Attributes: Technical
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<td>000449</td>
<td>History of the United States and Global Issues</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000860</td>
<td>History of Europe Through the Mid-Seventeenth Century</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000834</td>
<td>History of Europe from the Mid-Seventeenth Century to the Present</td>
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<td>000532</td>
<td>Western Culture: Science and Technology</td>
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<td>000535</td>
<td>Western Culture: Science and Technology</td>
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<td>000542</td>
<td>History of the United States Through 1865</td>
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<td>000171</td>
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<td>000348</td>
<td>The World at War, 1939–45</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000828</td>
<td>History of British People to the Restoration</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000516</td>
<td>History of the British People Since the Restoration</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000834</td>
<td>History of Colonial Latin America</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000220</td>
<td>History Modern Latin America, 1810 to Present</td>
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<td>015616</td>
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<td>007417</td>
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<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>000693</td>
<td>History of Native America: 1865 to Present</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<tr>
<td>000705</td>
<td>History of Women in America</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
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<td>005481</td>
<td>History of American Women to 1920</td>
<td>Cultural Studies, AH - Arts and Humanities</td>
<td>Lecture</td>
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</table>
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: Other

HIS 267(3) Course ID:005482
History of American Women from 1920
Emphasizes equal rights and the civil rights movements. Includes the rejection of feminism in the 1950s, and 1970s, and the changing nature of the family and work, and societal ideas about women. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

HIS 271(3) Course ID:005262
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 295(3) Course ID:000749
East Asia to 1800
Presents a multicultural survey of world cultures and global issues from the birth of civilization to the Roman Republic. Pre-requisite: His 1011. Lecture: 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 those 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: Cultural Studies, AH - Arts and Humanities

HIS 298(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 101(1) Course ID:016360
Early Civilizations
Presents a multicultural survey of world cultures and global issues from the birth of civilization to the Roman Republic. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 102(1) Course ID:016361
Ancient Empires and Cultures
Presents a multicultural survey of world cultures and global issues from the Roman Republic to the rise of Islam. Pre-requisite: His 1011. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 103(1) Course ID:016362
Rise of the Modern World
Presents a multicultural survey of world cultures and global issues from the rise of Islam through the Renaissance. Pre-requisite: HIS 1011 and HIS 1012. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 102(1) Course ID:016363
The Modern World 1500-1750
Presents a multicultural survey of world cultures and global issues from 1500 to 1750. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 102(1) Course ID:016364
Revolutions and Imperialism
Presents a multicultural survey of world cultures and global issues from 1750 to 1914. Pre-requisite: HIS 1021. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 103(1) Course ID:016365
World Wars and Globalization
Presents a multicultural survey of world cultures and global issues from 1914 to the present. Pre-requisite: HIS 1021 and HIS 1022, Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 108(0.75) Course ID:006236
The British Commonwealth
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
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 109(0.75) Course ID:006239
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
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 109(0.75) Course ID:006240
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
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 109(0.75) Course ID:006241
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
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 109(0.75) Course ID:006242
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 credit (11.25 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HIS 109(2) Course ID:004260
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: (BIO 135 or BIO 137) and (CLA 131 or AHS 115 or MIT 1033). Minimum grade of C. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

HIT 104(3) Course ID:004262
Pathophysiology of Human Disease
An overview of pathophysiology content and teaching materials as they relate to the health information field. A view 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 MIT 1033) and (BIO 137) with a grade of C or better). Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

HIT 105(4) Course ID:007081
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: 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 MIT 1033) and (BIO 137) with a grade of C or better). Lecture: 4.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

HIT 106(2) Course ID:004263
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 MIT 1033) and (BIO 137) with a grade of C or better). Lecture: 3.0 credits (45 contact hours). Lab: 1.0 credit (30 contact hours).

Components: Lecture
Attributes: Technical

HIT 109(4) Course ID:007083
Clinical Classification Systems I
Applies current group of disease 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 care operations and their compliance programs. 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 MIT 1033) and (BIO 137) with a grade of C or better). 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, leadership, motivation, and team building within the health information environment. Included in the course will be a review of financial reimbursement, ergonomics, contracts, HIM roles and responsibilities, 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: 2.0 credit hours
Components: Lecture
Attributes: Technical

HIT 212(2) Course ID:004274
Health Care Organization and Supervision
Introduces the principles of organization, supervision, leadership, motivation, and teamwork in the health information environment. Included in the course will be a review of financial reimbursement, ergonomics, contracts, HIM roles and responsibilities, 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: 2.0 credit 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
This course 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 299(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 instructor; course may be repeated with different topics a maximum of four credit hours. Lecture: 0.5 - 4.0 credits (7.5 - 60.0 contact hours). Lab: 0.5 - 4.0 credits (15-20 contact hours).
Components: Laboratory, Lecture
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. Pre-requisite or Co-requisite: (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). Lab: 0.5 credit (15 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

HIT 202(3) Course ID:004269
Clinical Classification Systems II
Includes Current Procedural Terminology (CPT) coding system and the study of hospital based reimbursement issues. Use 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. Pre-requisite or Co-requisite: (CIT 130 or OST 240). 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). Lab: 0.5 credits (15 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

HIT 210(2) Course ID:004270
Quality Assessment in Health Information
Principles of quality assessment as they relate to health information technology. Includes data collection, analysis, organization, and implementation of quality assurance processes, and a review of regulatory and accrediting organization requirements. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or by special permission of the Program Coordinator. Successful completion of HIT 109 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 215(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 department. Provides observation and assists personnel in all 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 216(2) Course ID:004271
Clinical Classification Systems III
This course introduces the advanced application of clinical classification systems in the reimbursement for healthcare services. Includes 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 Specialist Certificate or by special permission of the Program Coordinator. Successful completion of HIT 202 with a grade of C or better. Lecture: 1.5 hours. Laboratory: 1 hour.
Components: Laboratory, Lecture
Attributes: Technical

HIT 217(3) Course ID:007085
Clinical Classification Systems III
Introduces the advanced application of clinical classification systems in the reimbursement for healthcare services and special systems such as CPT, ICD-9-CM, CPT, and HCPCS. Pre-requisite or Co-requisite: (HIT 202 and HIT 204). Minimum grade of "C". Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: Technical

HIT 218(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 Specialist Certificate 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

HIT 219(2) Course ID:004273
Health Care Statistics
Use, collection, arrangement, presentation and verification of health care data. Fundamental concepts of descriptive statistics, data validity, reliability and the appropriate use and interpretation of applied health care statistics. Pre-requisite: Admission to the Health Information Technology Program or Medical Record Coding Specialist Certificate or by special permission of the Program Coordinator. Successful completion of HIT 108, HIT 110, HIT 112, HIT 202, and HIT 204 with a grade of C or better. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

HIT 220(2) Course ID:004276
Health Reimbursement Methodologies
Introduces the uses of coded data and health information reimbursement, leadership, motivation, and team building within the health information environment. 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. 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 221(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. 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 verification 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 222(2) Course ID:004274
Health Care Organization and Supervision
This course 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 reimbursement, ergonomics, contracts, HIM roles and responsibilities, 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: 2.0 credit hours
Components: Lecture
Attributes: Technical

HIT 223(2) 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 224(3) Course ID:004276
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 225(4) Course ID:007087
Clinical Practicum
This course 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 226(3) Course ID:004277
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 instructor; course may be repeated with different topics a maximum of four credit hours. Lecture: 0.5 - 4.0 credits (7.5 - 60.0 contact hours). Lab: 0.5 - 4.0 credits (15-20 contact hours).
Components: Laboratory, Lecture
Attributes: Technical
**HMS Human Services**

**HMS 101(3) Course ID:000901**

**Human Services Survey**
Examine 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 relationships skills through knowledge of communication 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 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 an historic 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 210(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. Prerequisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

**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
Attributes: Technical

**HMS 220(3) Course ID:005586**

**Cultural Diversity in Human Services**
Examines current and historical cultural diversity in human services provision. Focuses on culturally-awareness and cultural competence as they pertain to human services professionals. Explores dominant minority cultural norms, attitudes, and belief systems. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
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, perspectives, 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, PSY 110 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 249(4) Course ID:016837**

**Foundational Skills in Para-Professional Practice**
Applies principles and skills previously learned in the Human Services courses to develop proficiency related to interviewing, data collection, assessment, goal development, contracting, and documentation. Prepares students for work at the Bachelors in Social Work level. Pre-requisite: HMS 104. Lecture: 4.0 credits.

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 hours); Clinical: 3.0 credits (180 contact hours).

Components: Clinical
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

**HMS 299(1 - 3) Course ID:000522**

**Special Topics in Human Services**
(2-3 credit hours).

Components: Lecture
Attributes: Technical
HOS 200(3) Course ID:002367
Cultural Heritage Tourism
Examines the range of cultural and heritage assets that can become viable tourism attractions and looks at ways of linking quality cultural heritage tourism to community development from effective planning and marketing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HOS 210(3) Course ID:002368
Front Office Operations
Identifies principles required to organize and operate hotel and motel front office guest needs, to have effective salesmanship, and to create procedures for different types of front office operations. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HOS 228(2) Course ID:002370
Tourism Marketing
Examines how and why tourists make destination choices, and learns how to develop a strategic marketing system that emphasizes your destination's distinctive appeal. Answers questions of how to assess visitor markets, gather and analyze data, reduce risk and gain competitive advantages, and turn analysis into sound decisions. Applies knowledge from case studies, and practical tips for stretching marketing dollars through better monitoring, cost controls, and evaluation. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HPH Health Physics

HPH 100(3) Course ID:006324
Health Physics Fundamentals
Introduces the fundamentals of atomic and nuclear physics, algebra, unit analysis, and team dynamics required within an organization that handles radioactive substances. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HPH 101(3) Course ID:000888
Health Physics I
Introduces the principles of health physics to include atomic and nuclear physics, radioactivity, and ionizing radiation and its biological effects. Pre-requisite: (MAT 150 and PHY 152) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HPH 102(3) Course ID:000762
Health Physics II
Introduces internal and external dosimetry, shielding, radiation detection, and environmental monitoring. Pre-requisite: HPH 101. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HPH 120(3) Course ID:000346
Radiation Biology
Examines the cellular response, pathology, and short- and long-term effects of ionizing radiation on living tissue. Pre-requisite: (BIO 112 and BIO 113) or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

HPH 200(4) Course ID:000824
Nuclear Instrumentation and Measurement I
Introduces the principles of operation and use of portable radiation survey instruments, counting room instrumentation including GM and proportional counters, and liquid scintillation. Introduces gamma rayspectroscopy. Pre-requisite: HPH 102. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

HPH 202(4) Course ID:000824
Nuclear Instrumentation and Measurement II
Introduces multi-channel analyzers in alpha, beta, and gamma spectroscopy. Involves techniques to identify and quantify radioactive materials. Pre-requisite: HPH 201. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

HPH 204(2) Course ID:000824
Roof Restoration and Repair
Covers pre-World War II roof designs and materials with a focus on repair and maintenance of roofs or historic buildings. Emphasizes fall protection systems and setup procedures for scaffolding and ladders. Pre-requisite: Consent of Instructor. Lecture/Lab: 2.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

HRT Horticulture

HRT 101(3) Course ID:000895
Instructor Consent Required
An Integrated Survey of Western Civilization I
An honors course designed to provide an opportunity for the interested student to study the development of Western Civilization as reflected in the literary, artistic, musical, philosophical, political, and economic developments and movements of the major western cultures from ancient times through the Roman Empire. Lecture: 3 hours. Pre-requisite: Consent of instructor.
Components: Lecture
Attributes: ART - Arts and Humanities

HRT 102(3) Course ID:004340
Introduction to Horticulture
This course introduces the practical approach to the study of horticulture. Students will learn the practices of horticulture and the purpose of plants for food, comfort, and bounty. Lecture: 3.0 credit hours.
Components: Lecture
Attributes: Technical

HRT 104(4) Course ID:001534
Introduction to Herbaceous Plants
Covers the care, culture and distinguishing characteristics of herbaceous plants including the scientific and common names of many of the most common herbaceous plants including pests common to these plants. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

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.
Components: Lecture
Attributes: Technical
Courses

HRT 130(3) Course ID:001539
Landscape Maintenance
Introduces career opportunities 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. 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 products related is discussed.
Components: Lecture

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 created displays. Laboratory: 2 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

HRT 210(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 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 systems. Pre-requisite: HRT 140
Components: Lecture
Attributes: Technical

HRT 241(2) Course ID:001548
Greenhouse Management Lab
This course is an introduction to the tools, equipment, procedures, supplies and safety issues related to greenhouse management. Other tasks are assigned as the season dictates. Pre-requisite: HRT 240
Components: Laboratory
Attributes: Technical

HSE 101(1) Course ID:002221
Introduction to Health Sciences
Provides students with information and career options about allied health and sciences programs including presentations by allied health practitioners. Students will research selected health profession/careers and allied health 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 of homeland security and the incident command system, including the terminology and definitions used in 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 110(3) Course ID:005519
Introduction to Emergency Management
Introduces the field of emergency management and the incident command system, including the terminology and definitions used in 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 endorsed 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: 3.0 credits (45 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: Lecture
Attributes: Technical

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 caregivers through 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 healthcare, 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 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 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 must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1366 and 807 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/ pharmaco kinetics, include 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 study of pathophysiology and general health management of diseases and injuries across the lifespan. Includes topics of physiology, 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 123(2) 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. Pre-requisites: students must independently perform such skills as blood sugar monitoring, running an electrocardiogram, urinary catheterization and enemas, collecting blood for lab tests and preparing patients and instruments for surgery. Pre-requisites: 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: Cultural Studies, AH - Arts and Humanities

HUM 133(3) Course ID:000582
Introduction to Native American Literature
Introduces the study of the oral and written literature of Native American peoples and the role of Native American literature and historical context in which it was composed. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities, SB - Social Behavior Science

HUM 140(3) Course ID:006814
Introduction to Latino Literature
Analyzes 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: Cultural Studies, 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: Cultural Studies, 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 histories 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: Cultural Studies, AH - Arts and Humanities

HUM 202(3) Course ID:000841
Survey of Appalachian Studies I
Presents an interdisciplinary 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: Cultural Studies, AH - Arts and Humanities, SB - Social Behavior Science

HUM 203(3) Course ID:000518
Survey of Appalachian Studies II
Presents an interdisciplinary introduction to Appalachian history, economy, geography, politics, and culture primarily through exploration of texts about the region, including fiction, non-fiction, and poetry. Emphasizes migration, 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: Cultural Studies, 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. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Cultural Studies, 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 identity, religion, expression, politics and government, trends in American literature, or trends in social science which may vary from semester to semester. Course may be repeated once for additional credit when the repeat offering covers different topic than the initial course offering. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

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 the history of literature 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
Examines 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, philosophers, 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 poetry, drama, and film. Pre-requisite: ENG 102 or ENG 105 or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Cultural Studies, AH - Arts and Humanities

HUM 240(3) Course ID:005357
Survey in Kentucky Literature
Examines 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. Examines connections to political, social, 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: Cultural Studies, 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. Examines connections to political, social, 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: Cultural Studies, 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: Cultural Studies, 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
Enhances student awareness of how cinema has been used as a multicultural tool for observing/analyzing various aspects of a broad range of societies. Includes critical analysis and interpretation of films from various cultures. Explores the films' 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
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: ENG101 or consent of the instructor. Lecture/Lab: 3.0 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 the visual communication and storytelling for the purpose of learning. Pre-requisite: IDL 101 and 110 or consent of the instructor. Lecture/Lab: 3.0 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: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

IDL 123(3) Course ID: 007204
Multimedia Design and Development
Introduces students to foundations of design and layout principles that enhance learning. Students will learn 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 the instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

IDL 147(3) Course ID: 007205
eLearning Development I: Rapid Authoring Tools
Provides an overview of e-learning development tools for the development of courses including learning activities. Particular emphasis will be given to rapid authoring tools. Lecture/Lab: 3.0 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 IDL 113 or consent of the instructor. Lecture/Lab: 3.0 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 e-learning. Pre-requisite: IDL 147 or consent of the instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical

Lab: 3.0 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 planning, analysis, and design for the resolution of human performance problems. The ADDIE Model of instructional design will be explored within the context of e-learning. Pre-requisite: IDL 101 and IDL 110 or consent of the instructor. Lecture/Lab: 3.0 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 e-learning. Pre-requisite: IDL 113 or consent of the instructor. Lecture/Lab: 3.0 credits (60 contact hours).
Components: Lecture Attributes: Technical
the interpretation of information in a project context. Pre-require: IDL 210 or consent of the instructor. Lecture: 3.0 credits (45 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 250(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-require: 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-require: IDL 210 or consent of the instructor. Lecture: 3.0 credits (45 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 290(3)**  
Course ID: 007255

**Experiential Learning in Instructional Design**  
Performs 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-require: Permission of the instructor. Co-Op: 3.0 credits (180 contact hours).

**Components: Co-Op**

**Attributes: Technical**

**IDL 298(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 their success for employment. Pre-require: Consent of the instructor. Lab: 3.0 credits (90 contact hours).

**Components: Laboratory**

**Attributes: Technical**

**IDL 300(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 abilities 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-require or Co-require: Computer literacy course. Lecture: 3 credits (45 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 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-require: Computer literacy course. Lecture/Lab: 4 credits (90 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 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-require or Co-require: Computer literacy course. Lecture: 4 credits (90 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 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 plan, prioritize and set goals for a team project. Pre-require or Co-require: Computer literacy course. Lecture: 3 credits (45 contact hours).

**Components: Lecture**

**Attributes: Technical**

**IDL 210(3)**  
Course ID: 005744

**3D Modeling & Animation II**  
Covers advanced 3D modeling practices for artists and designers working with animation. Provides deep understanding of 3D modeling formats: Polygons, NURBS, and Subdivision Surfaces. Explores issues of integrating animation into animation production and application of advanced troubleshooting skills. Pre-require: IDT 110 with grade of “C” or greater, or consent of instructor. Lecture: 3 credits (45 contact hours).

**Components: Lecture**

**Attributes: Technical**

**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. Explores the historical and current influences on early childhood education. Includes 20 hours of field experience which may be waived by the IECE 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. Presents knowledge of appropriate child development, ethical decision-making in the early childhood profession, and accommodations for children with disabilities. Includes ten (10) hours of required field experience which may be waived by the IECE 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. 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 field experience which may be waived by the IECE program coordinator for students concurrently enrolled in IEC 190 or IEC 291. 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 thromplation of appropriate creative activities in a child-centered environment. Includes five (5) hours of required field experience which may be waived by the IECE Program Coordinator for students concurrently enrolled in IEC 190 or IEC 291. Pre-requisite: IEC 180 or permission of IECE program coordinator.

Components: Lecture
Attributes: Technical

IEC 239(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 in the current offering is Preventive Maintenance. Pre-requisite: Program Coordinator’s Approval. Practicum: 3.0 credits (180 contact hours/60.1).

Components: Practicum
Attributes: Technical

IEC 299(1 - 3)  
Course ID: 004139
International Exchange Student
Provides the student with specialized knowledge, skills, and abilities necessary to work with friends in an international setting. Lecture: 1-3 credits (15-45 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 opportunities 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 IECE program coordinator for students concurrently enrolled in IEC 190 or IEC 291. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

IEC 291(3)  
Course ID: 004141
Instructor Consent Required
IEC 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 practice. Required: One Hundred and Eighty (180) field hours of experience. Pre-requisite: Program Coordinator’s Approval. Practicum: 3.0 credits (180 contact hours/60.1).

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 in the current offering is Preventive Maintenance. Pre-requisite: Program Coordinator’s Approval. Practicum: 3.0 credits (180 contact hours/60.1).

Components: Practicum
Attributes: Technical
IET 1042(1.1) 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 weld symbols and interpretation.
Components: Lecture
IET 1071(1) Intro to Basic Electricity
Introduces various elements of basic electricity, including the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting sequential logic charts, line drawings and time charts.
Components: Lecture
IET 1072(0.3) 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.
Components: Lecture
IET 1073(1) Control Circuits & Components
Concentrates on control logic components and circuit function. Examines combinational and sequential ladderlogic 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.
Components: Lecture
IET 1074(0.7) 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.
Components: Lecture
IET 1081(0.5) 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 system. Enables the learner to work with mechanical power transmission devices.
Components: Lecture
IET 1082(0.3) Flexible Drives
Introduces various types and styles of flexible belt and chain drives, including V-belts, chains, sprockets, and components.
Components: Lecture
IET 1083(2.2) Coupling And Alignment
Introduces types and functions of couplings used in industrial power transmissions, including how to install, align, and maintain shaft couplings.
Components: Lecture
IET 1093(1.2) Rigging Awareness & Fundamentals
Introduces the basic concepts and safety rules and issues related to the use of overhead cranes and hoists.
Components: Lecture
IET 1094(0.5) Introduction to Arc Welding
Introduces the source power 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.
Components: Lecture
IET 107(1) Principles of Electricity
Introduces various types and styles of gears and cam components. Lecture/Lab: 0.9 credits (16.5 contact hours).
Components: Lecture
IET 1041(0.9) Drafting Fundamentals
Introduces the fundamental information in drafting necessary to retrieve read, manipulate, and understand 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) 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 weld symbols and interpretation.
Components: Lecture
IET 1071(1) Intro to Basic Electricity
Introduces various elements of basic electricity, including the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting sequential logic charts, line drawings and time charts. Lecture/Lab: 1.0 credit (21 contact hours).
Components: Lecture
IET 1072(0.3) 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.
Components: Lecture
IET 1073(1) Control Circuits & Components
Concentrates on control logic components and circuit function. Examines combinational and sequential ladderlogic 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) 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) 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 system. Enables the learner to work with mechanical power transmission devices.
Components: Lecture
IET 1082(0.3) 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) Coupling 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) 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) 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) Gears and Cams
Introduces various types and styles of gears and cam follower components used in industrial applications. Lecture/Lab: 0.7 credits (13.5 contact hours).
Components: Lecture
IET 1091(0.7) 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) 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) Rigging Awareness & Fundamentals
Introduces the basic concepts and safety rules and issues related to the use of rigging equipment, attachment components, calculating sling angles, stresses, and safe lifting and turning loads. Lecture/Lab: 1.2 credits (26.5 contact hours).
Components: Lecture
IET 1094(0.7) Introduction to Arc Welding
Introduces the source power 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) SMAW/Stick Welding
Introduces shielded metal arc welding (SMAW) safety and shielded metal arc welding (SMAW) processes including flat, horizontal, vertical, and overhead welding techniques. Lecture/Lab: 1.6 credits (45 contact hours).
Components: Lecture
IET 1103(0.9) Gas Metal Arc Welding
Provides knowledge of theory, safety practices, equipment and techniques required for gas metal arc welding (GMAW) including different transfer methods and position welding. Lecture/Lab: 0.9 credits (25.5 contact hours).
Components: Lecture
IET 1104(1) Welding and Fabrication
Introduces oxy-fuel welding and cutting, including safety,
setup and maintenance of oxy-fuel welding and cutting equipment. Includes cutting, braising, and welding techniques. Lecture/Lab: 1.0 credits (22.5 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 1292(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 1293(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 1294(0.5) Course ID:007190
Drill Press
Introduces safe operation of drill presses, primarily the sensitive drill press. 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 1295(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 1296(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 results of not being safely conscious in the workplace. Teaches the students in basic safety culture and prepares them to participate in, conduct, and lead safety walk-throughs. Teaches the student to Kiken Yoshiki Training (KYTP) Hazard Prediction Training. Prepares the student to conduct risk assessment activities, construct safetyboards, and formulate individual safety commitments. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

IET 1302(1) Course ID:016098
SS
Introduces the fundamental SS process involving the five step progression described by the Japanese words Seiri, Selton, Seto, Seiketsu, and Shitsuke. Teaches 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. Teaches the student in the development of a work system 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
Teaches the student in the concepts of value-added product, maintenance value-added product, value-added work process, and whole work process. Teaches the process of how a Toyota earns profit. Describes the Toyota Production System for Maintenance using the House framework. Describes the Toyota Work Process, and explains the three Ms and the seven Mus and their relationship to maintenance and production. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

IET 1304(1) Course ID:016100
Problem Solving
Teaches the Toyota Business Process model, the 8 step Toyota Problem Solving method, and the 10 step Toyota Problem Solving method, and the 10 part Toyota Drive and Dedication model. Teaches the students in the process of development, break down the process of problems, and standardize the results. Teaches the development of a first class philosophy involving all the stakeholders. 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 techniques. Teaches the student in the various individual units in a system and the steps of maintaining a failure mode and maintenance measures. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

IET 2011(1) Course ID:007179
Electrohydraulics/Pneumatics Fundamentals
Introduces the fundamental concepts of fluid power. Covers the principles of fluid flow, calculations of statics/physics properties of fluids and their ability to work. Teaches the various kinds of fluid power components, symbols, circuits, and their relationship to maintenance and production. Teaches the principles of fluid power 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 the functionality of fluid power reservoirs and components. Teaches the properties and requirements for fluids, as well as how filters are used to maintain cleanliness in fluid power systems. Lecture: 0.7 credits (13.5 contact hours).

Components: Lecture

IET 2013(0.4) Course ID:007177
Hose, Piping, and Tubing
Introduces various types of conductors that carry fluid through a system. Focuses on fittings, hose, and 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 the different kinds of pumps, actuators and their related components used in fluid power systems which create flow, change fluid power into mechanical power and devise 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
Explains 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 2019(0.6) Course ID:007171
Introduction to PLCs
Introduces various elements of basic PLCs including the identification of programmable logic-control systems. Introduces various elements of basic PLCs including the identification of programmable logic-control systems. Lecture/Lab: 0.6 credits (9 contact hours).

Components: Lecture

IET 202(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 203(1.5) Course ID:007169
Programming PLCs
Introduces various elements of programming PLCs. Addresses the 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

IET 205(0.6) Course ID:007166
Introduction to Robotics
Introduces robotics in regard to industrial robotic safety standards, historic timeline of industrial robots, industrial classification of robots, common industrial applications of robots, basic system components found in industrial robot applications, robotic motion concepts, common terms and definitions used in computer-integrated manufacturing (CIM) as it relates to robotics. Lecture/Lab: 0.6 credits (10.5 contact hours).

Components: Lecture

IET 2025(1.5) Course ID:007165
Programming/Editing Robots
Introduces robotics systems and programming. Reviews robotic system application, automated system safety, robotic system composition, robotic motion control, fundamental programming commands, and program editing. Emphasizes the fundamentals of robotic control. Teaches the student in electronics, welding, computer technology, and general sciences. Lecture/Lab: 1.5 credits (30 contact hours).

Components: Lecture

IET 2053(0.2) Course ID:007164
Robot and Preventive Maintenance
Introduces the student to the maintenance of robots and their relationship to maintenance. Emphasizes the student's ability to recognize and correct problems with robots. Lecture/Lab: 0.2 credits (4.5 contact hours).

Components: Lecture
IET 2054(1.1) Course ID:007163
Error Codes & Troubleshooting
Instructs operators, technicians, engineers, programmers, or students on the basic recovery procedures needed to interpret robot error codes and perform a safe recovery start up procedure on robotics equipment. Lecture/Lab: 1.1 credits (22.5 contact hours).
Components: Lecture

IET 2055(0.6) Course ID:007162
Integration of PLCs & Robots
Introduces concepts associated with integrating robotic applications in a PLC-controlled, automated system. Includes discussion of the standard safety and interface signals associated with integrated systems, as well as various types of robotic applications along with the interface signals typically associated with each application. Stresses the programming concepts that support optimizing cycle time. Lecture/Lab: 0.6 credits (15 contact hours).
Components: Lecture

IEX 2061(0.5) Course ID:007160
Fundamentals
Introduces identification, installation, replacement, and troubleshooting of automation controller circuitboards and modules. Lecture/Lab: 0.5 credits (10.5 contact hours).
Components: Lecture

IEX 2062(0.9) Course ID:007159
Sensors and Photoeyes
Introduces installation, maintenance and troubleshooting of common input devices. Lecture/Lab: 0.9 credits (18 contact hours).
Components: Lecture

IEX 2063(0.6) Course ID:007158
Calibration and Loop Training
Introduces methods of motor control including on-off, proportional, integral, and derivative including PIDloop tuning and quality. Lecture/Lab: 0.6 credits (13.5 credits).
Components: Lecture

IEX 2064(3) Course ID:007157
Final Control Elements
Covers automation output devices including AC, DC, and servo motors, variable speed drives, relays, motorstarters and sizing of components for various applications. Lecture/Lab: 3.0 credits (63 contact hours).
Components: Lecture

IFM 111(3) Course ID:007270
Client-side Informatics Software
Examines client-side informatics software used to define, analyze, design, collect, structure, manage, and share organizational data. Examines data through charting and statistical analysis. Applies informatics concepts using industry-standard software, such as spreadsheet packages, database management systems, data/document sharing software, and collaboration software. Pre-requisite: Computer Literacy or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 128(3) Course ID:007271
Principles of Informatics
Introduces students to the concepts associated with an information-centric world, information systems, and includes the definition of information and how it is communicated. Prepares students to understand how information systems support data-driven decision making strategies, information sharing technologies, dataencoding, cooperative skills, knowledge sharing, and organizing of information. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 130(3) Course ID:007272
Business Data Communications
Introduces students to data communications terminology and concepts used in business. Introduces students to network design and analysis. Provides a survey of network planning, implementation and administration. Provides an overview of commercial networking hardware and software products and the methodologies used for their evaluation. Introduces students to data and network security. Introduces students to data storage, database systems and data extraction across various network and client-side devices. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 211(3) Course ID:007273
Collaboration Software
Examines collaboration software and how it is commonly used in informatics environments and within organizations. Prepares students to design, develop, implement and manage team collaboration sites. Pre-requisite: Computer Literacy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 215(3) Course ID:007274
Information Systems Analysis
Introduces students to systems analysis and general design; analysis strategies, tools, and techniques for documenting current systems and developing proposed systems; systems modeling, data modeling, cost/benefit trade-offs, and project management; and development of a comprehensive systems analysis project. Pre-requisite: Digital Literacy or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 225(3) Course ID:007275
Advanced Informatics
Examines advanced informatics concepts related to designing, analyzing, organizing, securing, managing, and mining databases. Examines such topics as data corruption, efficiency in design and implementation, datamining, database connectivity, and network and security basics. Pre-requisite: Computer Literacy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 235(3) Course ID:007276
Information Systems and Business Intelligence
Introduces students to the fundamentals of information systems and business intelligence. Prepares both business and information technology students to understand how information systems and business intelligence provides a basis for the decisions needed to be competitive in the global marketplace. Pre-requisite: Digital Literacy or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 100(3) Course ID:007464
Digital Information & Communication Technologies
Introduces digital concepts and technologies. Examines hardware, operating systems, networks, applications, telecommunications, digital security, ethics, and social media. Utilizes Windows operating system plus word processing, spreadsheet, database, and presentation applications. Emphasizes social media practices/conceptual trends for practical daily users. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Digital Literacy

IMD 114(3) Course ID:005748
Information Literacy
This course is an introduction to the use of information resources, both traditional print materials and on-line materials, for academic and professional research. Topics include development of search strategy, evaluation of resources, use of database search techniques, ethical and legal aspects of information management and documentation of sources. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 115(3) Course ID:007465
Introduction to Graphic Design
Introduces theory and techniques required in graphic design. Includes an introduction to layout, color theory and use; design, photo and illustration techniques; and exploration of media in respect to digital design. Integrates concepts regarding the production process including pre-press, printing, other production techniques and distribution. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 117(3) Course ID:007467
Keyboarding and Basic Word Processing
Introduces theory, concepts and techniques required in 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: 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 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 experiences 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 equivalents. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM Informatics

IFM 225(3) Course ID:007275
Advanced Informatics
Examines advanced informatics concepts related to designing, analyzing, organizing, securing, managing, and mining databases. Examines such topics as data corruption, efficiency in design and implementation, datamining, database connectivity, and network and security basics. Pre-requisite: Computer Literacy. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IFM 235(3) Course ID:007276
Information Systems and Business Intelligence
Introduces students to the fundamentals of information systems and business intelligence. Prepares both business and information technology students to understand how information systems and business intelligence provides a basis for the decisions needed to be competitive in the global marketplace. Pre-requisite: Digital Literacy or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD Information Management and Design

IMD 100(3) Course ID:007464
Digital Information & Communication Technologies
Introduces digital concepts and technologies. Examines hardware, operating systems, networks, applications, telecommunications, digital security, ethics, and social media. Utilizes Windows operating system plus word processing, spreadsheet, database, and presentation applications. Emphasizes social media practices/conceptual trends for practical daily users. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 114(3) Course ID:005748
Information Literacy
This course is an introduction to the use of information resources, both traditional print materials and on-line materials, for academic and professional research. Topics include development of search strategy, evaluation of resources, use of database search techniques, ethical and legal aspects of information management and documentation of sources. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

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Introduction to Graphic Design
Introduces theory and techniques required in graphic design. Includes an introduction to layout, color theory and use; design, photo and illustration techniques; and exploration of media in respect to digital design. Integrates concepts regarding the production process including pre-press, printing, other production techniques and distribution. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

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Keyboarding and Basic Word Processing
Introduces theory, concepts and techniques required in 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: 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 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 experiences 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 equivalents. 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, investigations into the advertising and print industries’ use of this type of graphic, creation and manipulation of raster-based graphics. In addition to the use of Photoshop in web design, video editing and compositing with Photoshop, as well as development of a portfolio of raster art photo editing and manipulation samples. Pre-requisite: IMD 100 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 133(3) Course ID:005046
Beginning Web Design
Introduces the creation and publication of a web site and covers extensible hypertext markup language (XHTML) and introductory cascading style sheets (CSS). Covers hand-coding for web design, along with the incorporation of graphics into web sites and publishing. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 180(3) Course ID:004786
Intermediate Web Design
Utilizes content management systems (CMS) for web design. Students will develop current CMS web development. Instructs students in basic CMS setup, administration, and theme design. Utilizes HTML, CSS, and photo-editing software within a CMS. Identifies fundamentals including website layout, navigation, font usage, color schemes, site architecture, with emphasis on creating websites that effectively communicate the desired content for employers and clients. Pre-requisite: IMD 133 OR Consent of Instructor. 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:016285
Computer Graphics
Introduces basic computer graphics with an emphasis on graphics for game design. Instructs students in practical aspects of graphics such as color, ray tracing, rasterization, shading, mapping, light, and shadow. Pre-requisite: CIT 105 OR IMD 100 OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Course Equivalents: CIT 221 Attributes: Technical

IMD 222(3) Course ID:016286
3D Modeling for Video Games
verb.)Instructs 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
Exposes 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. 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 production knowledge necessary for successful output of commercial graphic design projects. Emphasizes raster image creation, editing, and preparation for offset printing processes, color separations, spot color usage, and preparation, vector graphic usage, fontusages 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 226(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 129. 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 (Vectorizer-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 HTML, CSS, and content management systems (CMS) for responsive web design. Instructs students in responsive website development using HTML, CSS, and photo-editing software. Students will conclude the course via the creation of a comprehensive, dynamic, responsive website utilizing current technologies. 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 180 OR Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

IMD 235(3) Course ID:004795
Advanced Word Processing
Introduces Microsoft Word and its current technologies. Covers creating and integrating animation into word documents, along with developing increasing interactivity and adding audio and video into a website. Covers formatting 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 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 formatting 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 capturing, editing, and basiccompositing. Students will capture and edit 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 compositing, basic video editing and production, alpha channels, and special effects. Building on Digital Video Editing I, students will also focus on creating storyboards, quick workouts, 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
Instructs students in 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 digital video simulation. Projects will be exported and packaged for the web and DVD. Pre-requisite: IMD 250 or consent of instructor. Lecture: 3 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...
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 111(4) Course ID:004297
Clinical II
Provides content 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 112(2) Course ID:005608
Image Production & Acquisition
Provides knowledge-base related to image production and acquisition, and continues procedures instruction with emphasis on 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 211. Lecture: 3.0 credit (45 contact hours), Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

IMG 113(3) Course ID:005611
Clinical Practice II
Provides structured clinical experience through competency-based assignments focusing on the upper and lower extremities, bony and visceral thorax, abdomen, and extremities. Pre-requisite: (IMG 104 and IMG 106 and IMG 108 and IMG 109) with a minimum grade of C. Clinical: 3.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

IMG 201(3) Course ID:004298
Clinical III
Continues IMG 111 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. Requires performance of a critical evaluation of finished radiograph with emphasis on acceptable technical exposure factors and accurate patient and anatomical position. Pre-requisite: IMG 201 with a grade of C or greater. Clinical: 3.0 credits (180 contact hours).

Components: Clinical
Attributes: Technical

IMG 209(3) Course ID:005612
Clinical Practice III
Continues experience through structured sequential competency based clinical assignments to include the upper and lower extremities, bony and visceral thorax, abdomen, vertebral column, cranium, and contrast studies of the digestive, urinary, and central nervous systems, and arthrography. Pre-requisite: IMG 114 and IMG 116a and IMG 119 with a minimum grade of C. Clinical: 5.0 credits (150 contact hours).

Components: Clinical
Attributes: Technical

IMG 210(4) Course ID:004299
Radiography IV
Examines the basic concepts of medical emergency response and pharmacology related to radiography. Examines the basics of medical emergency response and pharmacology related to radiography. 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 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 211. Lecture: 3.0 credit (45 contact hours), Lab: 1.0 credit (30 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

IMG 212(4) Course ID:005613
Imaging Equipment
Focuses on the types of imaging equipment used in radiographic departments, including x-ray imaging systems, fluoroscopy, mammography, screening, 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:005614
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: IMG209 with a minimum grade of C. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
Attributes: Technical

IMG 219(6) Course ID:005618
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 imaging 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
Examines equipment and advanced modalities used to complement diagnostic radiology. Includes principles of radiation biology, radiation protection, and the systematic classification of disease. Provides for 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

IMG 221(6) Course ID:004302
Clinical V
Continues IMG 211 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 211 with a grade of C or greater. Co-requisite: IMG 220. Clinical: 6.0 credits (360 contact hours).

Components: Clinical
Attributes: Technical

IMG 224(2) Course ID:005615
Radiation Protection & Biology
Examines concepts related to radiation protection and measurement, as well as basic radiology biology principles, particularly the effects of various radiation levels on living organisms. Pre-requisite: IMG 214 and IMG 216 and IMG 219 with a minimum grade of C. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

IMG 226(1) Course ID:005616
Radiographic Pathology
Examines the basic concepts of disease and etiology with emphasis on radiographic indicators of disease and their impact on exposure factor selection. Pre-requisite: IMG 214 and IMG 216 and IMG 219) with a minimum grade of C. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
Attributes: Technical

IMG 228(2) Course ID:005619
Radiography Seminar
Examines patient care, image acquisition, and cross sectional anatomy. Pre-requisite: (IMG 201 or IMG 216) with a minimum grade of C. Lecture: 2.0 credits (30 contact hours).

Components: Lecture
Attributes: Technical

IMG 229(6) Course ID:005617
Clinical Practice V
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 230(3) Course ID:004826
Anatomy for Advanced Medical Imaging
Provides content on computed tomography and magnetic resonance imaging (CT/MRI) procedures including patient care, image acquisition, and cross sectional anatomy. 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 240(3) Course ID:006617
Pathology for Advanced Medical Imaging Modalities
Examines diseases commonly diagnosable via computed tomography (CT) and/or magnetic resonance imaging (MRI). Traces the disease or trauma process from its description, etiology, symptoms, and diagnosis with appearance on CT and/or MRI scans. 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 250(3) Course ID:004827
Computed Tomography Physics & Instrumentation
Exposes 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

IMG 260(3) Course ID:005532
Computed Tomography Imaging Procedures
Examines the procedures, positioning, and equipment involved in computed tomography (CT) imaging. 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 265(3) Course ID:004829
Magnetic Resonance Imaging Technology
Focuses on patient care and image processes of magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA). Explores topics of image formation, tissue characteristics, resolution, imaging options, and parameters, post processing, and patient characteristics. Discusses specific MRI and MRA exams for image body systems. 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 285(4) Course ID:015558
Computed Tomography Clinical Practice I
Provides a structured clinical experience through sequential competency-based assignments that focuses on the upper and lower extremities, bony and visceral thorax, abdominal and pelvic cavities, and cranial. Provides necessary clinical correlation of data acquisition concepts and basic scanning parameters. Pre-requisite: (IMG 230 and IMG 260) with a minimum grade of C; ARRT certification and completion of Radiography Program. Co-requisite: IMG 240 & IMG 250. Clinical: 4.0 credits (240 contact hours).
Components: Clinical
Attributes: Technical

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: 3credits (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 Instrucor. Lecture: 3 credits (45 contact hours).
Components: Lecture
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 110. Lecture: 2 credits (30contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

IMT 116(5) Course ID:001583
Maintenance Machining Lab
Includes the application of fundamental machining operations necessary for the proper maintenance of AC and DC motors. Co-requisite: Permission of the instructor. Lecture: 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. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, 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 maintaining 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 196(1 - 8) Course ID:001590
Instructor Consent Required
Practicum
Provides supervised on-the-job work experience related to the student’s educational objective. 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 Education program receive compensation for their work. Pre-requisite: Permission of Instructor. Co-op: 1-8 credits (75-600 contact hours).
Components: Cooperative Education
Attributes: Technical

IMT 200(4) Course ID:007372
Industrial Robotics and Robotic Maintenance
Provides the industrial maintenance student an introduction to the theory of robots including applications, basic programming components, industrial robotic safety standards, industrial robots 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 their 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

Instructor Consent Required
IMT 221(2) Course ID:001593
Industrial Maintenance Electrical Motor Controls I Lab
Includes the 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. Course: IMT 220. Laboratory: 2 credits (60 contact hours).

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

IMT 222(2) Course ID:006422
Industrial Maintenance Motor Controls II
Provides advanced study of motor controls in industry. Addresses open and closed loop control systems, servomotors, 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. Course: IMT 223. Lecture: 2 credits (60 contact hours).

Components: Laboratory Attributes: 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.

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 precautions are 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 230 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).

Components: Laboratory Attributes: Technical

IMT 240(6) Course ID:001596
Industrial Maintenance Motor Control Concepts
Addresses the diversity of control devices and applications used in industry today with safety and electrical precautions 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 241 or Consent of Instructor. Lecture: 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 IMT 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

Course Descriptions
IMT 1161(0.5) Course ID:006411
General Shop Knowledge Lab
Incorporates 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: IMT1151 or Consent of Instructor. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

IMT 1162(0.5) Course ID:006412
Vertical and Horizontal Bandsaw Operations Lab
Introduces vertical and horizontal bandsaw operations including the selection of feeds and speeds, layout, drill bit selection and sharpening, and precision drilling operations. Co-requisite: IMT 1154 or Consent of Instructor. Laboratory: 0.5 credit (15 contact hours).
Components: Laboratory

IMT 1163(0.5) Course ID:006413
Drill Press Operations and Procedures Lab
Introduces drill press operations including the selection of feeds and speeds, turning operations, and threading. Co-requisite: IMT 1154 or Consent of Instructor. Laboratory: 2 credits (60 contact hours).
Components: Laboratory

IMT 1164(2) Course ID:006414
Lathe Operations and Procedures Lab
Introduces lathe operations including lathe components, grinding tool bits, the selection of feeds and speeds, turning operations, and threading. Pre-requisite: IMT 1161 or Consent of Instructor. Co-requisite: IMT 1155 or Consent of Instructor. Laboratory: 1.5 credit (45 contact hours).
Components: Laboratory

IMT 2201(1) Course ID:006416
Introduction to Motor Controls
Addresses the importance of electrical safety and the general fundamentals of motor controls. Pre-requisite: IMT 1161 and IMT 1111 or Consent of Instructor. Co-requisite: IMT 2211. Lecture: 1 credit (15 contact hours).
Components: Lecture

IMT 2202(1) Course ID:006417
Motor Starters and Pilot Devices
Introduces the diversity of motor starters, control devices, and circuitry. Introduces the different types and operations of basic control circuits while reinforcing the common symbols used in motor control circuit diagrams as well as interpreting and drawing electrical schematics and wiring diagrams. Pre-requisite: IMT 2201 or Consent of Instructor. Co-requisite: IMT 2212. Lecture: 1 credit (15 contact hours).
Components: Lecture

IMT 2203(1.5) Course ID:006418
Milling Machine and Surface Grinder Operations and Procedures Lab
Introduces milling and surface grinding operations including vise alignment, trammng, selection of feeds and speeds, form tools, dressing grinding wheels. Pre-requisite: IMT 1161 or Consent of Instructor. Co-requisite: IMT 1155 or Consent of Instructor. Laboratory: 1.5 credit (45 contact hours).
Components: Laboratory

IMT 2221(1.3) Course ID:006421
Motor Control Circuits Lab
Explores aspects of electrical symbols and specialized motor control circuits. Pre-requisite: IMT 2221 or Consent of Instructor. Co-requisite: IMT 2222. Laboratory: 1.0 credit (30 contact hours).
Components: Laboratory

IMT 2222(0.6) Course ID:006423
Principles in Process Control and Automation
Gives an overview of open and closed loop systems and how they relate to sensors and motor controllers. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Co-requisite: IMT 2231. Lecture: 0.6 credit (30 contact hours).
Components: Lecture

Attributes: Course Also Offered in Modules

IMT 2223(0.7) Course ID:006432
Industry Standards for Control Circuit Wiring and Troubleshooting Methods
Covers industry standards related to color coding of industrial wiring control cabinets. Provides for troubleshooting techniques using electrical hand tools and developing and interpreting troubleshooting flowcharts to determine phase failure and voltage drops. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Co-requisite: IMT 2232. Lecture: 0.7 credit (10.5 contact hours).
Components: Lecture

Attributes: Course Also Offered in Modules

IMT 2231(0.5) Course ID:006434
Principles in Process Control and Automation Lab
Provides the lab component for IMT 2221. Covers open and closed loop systems and how they relate to sensors and motor controllers. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Co-requisite: IMT 2221. Lecture: 0.5 credits (15 contact hours).
Components: Laboratory

IMT 2232(0.5) Course ID:006435
Industry Standards for Control Circuit Wiring and Troubleshooting Methods Lab
Covers industry standards related to color coding of industrial wiring control cabinets. Provides for troubleshooting techniques using electrical hand tools and developing and interpreting troubleshooting flowcharts to determine phase failure and voltage drops. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Co-requisite: IMT 2222. Laboratory: 0.5 credits (15 contact hours).
Components: Laboratory

IMT 2233(1) Course ID:006436
Industry Standards for Installing Motors/Electronic Variable Speed Drives
Provides the lab component for IMT 2222. Covers industry standards related to color coding of industrial wiring control cabinets. Provides for troubleshooting techniques using electrical hand tools and developing and interpreting troubleshooting flowcharts to determine phase failure and voltage drops. Pre-requisite: IMT 110 and IMT 111 or Consent of Instructor. Co-requisite: IMT 2222. Laboratory: 0.5 credits (15 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 1151 and IMT 1160 or (IMT 110 and IMT 112) or Consent of Instructor. Lecture: 0.5. (Contact Hours7.5).
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, squaring, 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
Metalurgy 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 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 2606(1.3) Course ID:006552
Repair Decisions
Addresses the repair of dies including good grinding practice, repairing worn edges, performing shimming of decomponents, repairing forming ribs and embossments, performing electrical and welding repairs, performing hand finishing, and explaining the repair of nitrogen pressure systems. Pre-requisite: IMT 2604 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.5 credits (7.5 contact hours).
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 decomponents, repairing forming ribs and embossments, performing electrical and welding repairs, performing hand finishing, and explaining the repair of nitrogen pressure systems. Pre-requisite: IMT 2604 or Consent of Instructor. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.5 credits (7.5 contact hours).
Components: Lecture

IMT 2801(0.75) Course ID:006424
Introduction to Programmable Logic Controllers
Provides an overview of Programmable Controllers, their hardware and functions. Pre-requisite: (IMT 220 and IMT 221) with a grade of “C” or greater) or (equivalent) or Consent of Instructor). Co-requisite: IMT 2811 or Consent of Instructor. Consent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture

IMT 2802(0.75) Course ID:006425
Programming Instructions in PLCs
Provides an overview in programming Programmable Logic Controllers and Counters. Co-requisite: IMT 2812 or Consent of 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 Consent of Instructor. Consent. Lecture: 0.75 credit (11.25 contact hours).
Components: Lecture
INF 128(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 260L(1) Course ID:007285
Object Oriented Programming Laboratory
Laboratory to accompany INF 260 in which students gain hands-on experience in programming and using programming tools such as debuggers. Lab: 1.0 credit (2.0 contact hours).
Components: Laboratory
Attributes: University Course (Northern Kentucky University)

INF 282(3) Course ID:007286
Introduction to Databases
Core concepts for the design, creation, and manipulation of relational databases. Analysis of data requirements, conceptual modeling, definition of the relational model, relational database design and normalization, and database implementation; manipulation of relational databases using relational algebra withSQL. 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; 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 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 the insurance industry, the role of insurance in the economy, and the role of insurance in the legal system. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

INS 181(3) Course ID:006587
Foundations of Insurance Production
Introduces principles of insurance production and agency and sales management. Emphasizes insurance products and insurance markets in the context of personal lines coverage as well as limited commercial lines coverage. Pre-requisite: Reading and English 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

INS 182(3) Course ID:006588
Multiple Lines Insurance Production
Introduces principles of multiple lines insurance production. Emphasizes insurance products and insurance markets in the context of commercial lines coverage. Pre-requisite:
General Industry Safety
Introduces the history of the safety movement under the standards of the Occupational Safety and Health Administration (OSHA). This course provides practical training in industrial safety. The students are taught to observe general safety rules and regulations, to apply work site and shop safety rules, and to apply OSHA regulations. Lecture: 1.0 credits (15 contact hours)
Components: Lecture

CPR & First Aid
This course provides practical training in industrial safety. Students are expected to obtain certification in first aid and cardiopulmonary resuscitation. Lecture: 1.0 credits (15 contact hours)
Components: Lecture

Cardiology

Invasive Cardiology

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 cardiac catheterization lab and instruction in advanced cardiac life support (ACLS). Introduces correct techniques used by Invasive Cardiology Technologists during specific procedures performed in the cardiac catheterization lab. Discusses hemodynamics, pharmacology and calculations encountered in the cardiac catheterization lab. Pre-requisite DMS 105, Lecture: 16.0 credits (240 contact hours).
Components: Lecture
Attributes: Technical

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 for evaluation of the cardiovascular system. Discusses the monitor and electrophysiology principles, ventricular assist devices, coronary artery bypass grafts and cardiac transplantation procedures performed in the cardiac catheterization lab. Emphasizes the preparation, protocol and interventional procedures for a pediatric catheterization lab. Pre-requisite: DMS 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

JPN Japanese

Beginning Japanese I
A course in first semester Japanese language. Lecture: 4 credits (60 contact hours)
Components: Lecture
Attributes: Foreign Language, Cultural Studies

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

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
Course Descriptions

JPN 202(3) 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 115(1) Kinesiology and Health Promotion
Walking
Course ID: 002315

Components: Laboratory
Attributes: Other

KHP 107(1) Components: Laboratory
Credit may be earned in service courses; however, the same activity may not be repeated for credit. Lab: 1 credit (15 contact hours)

Attributes: Other

KHP 112(1) Components: Laboratory
Aerobics
Inclusion includes 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) Components: Laboratory
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) Components: Laboratory
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.

Components: Laboratory
Attributes: Other

KHP 124(1) Components: Laboratory
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) Components: Laboratory
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) Components: Laboratory
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 131(1) Components: Laboratory
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 135(1) Components: Laboratory
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 136(1) Components: Laboratory
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 137(1) Advanced Walking for Fitness
Instruction in a variety of motor skill 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) 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) Components: Laboratory
Lifetime Sports
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.

Components: Laboratory
Attributes: Other

KHP 142(1) Components: Laboratory
Advanced Aerobics
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. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 134(1) Intramurals
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. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 143(3) 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

Attributes: Technical

KHP 140(1) Advanced Weight Training
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. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 141(1) Components: Laboratory
Advanced Aerobics
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.

Components: Laboratory
Attributes: Other

KHP 132(1) Components: Laboratory
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.

Components: Laboratory
Attributes: Other

KHP 133(1) Components: Laboratory
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 134(1) Components: Laboratory
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) Components: Laboratory
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) Components: Laboratory
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 137(1) Components: Laboratory
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 138(1) Components: Laboratory
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 139(1) Components: Laboratory
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 140(1) Components: Laboratory
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. Assignment of specific title will occur internally in the department. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 141(1) Components: Laboratory
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. Assignment of specific title will occur internally in the department. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 142(1) Components: Laboratory
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. Assignment of specific title will occur internally in the department. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 143(1) Intramurals
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. Pre-requisite: Completion of comparable service course or demonstrated competency. Laboratory: 3.0 credit hours.

Components: Laboratory
Attributes: Other

KHP 145(3) 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: 3.0 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 people recognize and decrease risks for chronic diseases. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
KHP 190(2) Course ID:000029
First Aid and Emergency Care
Study of a first aid subject matter and orientation in the various first aid training methods. Lectures and demonstrations on first aid skills with skill training. American Red Cross Certificate made available. Lecture: 1.0 credit hour; Laboratory: 2.0 credit 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 (or consent of instructor). 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.
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 (60 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 and delegate and supervised by a licensed nurse. Pre-requisite: [MMA 100 or NAA 100 or NAA 125] and six months of work experience as a Kentucky Medicaid Nurse Aide or Consent. Lecture/Lab: 5.0 credits (105 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: 3.0 credits (45 contact hours)
Components: Lecture
Attributes: AH - Arts and Humanities, University Course (University of Kentucky)
LEAD Leadership Studies
LEAD 200(3) Course ID:006761
Introduction to Leadership Studies
The purpose of the course is to provide students a better understanding of leadership from multiple angles and perspectives. Students will explore the different ways leadership has been defined and studied. Students enrolled in this course will read leadership theory, discuss leadership concepts, and discuss cases portraying leaders who exemplify or challenge these theories. Additionally, students will explore the relevance of leadership theory and concepts to the work that will perform as future leaders in their careers and communities. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIN Linguistics
LIN 175(3) Course ID:015987
Information Literacy
A foundational course that introduces students to the cross-disciplinary skills needed to access information needs, and access and evaluate information sources. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: SB - Social Behavior Science, University Course (Northern Kentucky University)
LIT Library Information Technology
LIT 115(3) Course ID:004801
Introduction to Reference Services
Introduces library reference sources and services. Includes reference interview techniques, print and digital information sources, bibliographic and full text databases, and digital access and retrieval skills. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIT 120(3) Course ID:007416
Readers’ Advisory Services
Examines library readers’ advisory services. Includes readers’ advisory resources, library programming, book discussion groups, collection development, formats for books, ebooks and audio books, online applications, and marketing. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIT 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: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIT 132(3) Course ID:004803
Library Technical Services
Provides an overview of library technical services, including acquisitions, processing, cataloging and classification. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIT 200(3) Course ID:005218
Seminar in Kentucky Literature
Introduces Kentucky literature, recognizing, studying, and examining distinct regional differences and similarities with concentration on major contemporary and traditional Kentucky writers and their texts. 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 230(3) Course ID:004804
Web Publishing for Libraries
Introduces web publishing for library web sites, including HTML code, web page authoring software, web page design, and trends in library web sites. This is a distance education course with a service learning component. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical
LIT 240(3) Course ID:004805
Literature of Appalachian Kentucky
Introduces 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
Introduces the literature of Western 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 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:005080
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
LOM 1801(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

LOM 1802(1) Course ID:016374
Project Management Activities
Covers skills and concepts of essential project management processes, defining requirements, schedules, risk management assessment, change control, and project management software applications. Pre-requisite or Co-requisite: LOM 1801. Lecture: 1 credit (15 contact hours).

Components: Lecture

LOM 1803(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: LOM 1802. Lecture: 1 credit (15 contact hours).

Components: Lecture

LOM 2021(1) Course ID:016376
Intro to Supply Chain Mgmt
Explains the keys drivers in a supply chain and their relationship to manufacturers and distributors and the benefits of integration with those departments. Pre-requisite: LOM 102. Lecture: 1 credit (15 contact hours).

Components: Lecture

LOM 2022(1) Course ID:016377
Benefits of Supply Chain Management
Demonstrates the benefits of supply chain management in achieving supply cost reductions utilizing charts and flow plans to integrate into the workplace. Pre-requisite: LOM 2021. Lecture: 1 credit (15 contact hours).

Components: Lecture

LOM 2023(1) Course ID:016378
Utilizing Supply Chain Mgmt
Analyse and develop customer focused supply chain utilizing effective strategies. Pre-requisite: LOM 2022. Lecture: 1 credit (15 contact hours).

Components: Lecture

LSI Lockmasters 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 a criminal check, 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 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 response to other types of operations planning, and providing basic knowledge regarding the management.
of an 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: Laboratory, Lecture
Attributes: Technical

LSI 150(4) Course ID: 004407

Professional Locksmithing

Comprehensive hands-on knowledge of locks, providing the student with the information necessary to become an accomplished 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 maybe 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. Pre-requisite: LSI 160. 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 108(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 18 or less, or consent of department.

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 or a Math SAT score of 510 or above, or MA 108R (UK), or appropriate score on the math placement test. Lecture: 3 credits (45 contact hours).

Components: Lecture Course Equivalents: MT 150
Attributes: University Course (University of Kentucky)

MA 110(4) Course ID: 006622

Algebra and Trigonometry for Calculus

This course is 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 MA 123, 162, 199, 201 or 202. Credit is not available by special examination. Lecture, three hours; recitation, two hours per week. Pre-requisites: Two years of high school algebra and a Math ACT score of 23 or above, or consent of department. Lecture: 3.0 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, tilings, polyhedra, number theory and game theory. Recommended for students intending to enroll in a non-calculus based science, social science or business course. Not open to students who have credit in MA 109 or MA 112. This course is not available for credit to persons who have received credit for MA 123. Pre-requisites: Math ACT score of 28 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 (University of Kentucky)

MA 112(3) 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 111. Students who have received credit for MA 111 cannot receive credit for MA 123. Pre-requisites: Math ACT score of 28 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 (University of Kentucky)

MA 113(4) Course ID: 006626

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 MA109 (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 (University of Kentucky)

MA 114(4) Course ID: 006628

Calculus II

A continuation of MA 113, primarily stressing techniques of integration. Lecture, 3 hours; recitation, 2 hours per week. Pre-requisites: High school trigonometry or MA 112 (UK); and a grade of C or better in MA 113 (UK) or MA 132 (UK). Lecture: 3.0 credits (45 contact hours). Discussion: 1.0 credit (30 contact hours).

Components: Discussion, Lecture
Attributes: QR - Quantitative Reasoning, University Course (University of Kentucky)

MA 123(4) Course ID: 006629

Elementary Calculus and Its Applications

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 (University of Kentucky)

MA 150(4) Course ID: 006630

Supplementary Mathematics Workshop I

Lecture 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 (University of Kentucky)

MA 151(4) Course ID: 006631

Supplementary Mathematics Workshop II

Lecture 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 (University of Kentucky)
MA 210(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 (University of Kentucky)

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 (University of Kentucky)

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 (University of Kentucky)

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 (University of Kentucky)

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 (University of Kentucky)

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. Pre-requisites: Concepts related to electronic health records (EHR). Provides an overview of medical office practices. Pre-requisite: Acceptance into the Medical Assisting Program or consent of Medical Assisting Coordinator/Director.
Components: Laboratory, Lecture
Attributes: Technical

MAI 150(3) Course ID: 004092
Medical Assisting Administrative Procedures I
Examines pharmacology with concentration on prescription writing, medication administration, and specialty procedures. 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. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MAI 170(2) Course ID: 004093
Department Consent Required
Dosage Calculations
Provides a review of basic mathematics skills related to dosage calculations. Thermodynamic knowledge of the systems of measurement and conversion and application skills for dosage calculations. Lecture: 2 credits (30 contact hours).
Components: Lecture
Attributes: Technical

MAI 200(3) Course ID: 004094
Pathophysiology for the Medical Assistant
Examines pharmacology with concentration on prescription writing, medication administration, and specialty procedures. 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. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MAI 220(3) Course ID: 004095
Medical Assisting Laboratory Techniques II
Introduces laboratory procedures utilized in the physician's office laboratory. Pre-requisites: MA 114 and (CL A 131 or CLA 137 or BIO 139) and/or (AHS 115 or AHS 120 or MIT 103) or consent of Medical Assisting Coordinator/Director. Pre-requisites: MAI 120 with a grade of "C" or greater. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MAI 230(3) Course ID: 004096
Department Consent Required
Medical Insurance
Examines fundamentals of insurance processing and coding for the medical office, with focus on proper procedures for accurate coding systems using the CPT, HCPCS and other coding systems. 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 examinations, diagnostic testing and treatment modalities. Provides an overview of medical office practices. Pre-requisite: MAI 140 with a grade of "C" or greater. Course Coordinator/Director.
Components: Laboratory, Lecture
Attributes: Technical

MAI 250(3) Course ID: 004098
Medical Assisting Administrative Procedures II
Examines pharmacology with concentration on prescription writing, medication administration, and specialty procedures. 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. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MAI 270(3) Course ID: 004100
Pharmacology for the Medical Assistant
Examines pharmacology with concentration on prescription writing, medication administration, and specialty procedures. 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. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

MAI 281(1) Course ID: 004101
Medical Assisting Practicum
Provides practical experience (unpaid) through observation and work assignments in a healthcare setting. Pre-requisite: Consent of Program Coordinator/Director.
Components: Clinical
Attributes: Technical

MAI 282(3) Course ID: 004102
Medical Assisting Internship
Provides practical experience (unpaid) through observation and work assignments in a healthcare setting. Pre-requisite: Consent of Program Coordinator/Director.
Components: Clinical
Attributes: Technical

MAI 284(2 - 3) Course ID: 015672
Medical Assisting Internship
Provides practical experience (unpaid) through observation and work assignments in a healthcare setting. Pre-requisite: Consent of Program Coordinator/Director.
Components: Clinical
Attributes: Technical

MAI 289 (1 - 2) Course ID: 016764
Medical Assisting Assessment Preparation
Prepares student to assume the role of the Medical Assistant by preparing them for successful credentialing while providing the opportunity to apply critical thinking, cognitive skills and performance competencies. Pre-requisite: Consent of Program Coordinator. Laboratory: 1.0-2.0 credit hours (30-60 contact hours).
Components: Laboratory
Attributes: Technical
MAT 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 a maximum of six credit hours. Lecture: varies; Laboratory: varies. Pre-requisite: Consent of instructor.
Components: Laboratory; Lecture
Attributes: Technical

MAT Mathematics

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 Post Secondary Education. Note: A passing grade in this course does not necessarily indicate that all prerequisites 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 50(1 - 2) Course ID:004555
Developmental Mathematics Workshop
Provides supplemental academic support such as extra class sessions, tutoring, and/or increased monitoring to promote student success. May be associated with any developmental math course offered through KCTCS and may be repeated for each math course. Credit cannot be received by special exam. Co-requisite: Set by instructor. Laboratory: 1-2 credits (30-60 contact hours).
Components: Laboratory; Lecture
Attributes: Remedial - Mathematics

MAT 55(3) Course ID:004555
Pre-Algebra
Includes operations on integers, decimals and fractions. Introduces exponents, square roots, percents, ratios, proportions, prime factorization, basic geometry, algebraic expressions, basic linear equations, and applications. Pre-requisite: KCTCS placement exam. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics, Course Also Offered in Modules

MAT 55A(1.6) Course ID:007338
Integers, Fractions and Decimals
Covers the properties of real numbers, prime factorization of whole numbers, rounding of whole numbers, and decimals to an indicated place value. Includes basic operations, order of operations, and absolute value. Integers, fractions, and decimals. Permits the conversion among fractions, decimals, and percents; evaluation of whole number powers of integers, fractions, and decimals; and the evaluation of square roots of perfect squares of integers, fractions, and decimals. Pre-requisite: MAT 55A. Placement exam. Lecture: 1.6 credits (24 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics

MAT 55B(0.7) Course ID:007339
Algebraic Expressions
Includes the evaluation of algebraic expressions, simplifying algebraic expressions, solving problems involving ratio and proportion, and solving problems involving percent. Pre-requisite: MAT 055A. Lecture: 0.7 credits (10.5 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics

MAT 55C(0.7) Course ID:007340
Beginning Linear Equations
Uses both the addition and multiplication properties to solve a linear equation. Includes how to determine the length of the unknown side of a right triangle using the Pythagorean Theorem and to determine the perimeter, circumference, area, surface area, and volume of basic plane figures and solids. Covers how to solve applied problems using these competencies with real world applications. Pre-requisite: MAT 055B. Lecture: 0.7 credits (10.5 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics

MAT 6(3) Course ID:007375
Intro to Workplace Mathematics
Prepares students for Business Mathematics, Applied Mathematics, and Technical Mathematics. Includes properties of algebra, using formulas, solving linear equations, percentages, ratios, proportions, plotting points, graphing lines, exponents, and measurement. Encourages applications of algebra and effective use of technology. Pre-requisite: MAT 055 or equivalent as determined by KCTCS placement examination. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics

MAT 6(5) 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 exam. 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:007343
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 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: 0.8 credits (12 contact hours).
Components: Lecture
Attributes: Remedial - Mathematics

MAT 65D(0.5) 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 056C. Lecture: 0.5 credits (7.5 contact hours).
Components: Laboratory
Attributes: Remedial - Mathematics

MAT 65E(0.4) Course ID:007345
Systems of Linear Equations
Includes solving systems of linear equations in two variables using multiple methods and solving applied problems using these competencies with real world applications. Pre-requisite: MAT 055D. 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-acourse 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 85(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 quadratics, radical, and rational 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 96(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 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: 2.0 credits (30 contact hours). Prerequisite: 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 logic and symbolism. Emphasizes applications in the various technologies. Includes 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, Course Also Offered in Modules

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, Course Also Offered in Modules

MAT 126(3) Course ID:004562
Technical Algebra and Trigonometry
Examines mathematics from algebra and trigonometry. Includes vectors, phase algebra, variation, trigonometric functions, coordinate systems, system of linear equations, quadratic, rational, exponential and logarithmic equations. Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Quantitative Reasoning AAS

MAT 146(3) Course ID:002375
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 10 or above, 2. Successful completion of Intermediate Algebra, MAT075, MAT126, or equivalent, or 3. KCTCS placement exam recommendation. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: QR - Quantitative Reasoning, Course Also Offered in Modules

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 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 in rectangular and polar coordinates, and solving trigonometric equations. Emphasizes applications in each topic. (Students may not receive credit for both MAT 155 and any other trigonometry or precalculus course.) Lecture: 3 credits (45 contact hours). Pre-requisite: 1. Math ACT score 22 or above, 2. Math ACT score of 19 with concurrent MAT150. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 4. Placement exam recommendation.

Components: Lecture Course Equivalents: MAT 154, MAT 155
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 specialization. The course is not available for credit to persons who have received credit for college algebra/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 college algebra/trigonometry course. 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, Course Also Offered in Modules

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, 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:004564
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 number higher than MAT100. Lab: 1.0 - 2.0 credits (30-60 contacthours).

Components: Laboratory
Attributes: Other

MAT 195(1 - 2) Course ID:015479
Mathematics Workshop
Mathematics Workshop promotes student success in mathematics by providing supplemental instruction in the form of extra class sessions. Co-requisite: Mathematics course number higher than MAT100. Lab: 1.0-2.0 credits (30-60 contacthours).

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: If yes, list; 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 1503(0.8) Course ID:006148
Exponential and Logarithmic Functions (Exponential & Logarithmic Fct)
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 1601(0.7) Course ID:016544
Graphing Techniques
Prepares students to enroll in a calculus sequence. Includes graphical techniques for functions and circles. Pre-requisite: One of the following: 1) Math ACT score of 23 or above; 2) Placement exam recommendation; or 3) Consent of instructor. Lecture: 0.7 credits (10.5 contact hours).
Components: Lecture

MAT 1602(0.9) Course ID:016545
Functions
Prepares students to enroll in a calculus sequence. Includes operations on polynomial and rational functions, combinations of functions, complex numbers, and the difference quotient. Pre-requisite: MAT 1601. Lecture: 0.9 (13.5 contact hours)
Components: Lecture

MAT 1603(0.9) Course ID:016546
Exponent and Log Functions
Prepares students to enroll in a calculus sequence. Includes the properties of inverse functions, specifically exponential and logarithmic functions. Pre-requisite: MAT 1602. Lecture: 0.9 (13.5 contact hours)
Components: Lecture

MAT 1604(0.9) Course ID:016547
Trigonometric Functions
Prepares students to enroll in a calculus sequence. Includes an introduction to trigonometric functions through the unit circle and through the right triangle. Pre-requisite: MAT 1603. Lecture: 0.9 credits (13.5 contact hours)
Components: Lecture

MAT 1605(0.9) Course ID:016548
Applications of Trigonometry
Prepares students to enroll in a calculus sequence. Includes applications of trigonometry including proving identities, solving equations, graphing, solving triangles, and using polar coordinates. Pre-requisite: MAT 1604. Lecture: 0.9 (13.5 contact hours)
Components: Lecture

MAT 1606(0.7) Course ID:016549
Conic Sections
Prepares students to enroll in a calculus sequence. Includes conic sections and solving systems of nonlinear equations. Pre-requisite: MAT 1605. Lecture: 0.7 credits (10.5 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 continuity 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, increasing/decreasing 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 with 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 the area under a curve and between two curves. Find the integral of functions using algebraic, 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

MAT 1751(1) Course ID:016550
Limits
Examines limits in one-variable calculus. Pre-requisite: One of the following: 1) College Algebra and Trigonometry, or equivalent, with grades of “C” or higher; 2) MAT 1605 and 27 or above; 3) Placement exam recommendation; or 4) Consent of instructor. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

MAT 1753(1) Course ID:016552
Differentiation Applications
Examines one-variable calculus differentiation of algebraic and trigonometric functions with applications. Pre-requisite: MAT 1752. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

MAT 1754(1) Course ID:016558
Integration
Examines integration of algebraic and trigonometric functions with applications in one-variable calculus. Pre-requisite: MAT 1753. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MAT 1755(1) Course ID:016559
Transcendental Functions
Examines differentiation and integration of exponential, logarithmic, hyperbolic, and inverse trigonometric functions with applications in one-variable calculus. Pre-requisite: MAT 1754. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

MAT 1851(1.2) Course ID:016560
Applications of Integration
Examines applications of integration including volumes of revolution, arc length, center of mass, and work. Pre-requisite: Calculus I, or equivalent, with grade of “C” or higher, or Consent of instructor. Lecture: 1.2 credits (18 contact hours).
Components: Lecture

MAT 1852(1.3) Course ID:016561
Advanced Integration Methods
Examines advanced integration techniques in one-variable calculus. Pre-requisite: Calculus I, or equivalent, with grade of “C” or higher, or Consent of instructor. Lecture: 1.3 hours (19.5 contact hours).
Components: Lecture

MAT 1853(1.3) Course ID:016562
Sequences and Infinite Series
Examines sequences and infinite series. Pre-requisite: Calculus I, or equivalent, with grade of “C” or higher, or Consent of instructor. Lecture: 1.3 credits (19.5 contact hours).
Components: Lecture

MAT 2052(0.6) Course ID:016756
Rational Numbers
Includes models of fractions and decimals; operations, repeating and non-repeating decimals; relationships, fractions, decimals, percents and ratios, and applications. Pre-requisite: MAT 2051. Lecture: 0.6 credits (9 contact hours).
Components: Lecture

MAT 2061(0.75) Course ID:016760
Geometry
Includes geometric visualization skills and representations of two- and three-dimensional shapes; two-dimensional symmetries; basic fundamental geometric objects, angles, plane isometries, congruence, similarity and proportional reasoning; and software to explore shapes. Pre-requisite: MAT 146 or MAT 150 or equivalent, with a minimum grade of “C”. Lecture: 0.75 credits (11.25 contact hours).
Components: Lecture

MAT 2062(0.75) Course ID:016761
Measurement
Includes identifying and comparing standard and non-standard systems of units; appropriateness and estimation of units, measurement, length, area, volume, and surface area and their relationships, and calculation of measurement; composite regular and non-regular shapes. Pre-requisite: MAT 2061- Geometry. Lecture: 0.75 credits (11.25 contact hours)
Components: Lecture

MAT 2063(0.75) Course ID:016762
Data and Statistics
Includes describing and understanding data; dispersion and measures of central tendency; forms of graphical representation, communication and comparison; communicating conclusions through summary statistics; and recognizing ways that statistics and graphic displays can be misleading. Pre-requisite: MAT 2062- Measurement. Lecture: 0.75 credits (11.25 contact hours)
Components: Lecture

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.
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, including 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 159) and (AHS 115 or CLA 131 or QST 103) and Computer Literacy and MBS 100) with a grade of C or better) or consent. Co-requisite: MBS 120.

Components: Lecture
Attributes: Technical

MBS 120(8) Course ID:001670 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 159) and (AHS 115 or CLA 131 or QST 103) and Computer Literacy and MBS 100) with a grade of C or better) or consent. Co-requisite: 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 Mechanical Engineering

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: 2.0 credit hours; Laboratory: 4.0 credit 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.

Components: Lecture
Attributes: Technical

MES Mechatronic Systems

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 to the 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 Mechatronic 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 Programmable 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

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 required of today’s manufacturing workers. Includes the nationwide Manufacturing Skill Standards Council (MSSC) System based upon federal-endorsement standards. Offers both entry-level and incumbent worker 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 Mechatronic systems and the operation of electrical, mechanical, pneumatic/hydraulic, and Programmable Logic Control components in an advanced manufacturing system. Presents detailed explanations 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: 3.0 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 student to troubleshoot amblitude 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: 3.0 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 Mechatronic 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: 2.0 credit hours (30 contact hours).

Components: Lecture
Attributes: Technical

MFG 175(2) Course ID:006672 Lean Operations

Introduces students to the principles and practices of lean operations. Employs a lean simulation and examples from Toyota and other lean practitioners to introduce students to lean practices. Discusses Total Productive Maintenance. Lecture/Lab: 0.5 credits (7.5 contact hours).

Components: Lecture

MFG 175(3) 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:004992 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 102(3) Course ID:004997 Personal Finance

Information needed to make intelligent choices and take control of one's financial well-being. Emphasizes personal finance and financial decision making. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

MGT 160(3) Course ID:004899 Introduction to Business

Business careers, terminology, and the interpersonal relationships 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 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: BAS 160 or MGT 160 or consent of instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture 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: 3.0 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(2) 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: MGT 283. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MGT 267(2) 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
Provides students with an overview of management, beginning with the key functions of planning and decision making, organizing, leading and controlling. Explores the many aspects of management including human behavior, motivation, leadership, change, and learn. Pre-requisite: BAS 160 or MGT 160 or consent of instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

MGT 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 delegating, motivating employees, team-building, conflict management, coaching and managing change. Pre-requisite: BAS 283/MGT 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, 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

MIL 101(2) Course ID:015681
Military Science
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, Mountain training (which includes terrain, tools, and skills, rope management, knots, and rappelling/ belaying techniques), and Basic Marksmanship. Additionally, cadets will receive an overview of Army Officering and the leadership skill necessary to succeed in any career. Special attention will be given to the opportunities afforded as Army officer. Satisfactory completion of this course may be used to fulfill a General Education Category Requirement at Western Kentucky University (WKU). Lecture: 2.0 credits (2 contact hours).
Components: Lecture Attributes: Technical

MIL 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: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MIL 106(3) Course ID:004014
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 GST 110 and (ENG 101 or GST 108) and (AHS 115 or CLA 131 or MGT 103). Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MIL 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: MIL 104, BIO 135 or Equivalent. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MIL 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 avairity of payment systems emphasizing payment fraud and/or abuse. Pre-requisite: MIL 204 or MBS 120. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MIL 206(3) Course ID:004106
Medical Transcription
Applies advanced concepts of medical transcription and provides advanced practice. Pre-requisite: MIL 106 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MIL 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: MIL 103 or AHS 115 or CLA 131 or Consent of Instructor. Lecture: 1.0 credit (15 contact hours).
Components: Lecture Attributes: Technical

MIL 217(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: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical
### MIT 219(3) Course ID: 008970
**Coding Exam Preparation**
Prepared to design medical coding students to take and pass the certifying exam to become a professional outpatient coder as offered by AACP or PHIA. Includes outpatient coding cases and review of medical terminology, basic anatomy, and physiology. Pre-requisite: MIT 204 and MIT 205 or MBS 120. Lecture: 3.0 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 general business processes. Pre-requisite OR Co-requisite: MIT 230, MIT 217, MIT 104. Lecture: 3.0 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: 3.0 credits (45 contact hours).

**Components: Lecture**
**Attributes:** Technical

### MIT 230(3) Course ID: 004109
**Medical Information Management**
Identifies and applies rules and regulations of medical filing systems and procedures. Emphasizes management of both hard copy and magnetic media using alphabetic, numeric, chronic, and color-coded filing systems. Concept mastered for file retention and archiving. Discusses legal and ethical aspects of medical records. Pre-requisite OR Co-requisite: Computer Literacy Course. Lecture: 3.0 credits (45 contact hours).

**Components: Lecture**
**Attributes:** Technical

### MIT 295(3) Course ID: 008971
**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 real-world work situations within the MIT field. Pre-requisite: Consent of Program Coordinator. Lecture: 1.0 credit (15 contact hours). Practicum: 2.0 credits (120 contact hours).

**Components: Lecture, Practicum**
**Attributes:** Technical

### MIT 296(1 - 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 instructor. Pre-requisite: Consent of Program Coordinator. Practicum: 1.0 - 3.0 credits (45-135 contact hours).

**Components: Practicum**
**Attributes:** Technical

### MIT 1031(1) 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**

### MIT 1032(1) Course ID: 016394
**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) Course ID: 016395
**Diagnostics and Pharmacology**
Introduces the nervous, endocrine, reproductive systems as well as eyes and ears. Introduces medical terminology to pharmacology and diagnostic and imaging procedures. Pre-requisite: MIT 1032. Lecture: 1.0 credit (15 contact hours).

**Components: Lecture**

### MIT 1041(1) Course ID: 016396
**Intro to Medical Insurance**
Examines procedure coding using current government mandated coding systems. Pre-requisite: MIT 2081 or Consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 1042(1) Course ID: 016397
**Medical Coding Overview**
Examines various coding systems. Pre-requisite: MIT 1041. Lecture: 1.0 credit (15 contact hours).

**Components: Lecture**

### MIT 1043(1) Course ID: 016398
**Intro to Medical Forms**
Examines general insurance procedures and forms. Pre-requisite: MIT 1042. Lecture: 1.0 credit (15 contact hours).

**Components: Lecture**

### MIT 2041(1) Course ID: 016399
**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) Course ID: 016400
**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) Course ID: 016401
**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 2081(1) Course ID: 016843
**Diagnosis Coding**
Examines diagnosis coding using current government mandated coding systems. Pre-requisite: MIT 2081 or Consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2082(1) Course ID: 016852
**Procedure Coding**
Examines procedure coding using current government mandated coding systems. Pre-requisite: MIT 2081 or Consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2083(1) Course ID: 016853
**Coding Practice and Case Studies**
Reinforces coding through practice and case studies in the inpatient hospital setting. Pre-requisite: MIT 2082 or Consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2171(1) Course ID: 016847
**Careers in the Medical Office**
Analyzes professional and career opportunities in the medical office. Pre-requisite: MIT 2081. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 1043(2) Course ID: 016848
**Records Management**
Provides knowledge of records management and medical abbreviations and terminology in the medical office. Pre-requisite: MIT 2171. Pre-requisite OR Co-requisite: OST 110. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2173(1) Course ID: 016849
**Admin and Financial Management**
Provides knowledge of administrative responsibilities and financial administration in the medical office. Pre-requisite: MIT 2172. Pre-requisite OR Co-requisite: OST 110. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2241(1) Course ID: 016875
**Managing the Medical Office**
Emphasizes the healthcare setting, medical office communications, and human resource management. Pre-requisite OR Co-requisite: MIT 230, MIT 217, MIT 104. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2242(1) Course ID: 016876
**Managing the Medical Record**
Focuses on the correct use, care, regulations and rules concerning medical records. Pre-requisite OR Co-requisite: MIT 2241, MIT 230, MIT 217, MIT 104. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2243(1) Course ID: 016877
**Medical Office Revenue Cycle**
Emphasizes accounting and payroll as well as marketing of the medical office. Pre-requisite OR Co-requisite: MIT 2242, MIT 230, MIT 217, MIT 104. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 228(3) Course ID: 008340
**Electronic Medical Records**
Provides a working knowledge of computerized medical records software in a variety of healthcare facilities. Pre-requisite: MIT 217. Lecture: 3.0 credits (45 contact hours).

**Components: Lecture**
**Attributes:** Technical

### MIT 2282(1) Course ID: 016404
**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 1043(3) Course ID: 016403
**Intro to Medical Insurance**
Examines procedure coding using current government mandated coding systems. Pre-requisite: MIT 2081 or Consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**

### MIT 2282(1) Course ID: 016404
**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: MIT 2282 or consent of instructor. Lecture: 1.0 credit (15 contact hours).

**Components: Lecture**

### MIT 2283(1) Course ID: 016405
**Clinical Tools and Procedures**
Provides a working knowledge of computerized medical records software to complete scenario-based projects. Focuses on templates and create/analyze reports. Emphasizes test and diagnosis codes. Pre-requisite: MIT 2282 or consent of instructor. Lecture: 1.0 credits (15 contact hours).

**Components: Lecture**
Course Descriptions

**MKT 282(3) Course ID:004915**

**Principles of Marketing**
Introduces the marketing function and how it is organized in various types of business organizations. Focuses on the marketing mix of product, price, distribution, and promotion with attention to the marketing concept. Explores the impact of social responsibility and international marketing on the marketing function. Pre-requisite: BAS 160 or MGT 160 or consent of instructor. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**MKT 290(3) Course ID:004919**

**Advertising and Promotion**
The principles of advertising will be introduced to the student. Topics will include economic and social aspects; advertising research; media strategy; consumer behavior; and legal issues in advertising. Pre-requisite: BAS 282/MKT 282. Lecture: 3 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**MLT 119(3) Course ID:004179**

**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: Admittance into the MLT program or permission of the MLT program director/coordinator. Lecture: 2.0 credits (37.50 contact hours)

**Components:** 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, laboratory automation, use of media, specimen processing, cultivation and identification of bacteria, and antimicrobial susceptibility testing. Pre-requisite: ([MLT 101 and MLT 119] or B/O 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: Immunology, pathology, virology, and mycobacteriology. 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. Lecture: 1.0 credits (15 contact hours), Lab: 0.5 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical

**MLT 101(3) Course ID:004073**

**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, 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/Lab: 3.0 credits (75 contact hours)

**Components:** Laboratory, Lecture

**Attributes:** Technical

**MLT 112(2) Course ID:004177**

**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 or permission of the MLT program director/coordinator. Pre-requisite Or Co-requisite: MLT101 or PHB 170. If taken as a pre-requisite, a minimum grade of "C". Lecture/Lab: 2.0 credits (45 contact hours).

**Components:** Lecture

**Attributes:** Technical
of the clinical laboratory. Pre-requisite: MLT 208 with a grade of "C" or better OR permission of the MLT Program Director/MLT Clinical Coordinator. Lecture/Lab: 2.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical
MLT 215(4) Course ID:004183
Hematology I
Covers hemostasis and classic methodologies of standard hematology procedures. Includes the principles of various automated hematology analyzers, histograms and scattergrams. Provides students with the opportunity to perform routine hematology and coagulation procedures, correlate laboratory data to aid in diagnosis, and understand 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 admission into the MLT program OR permission by MLT program coordinator. Lecture/Lab: 4.0 credits (105 contact hours).

Components: Lecture
Attributes: Technical
MLT 216(3) Course ID:004184
Hematology II
Continues the study of hematology. 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 hematology procedures. Includes collection and processing of proper specimens, performance of quality control, and analysis of fundamental hematological parameters to aid in diagnosis. Pre-requisite: Admission into the MLT program OR permission of the MLT Program Director/MLT Clinical Coordinator. Lecture/Lab: 3.0 credits (60 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 hematological procedures. Pre-requisite: Pre-requisite: A grade of C or better in MLT 217 OR permission of the MLT Program Director/MLT Clinical Coordinator/Lecture/Lab: 4.0 credits. (75 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 101 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 diseases states, hemolytic disease, and HLA markers. Pre-requisite: MLT 225 or permission by MLT Program Director/Coordinator. Lecture/Lab: 2.0 credits (45 contact hours).

Components: 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 101 with a grade of "C" or greater; permission of MLT program director/coordinator. Lecture/Lab: 4 credits (105 contact hours).

Components: Lecture
Attributes: Technical
MLT 233(3) 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, lipoproteins, 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
Introduction to Clinical Chemistry
Introduces the student to a variety of automated instrumentation and methodologies of selected chemistry test procedures. Exposes student to the basic principles as well as the techniques used in clinical chemistry to assess carbohydrates, non-protein nitrogen compounds, amino acids and proteins, lipids and lipoproteins, and enzymes as related to clinical diagnosis. Acquaints the student with basic laboratory mathematics and quality assurance procedures utilized within the clinical laboratory. Pre-requisite: Admission into MLT program OR permission of the MLT Clinical Coordinator/MLT Program Director. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical
MLT 248(3) Course ID:006404
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/Lab: 3.0 credits (60 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/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 ensure 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 MLT program OR permission by MLT Program Director/Coordinator. Practicum: 4-5 credits (240-300 contact hours).

Components: Practicum
Attributes: Course Also Offered in Modules, Technical
MLT 279(4 - 5) Course ID:004254
Practicum II
Develops performance skills and professional attitude in the student in assigned areas of the clinical laboratory. Utilizes and depends upon external institutions to ensure 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 MLT program OR permission by MLT Program Director/Coordinator. Practicum: 4-5 credits (240-300 contact hours).

Components: Practicum
Attributes: Course Also Offered in Modules, Technical
MLT 1191(1.5) Course ID:005338
Applied Laboratory Part 1
Prepares the MLT student for clinical rotation into the major areas of the laboratory. Includes practical application in Hematology, Clinical Microbiology, and Urinalysis. 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 2
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 278(1 - 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 ensure 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 or admission into the program. Practicum: 2 - 2.5 credits (105-150 contact hours).

Components: Practicum
MLT 278A(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 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 to the MLT program. Practicum: 2 - 2.5 credits (120-150 contact hours).

Components: Practicum

MLT 2791(2 - 2.5) Course ID:005342

Practicum II Part 1

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 work of providing work experiences in acinical 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 2791 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 work of providing work experiences in an 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 2791 with a grade of "C" or greater. Practicum: 2 - 2.5 credits (120-150 contact hours).

Components: Practicum

MNA Medicaid Nurse Aid

MNA 100(3) Course ID:001772

Medicaid Nurse Aid

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 nursingskills. Note: Faculty and clinical sites must comply with applicable Federal and Kentucky laws and regulations including but not limited to 42 USC 1336b and 907 KAR 1450. Lecture: Lab: 3.0 credits (75 contact hours). (45:1ratio).

Components: Lecture Course Equivalents: NAA 100

Attributes: Technical

MNG Mining Technology

MNG 102(3) Course ID:007356

Introduction to Mine Engineering and Mining Technology

Provides orientation to the mining engineering and mining technology programs. Includes introduction to key mining engineering activities and functions, mining methods and equipment, and health and safety subsystems. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

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, permissibility, underground and surface law, solid-state, and national instruments and applications. Pre-requisite: MNG 125. Lecture: 4.0 credit hours (60 contact hours).

Components: Lecture

Attributes: Technical

MNG 125(1) Course ID:005266

Mining Electricity 1 Lab

Encompasses the elementary labor 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, permissibility and maintenance. Co-requisite: MNG 123. Laboratory: 1.0 credit hours (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, workenvironment, 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. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: 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 laboratoryenvironment. Focuses on the skills associated with the information taught in the paired underground minelecture course. Pre-requisite OR Co-requisite: MNG 160. Lab: 1.0 credit (30 contact hours).

Components: Laboratory

Attributes: 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, workenvironment, ground control, health and safety standards, transportation, communication, compressed gas cylinders, explosives, mine gases and instruments, electrical hazards, accident prevention, and emergency procedures. Lecture: 2.0 credits (30 contact hours).

Components: Lecture

Attributes: Technical

MNG 171(1) Course ID:006649

Elements of Surface Mining Lab

Applies the principles and policies of mining methods, operations, and procedures in a controlled laboratoryenvironment. Focuses on the skills associated with the information taught in the paired lecture course for surface mining. Pre-requisite OR Co-requisite: MNG 170. Lab: 1.0 credit (30 contact hours).

Components: Laboratory

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. Relates 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 ofcheking and maintaining underground permissible equipment in a permissible condition. Includes plane flange joints, step flange joints, slip joints, threaded joints, restraining of cables, power centers, fire extinguishers, cables, and other areas of permissibility. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture

Attributes: Technical

MNG 190(3) Course ID:005206

Mine Emergency Technician

Applies principles and procedures to identify and treat life-threatening conditions. Offers safety training needed to receive a Mine Emergency Technician certificate from Kentucky Department of Mines and Minerals after successful completion of the optional test. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

MNG 256(3) Course ID:015854

Mining Methods

Introduces underground and surface mining methods and practices in coal and hard rock mines. Includes topics inmetallurgical 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

MNG 274(3) Course ID:000722

Mine Safety

Introduces mine safety, program organization, safety training, mine rescue operations, and the role of state and federal governments in mine safety. Includes field trips as an integral part of the course. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

MNG 286(3) Course ID:000738

Roof Control and Ventilation

Involves an in-depth study of roof and rib control, and coal mine ventilation. Includes methods of inspection and reporting potential safety hazards, reading roof control plans, processes and procedures involving mine resistance, law, and minimum standards. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

MNG 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 Medical Office Radiology

MOR 100(6) Course ID:001773

Medical Office Limited 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: AHS 109 and AHS 115 with a grade of C or better. Co-requisite: MOR 115. Lecture: 4.0 credits (60 contact hours). Lab: 2.0 credits (60 contact hours).

Components: Laboratory

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 contacthours).  
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 license. 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 117 Advanced Medical Office Radiology Clinical. Lecture: 4.0 credits (60 contact hours). Lab: 2.0 credit (60 contact hours).  
Components: Laboratory  
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. Lecture: 4.0 credits (60 contact hours). Lab: 2.0 credit (60 contact hours).  
Components: Clinical  
Attributes: Technical  
MRN Marine Technology  
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 preventmarine accidents or casualty. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, Technical  
MRN 103(3)  
Course ID:007413  
Marine Crew Wellness  
Examines how nutrition, exercise, and disease affect the crewmembers' ability to maintain a U.S. Coast Guardlicense. Focuses on nutrition and exercise programs while working, and prevention of disease. Lecture: 3 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 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 specific 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 interpretation of the rules. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  
MRN 202(3)  
Course ID:006711  
Piloting and Navigation  
Identifies the effect of inland waterway prevailing conditions on vessels; provides instruction on lockling 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 environmentalpractices of vessels on the inland waterway systems and the governing agencies which establish industry regulations. Lecture: 3 credits (45 contact hours).  
Components: Lecture  
Attributes: Course Also Offered in Modules, 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 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 inlandriver 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 cooperating operation systems. Lecture/Lab: 5 credits (105 contact hours).  
Components: Lecture  
Attributes: Technical  
MRN 207(3)  
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 (45 contact hours).  
Components: Lecture  
Attributes: Technical  
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 andthe movement of cargos. Lecture: 3.0 credits (45 contact hours).  
Components: Lecture  
Attributes: Technical  
MRN 212(3)  
Course ID:007414  
Marine Fluid Systems  
Incorporates practical experience in fluid power theory, component identification and application, schematicreading, and basic calculations related to marine fluid systems. Lecture/Lab: 5 credits (105 contact hours).  
Components: Lecture  
Attributes: Technical  
MRN 299(6)  
Course ID:006720  
Marine Co-Op Experience II  
Gives students further experience in a higher level position in the marine industry. Provides supervised-on-the-job work 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 1000(1)  
Course ID:015787  
Marine Terminology and Safety  
Provides fundamental terminology and safety concepts expected of personnel working aboard an inland towing vessel. Instructors: 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: MRN1001. 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 1011. 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(1) 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
Weather Forecasting
Introduces weather forecasting for safe and efficient voyage. Lecture: 1.5 credits (22.5 contact hours).
Components: Lecture

MRN 1032(1.5) Course ID:015796
Maritime Weather
Introduces maritime weather as it relates to voyages. 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 2002(1) Course ID:016380
Shipboard Deck Safety
Provides specifics of training and safety for towboat personnel. Pre-requisite: MRN 2001. Lecture: 1.0 credit (15 contact hours).
Components: Lecture

MRN 2003(1) Course ID:016381
Shipboard Deck Rigging
Provides specifics on rigging procedures for towboat personnel. Pre-requisite: MRN 2002. Lecture: 1.0 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 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
Introduces the theory of electricity with an emphasis on power systems, circuits, and safety procedures needed to maintain electrical systems aboard towboat 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 towboat vessels. Pre-requisite: MRN 2041. Lecture/Lab: 1.67 credits (35 contact hours).
Components: Lecture

MRN 2063(2) Course ID:016392
Marine Diesel Theory
Introduces the operation and components of a marine diesel engine with emphasis on diesel engine theory. Pre-requisite: MRN 2062. Lecture/Lab: 2.0 credits (45 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
Introduces 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: Lecture

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 Material Science Engineering

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

MSG 100(4) Course ID:003986
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: (CLA131 or OST103 or AHS115). Co-requisite: MSG 125. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

MSG 110(4) Course ID:003987
Musculoskeletal Anatomy and Physiology II
Introduces the skeletal system and major joint articulations. Integrates the skeletal system with the muscular system, beginning with basic terminology and advancing to the fundamental connection with muscle and neuromuscular tissue. Pre-requisite: AHS 115 or CLA 131 or MIT 103. Lecture/Lab: 4 credits (90 contact hours).
Components: Lecture
Attributes: Technical

MSG 117(4) Course ID:016866
Musculoskeletal Anatomy & Physiology I
Details muscular interactions at major joint articulations including biomechanical concepts. Expands students' abilities to locate and affect 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 119(4) Course ID:016867
Musculoskeletal Anatomy & Physiology II
Details muscular interactions at major joint articulations including biomechanical concepts. Expands students' abilities to locate and affect muscles, joints, and innervations of the upper and lower extremities. Pre-requisite: MSG 125. Lecture/Lab: 4.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

MSG 125(3) Course ID:003990
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 132(3) Course ID:016868
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 117. Lecture/Lab: 3.0 credits (105 contact hours).
Components: Lecture Attributes: Technical

MSG 134(3) Course ID:016869
Massage Techniques II
Extends students’ knowledge of the skeletal system and major joint articulations. Introduces the musculoskeletal system of the human body, beginning with basic terminology and advancing through the fundamentals of musculan and neuromuscular tissues. Enhances the students’ skills for delivering an improved one-hour full body therapeutic massage. Pre-requisite: MSG 132. Lecture/Lab: 3.0 credits (105 contact hours).
Components: Lecture Attributes: Technical

MSG 153(3) Course ID:003991
Massage Techniques II
Provides extensive knowledge of the skeletal system and major joint articulations and an introduction to the muscular system of the human body from beginning terminology through the study of muscle tissue and neuromuscular fundamentals. Pre-requisite: MSG 100 and MSG 125. Lecture: 1.0 credit (15 contact); Lab: 2.0 credits (60 contact).
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 integrating them in an applied clinical setting. Co-requisite: MSG110. Lecture: 1.0 credit (15 contact hours), Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory, Lecture Attributes: Technical

MSG 210(3) Course ID:005526
Advanced Clinical Massage II
Prepares students to integrate their massage practice into a clinical setting of rehabilitation of orthopedic conditions and injuries. Includes patient assessment, advanced orthopedic and rehabilitative and preventative massage techniques. Pre-requisite: MSG205. Lecture: 1.0 credit (15 contact hours), Laboratory: 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 linked to the biological systems of the body. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

MSG 223(3) Course ID:016870
Advanced Clinical Massage I
Prepares the student to integrate the knowledge and skills of advanced massage techniques into a clinical setting. Pre-requisite: MSG 134. Lecture/Lab: 3.0 credits (105 contact hours).
Components: Lecture Attributes: Technical

MSG 234(3) Course ID:016873
Advanced Clinical Massage II
Prepares students to integrate their massage practice into a clinical setting, including the rehabilitation orthopedic conditions and injuries. Expands the students’ involvement in patient assessment, advanced orthopedics, and the use of rehabilitative and preventative massage techniques. Pre-requisite or Co-requisite: MSG 232. Lecture/Lab: 3.0 credits (105 contact hours).
Components: Lecture Attributes: Technical

MSG 286(3) Course ID:016874
Massage Therapy Student Clinic
Enhances the student’s experiences in the operation of a Massage Therapy business by their active participation in all aspects of a student-run business, including marketing, managing schedules and resources, and performing Massage services. Pre-requisite: MSG 134. Lecture/Lab: 3.0 credits (135 contact hours).
Components: Lecture Attributes: Technical

MSG 287(1 - 6)
Massage Therapy Practicum and Special Topics: (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 concepts acquired. 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:007268
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 hydraulic/pneumatic components and the relationship of their operation 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.
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.
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: FPX100, FPX 101.
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.
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: (ENGT 110 and FPX 100) 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: (ENGT 110 and ENGT 113 and FPX 101) or Consent of Instructor. Co-requisite: MST 206.
Components: Laboratory Attributes: Technical

MSY 105(3) Course ID:001855
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 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 theline with emphasis on bricking gables and building columns. Pre-requisite: MSY 105 with a grade of C or higher. Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

MSY 198(3) Course ID:001657
Instructor Consent Required
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
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 quoin corners, bricking in around electrical and plumbing units, and laying exterior and window brick sills. Provides opportunity for students to construct expansion joints, pier, plastered andretaining and spotlight block walls. Pre-requisite: (MSY 105 and MSY 115 with a grade of “C” or higher) or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical
**Course Descriptions**

**MSY 215(3) Course ID:001661**
Masonry Lab
Provides for practice and application of principles, theories, and skills taught in MSY 105, MSY 115, 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 toconcrete, 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

**MSY 275(3) Course ID:001669**
Fireplace Construction
Presents different types and styles of indoor and outdoor fireplaces, and the principles of layout, drafting and drawing a fireplace. Includes finishing dimensions of fireplace opening, fireplace layout, setting the fluelining, and applying a chimney cap. 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 291(1 - 3) Course ID:001670**
Masonry Applications
Provides students with additional opportunity to refine skills. Lab: 1.0 - 3.0 credits (45-135 contact hours).

**Components:** Laboratory
**Attributes:** Technical

**MSY 298(3) Course ID:001671**
Instructor Consent Required
Practicum Practicum II
Provides additional supervised on-the-job work experience related to the student's 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 299(3) Course ID:001672**
Instructor Consent Required
Cooperative Education II
Provides additional 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: 3.0 credits (90 contact hours).

**Components:** Co-op
**Attributes:** Technical

**MTT Machine Tool Technology**

**MTT 216(8) Course ID:005456**
Machining Techniques for Manufacturing
Provides skills and knowledge needed to progress through the Tool and Die program. Includes safety, bench work and machining operations performed on die and mold applications. Lecture: 1 credit (15 contact hours). Laboratory: 7 credits (210 contact hours).

**Components:** Laboratory, Lecture
**Attributes:** Technical

**MU Music**

**MU 101(3) Course ID:000910**
Folk and Traditional Music of the Western Continents
Designed for non-music majors. The primary purpose of the course is to survey the body of music called ethnic, 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:** Cultural Studies, AH - Arts and Humanities

**MUC Class Instruction in Music**

**MUC 175(1 - 3) Course ID:002238**
Instructor Consent Required
Jazz Ensemble
The study of jazz performance technique and jazz literature through the participation in a jazz ensemble. Can be repeated for a total of 4 credits. Laboratory: 1 credit (3 contact hours). Pre-requisite: Consent of Instructor.

**Components:** Laboratory
**Attributes:** Technical, University Course (University of Kentucky)

**MUC 190(1) Course ID:005593**
Instructor Consent Required
Marching Band
Preparation for and 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)

**MUP Music Performance**

**MUP 101(1 - 3) Course ID:002242**
Instructor Consent Required
Piano
Students enrolled in MUP courses for two or more credit hours may be required to attend performance classes as lessons. Pre-requisite: Satisfactory audition and/or approval of instructor.

**Components:** Laboratory
**Attributes:** Other

**MUP 102(1 - 3) Course ID:002243**
Instructor Consent Required
Voice
Students enrolled in MUP courses for two or more credit hours may be required to attend performance classes as lessons. Pre-requisite: Satisfactory audition and/or approval of instructor.

**Components:** Laboratory
**Attributes:** Other

**MUP 114(1 - 3) Course ID:006459**
Instructor Consent Required
Classical Guitar
Pre-requisite: Consent of Instructor. Laboratory: 3.0 credits (90 contact hours).

**Components:** Laboratory
**Attributes:** Other

**MUP 201(1 - 3) Course ID:002246**
Instructor Consent Required
Piano
Students enrolled in MUP courses for two or more credit hours may be required to attend performance classes as lessons. Pre-requisite: Satisfactory audition and/or approval of instructor.

**Components:** Laboratory
**Attributes:** Other

**MUP 214(1 - 3) Course ID:006460**
Instructor Consent Required
Trombone I
Continues the systematic study of trombone performance. May be repeated for a total of 3 credits. Laboratory: 1.0 - 3.0 credits (7.5 - 22.5 contact hours). Pre-requisite: Consent of Instructor.

**Components:** Laboratory
**Attributes:** Other

**MU 223(1 - 3) Course ID:003978**
Instructor Consent Required
Classical Guitar (Second Level)
Students enrolled in MUP courses for two or more credit hours may be required to attend performance classes as lessons. Pre-requisite: Satisfactory audition and/or approval of instructor.

**Components:** Laboratory
**Attributes:** Other
### 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 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.

**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: 000900
**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 incorporate various styles of contemporary music utilizing loops and sampling based technology, creation of wavfiles, 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: MUS150. Lab: 1.0 credit (30 contact hours).

**Components:** Laboratory
**Attributes:** Other

### MUS 152(1) Course ID: 002233
**Class Instruction in Piano III**
Develops the technique and musical content 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 expanded upper intermediate repertoire. Pre-requisite: MUS 152. 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 172(3) Course ID: 016799
**Theory I for Bluegrass Music Majors**
Introduces the 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. Lecture: 3 credits (45 contact hours).

**Components:** Lecture
**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.

**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: 082239
**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.

**Components:** Laboratory
**Attributes:** Other

### MUS 192(1) Course ID: 002237
**Instructor Consent Required**
**University Chorus**
Incorporates the use of technology into computer/MIDI applications. Includes the exploration of many ways to incorporate these skills into computer/MIDI applications. Pre-requisite: Audition and consent of instructor. Lab: 1 credit (15-45 contact hours).

**Components:** Laboratory
**Attributes:** Other

### MUS 208(3) Course ID: 000857
**American Music History**
A course in American music history from Pre-colonial West African diasporas 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 American music experience. Lecture: 3 credits (45 contact hours).

**Components:** Lecture
**Attributes:** AH - Arts and Humanities

### MUS 207(3) Course ID: 004774
**World Music**
A geographic survey of selected music cultures throughout the world with hands-on experience playing the music of diverse cultural traditions and styles in music, as well as important historical and sociological trends. 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

### 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. May be repeated to a maximum of four credits. Pre-requisite: Consent of Instructor. Lab: 1.0 credit (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: 2.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

MUS 298(1-3) Course ID: 006343

Special Topics in Music
Examines selected topics in music and/or their impact on culture. May include but is not limited to tonal/idiomatic composers, music genres, defined eras, and applied skills. Topics may vary from semester to semester at the discretion of the instructor. Pre-requisite: MUS 100 or consent of the instructor. Lecture: 1-3 credits (15-45 contact hours).

Components: Lecture
Attributes: Other

MUS 100(1) Course ID: 015802

Elements through Renaissance
Introduces the elements of music as they apply to the living experience. Emphasizes the development of an awareness and understanding of musical styles from the Middle Ages and Renaissance. Designed for those with no prior knowledge of music and is not intended to fulfill a program course requirement for music majors. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

MUS 100(2) Course ID: 015803

Baroque & Classical Music
Emphasizes the development of an awareness and understanding of musical styles from the Baroque and Classical Periods. Pre-requisite: MUS 1001 Elements Through Renaissance. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

MUS 100(3) Course ID: 015804

Romantic 21st Century Music
Emphasizes the development of an awareness and understanding of musical styles from the Romantic Period through 21st Century Music. Pre-requisite: MUS 1002 Baroque & Classical Music. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

MUSE 222(3) Course ID: 006665

Music for the Elementary Teachers
Music rudiments of music theory and methods for teaching music to elementary school children. Components: Lecture
Attributes: University Course (Morehead State University)

MVC 298(1-8) Course ID: 005317

Metroversion Topics
Proposed: Includes Special Topics for the Metroversion Consortium (Jefferson Community & Technical College, Bellarmine University, Indiana University Southeast, Ivy Tech Community College, Louisville Presbyterian Theological Seminary, Southern Baptist Theological Seminary, Spalding University, and University of Louisville). Specific course descriptions, outlines, and competencies will be on file at the credit-bearing institution. GPA 2.0 and completion of 12 credit hours in KCTCS required. Lecture/Lab: 1-8 credit hours.

Components: Laboratory
Attributes: Other

NAA Nursing Assistant

Nursing Assistant Skills I
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.

Components: Lecture
Attributes: Other

NAA 102(3) Course ID: 006887

Basic Health Unit Coordinating
Presents the duties and responsibilities of the health unit coordinator with an emphasis on communications, confidentiality, legal and ethical issues, and order entry. Lecture 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Pilot Course, Technical

NAA 115(3) Course ID: 004612

Nursing Assistant II
Provides knowledge and skills for nurse aides to assume the role and responsibility required in a variety of healthcare 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).

Components: Laboratory
Attributes: Technical

NAA 125(6) Course ID: 004613

Advanced Nursing Assistant
Provides knowledge and skills for nurse aides to assume the role and responsibility required in a variety of healthcare settings. 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: 6.0 credits (150 contact hours).

Components: Lecture
Attributes: Technical

NAA 1001(2) Course ID: 006250

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, 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: 2.0 credits (30.0 contact hours).

Components: Lecture

NAA 1002(0.56) Course ID: 006251

Nurse Aide Skills Laboratory
Includes the laboratory component for application of skills and concepts taught in the nurse aide program. Pre-requisite: NAA 1001. Lab: .56 credit (25.0 contact hours).

Components: Laboratory

NAA 1003(0.44) Course ID: 006252

Nurse Aide Clinical Rotation
Includes the required supervised practical training component. Provides a working knowledge of the physical and psychological, and sociological impact of institutionalization on the nursing facility resident. Pre-requisite: NAA 1002. Clinical: 0.44 credit (20 contact hours).

Components: Clinical

NAA 1021(1) Course ID: 016419

Health Unit Coordinating
Presents communication skills and safety duties and responsibilities of the health unit coordinator. Lecture: 1 credit (15 contact hours).

Components: Lecture

NAA 1021(2) Course ID: 016420

Health Unit Management
Presents health unit coordinator duties and responsibilities regarding confidentiality and legal and ethical issues. Pre-requisite: NAA 1021 Lecture: 1 credit (15 contact hours).

Components: Lecture

NAA 1023(1) Course ID: 016421

Transcription of Orders
Presents order entry duties and responsibilities of the health unit coordinator. Pre-requisites: NAA 1022. Lecture: 1 credit (15 contact hours).

Components: Lecture

NFS Nutrition and Food Science

NFS 101(3) Course ID: 000898

Human Nutrition and Wellness
Food composition, digestion, absorption, and metabolism as related to selection of nutrients essential for human life, growth, reproduction, lactation, wellness, and physical activity. Not open to NFS majors except hospitality management students.

Components: Lecture
Attributes: Other

NFS 105(1)

Course ID: 005024

Compliance With National Fuel Gas Code
A continuation of safety information unique to the natural gas industry. Emphasis is placed on effective ways to avoid accidents and injuries at the worksite. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Technical

NFS 130(1) Course ID: 005025

Compliance With Code of Federal Regulations
A survey of the criteria for the installation, maintenance and inspection of gas pipelines up to the outlet of the customer's meter. Lecture: 1 credit (15 contact hours).

Components: Lecture
Attributes: Technical

NFS 210(3) Course ID: 005032

Troubleshooting Cathodic Protection Rectifiers
Presents the electrical circuits basic to protection current rectifiers. Lecture: 2 credit (30 contact hours); Laboratory: 1 credit (30 contact hours).

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

NFS 1001(0.25) Course ID: 006446

Basic Procedures/Processes
Presents the major components of a natural gas system from well head to burner. Presents actions that each component has on the gas stream in the circuit of the total system. Reviews key terms and definitions applicable conditions common to the utilization of natural gas. Lecture: 0.25 credits (3.75 contact hours).

Components: Lecture

NFS 1002(0.25) Course ID: 006447

Basic Properties of Fuel Gases
Presents advanced procedures for extracting natural gas from the earth and for transporting and regulating natural gas with an emphasis on the physical and chemical properties of natural fuel gases. Lecture: 0.25 credits (3.75 contact hours).

Components: Lecture

NFS 1003(0.75) Course ID: 006448

Adjusting Gas Burners
Presents the science of gas burner design, factors affecting the proper combustion of fuel gas, and techniques used to measure gas input rates, gas flow, and pressure. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.50 credits (15 contact hours).

Components: Laboratory

NFS 1004(0.75) Course ID: 006449

Regulating Natural Gas
Presents factors related to measurement of natural gas in a distribution system, pressure regulation, accurate measurement of natural gas, and irregularities in meter installations. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.50 credits (15 contact hours).

Components: Laboratory

NFS 1005(0.5) Course ID: 006450

Gas Distribution Calculations
Presents methods for calculating area and volume...
<table>
<thead>
<tr>
<th>Course ID:006451</th>
<th>NGT 1006(0.5)</th>
<th>Components: Lecture</th>
<th>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).</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGT 1101(1.25)</td>
<td>Components: Lecture</td>
<td>Controlling/Preventing Fires</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1102(0.75)</td>
<td>Components: Lecture</td>
<td>Safe Working Environment</td>
<td>Emphasizes work safety practices, proper use of equipment, hazards of escaping gas, and drug testing and rehabilitation programs. Lecture: 0.25 credits (3.75 contact hours), Laboratory: 0.5 credits (15 contact hours).</td>
</tr>
<tr>
<td>NGT 1103(0.5)</td>
<td>Components: Lecture</td>
<td>Preventing Accidental Ignition</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1104(0.5 - 500)</td>
<td>Components: Lecture</td>
<td>Traffic Control Guidelines</td>
<td>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.</td>
</tr>
<tr>
<td>NGT 1401(0.5)</td>
<td>Components: Lecture</td>
<td>Excavating</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1402(1.25)</td>
<td>Components: Lecture</td>
<td>Operating Equipment Safely</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1403(0.75)</td>
<td>Components: Lecture</td>
<td>Safety in Confined Spaces</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1404(0.5)</td>
<td>Components: Lecture</td>
<td>Communicating Potential Hazard</td>
<td>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: 2.5 credits (37.5 contact hours), Lab: 0.25 credits (7.5 contact hours).</td>
</tr>
<tr>
<td>NGT 1501(0.5)</td>
<td>Components: Lecture</td>
<td>Gas-in-Air Mixture</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1502(0.5)</td>
<td>Components: Lecture</td>
<td>Gas Leaks/ Odors</td>
<td>Presents basic facts about natural gas and natural gas leaks with emphasis on responding to gas leak and odors. Lecture: 0.25 credits (3.75 contact hours); Lab: 0.25 credits (7.5 contact hours).</td>
</tr>
<tr>
<td>NGT 1503(0.5)</td>
<td>Components: Laboratory, Lecture</td>
<td>Underground Facilities</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1504(0.5)</td>
<td>Components: Laboratory, Lecture</td>
<td>Underground Leaks</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1505(0.75)</td>
<td>Components: Lecture</td>
<td>Patrol/ Leakage Surveys</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1506(0.25)</td>
<td>Components: Lecture</td>
<td>Detecting Carbon Monoxide</td>
<td>Presents the characteristics of carbon monoxide and the guidelines for investigation of carbon monoxide. Lecture: 0.25 credits (3.75 contact hours).</td>
</tr>
<tr>
<td>NGT 1601(0.75)</td>
<td>Components: Lecture</td>
<td>Establishing a Gas Service</td>
<td>Presents methods used when establishing a gas service with emphasis piping from the main to customer’s piping, piping inside buildings, and gas-operated equipment in service. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).</td>
</tr>
<tr>
<td>NGT 1602(0.75)</td>
<td>Components: Laboratory, Lecture</td>
<td>Odorant Levels</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1603(0.75)</td>
<td>Components: Laboratory, Lecture</td>
<td>Installing Domestic Service</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1604(0.75)</td>
<td>Components: Laboratory, Lecture</td>
<td>Purging Techniques</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1701(0.5)</td>
<td>Components: Lecture</td>
<td>Gas-Operated Appliances</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1702(0.5)</td>
<td>Components: Laboratory, Lecture</td>
<td>Servicing Gas Equipment</td>
<td>Presents factors related to the ventilation process, standards to ensure proper combustion and ventilation of 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).</td>
</tr>
<tr>
<td>NGT 1703(0.75)</td>
<td>Components: Laboratory, Lecture</td>
<td>Venting Gas Equipment</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1704(1.25)</td>
<td>Components: Laboratory, Lecture</td>
<td>Electrical Concepts</td>
<td>Presents the basics for troubleshooting electrical control circuits in gas-operated appliances with emphasis on understanding electrical circuit diagrams and their physical arrangement in the appliance. Lecture: 0.25 credits (3.75 contact hours), Lab: 1 credit (30 contact hours).</td>
</tr>
<tr>
<td>NGT 1801(0.5)</td>
<td>Components: Lecture</td>
<td>Installing Mains &amp; Lines</td>
<td>Presents practices basic to installing gas mains and service lines with emphasis on safety, standards, and measurement. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).</td>
</tr>
<tr>
<td>NGT 1802(0.5)</td>
<td>Components: Laboratory, Lecture</td>
<td>Pipeline Installation</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1803(0.5)</td>
<td>Components: Lecture</td>
<td>Plastic Pipe &amp; Heat Fusion</td>
<td>Presents the theory of heat fusing polyethylene pipe and the specifications and conditions required to produce an acceptable joint. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.25 credits (7.5 contact hours).</td>
</tr>
<tr>
<td>NGT 1804(0.75)</td>
<td>Components: Laboratory, Lecture</td>
<td>Pressure Relief Valves</td>
<td>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).</td>
</tr>
<tr>
<td>NGT 1805(0.5)</td>
<td>Components: Laboratory, Lecture</td>
<td>Maintaining Line Valves</td>
<td>Presents basic design characteristics and maintenance procedures for pipeline valves. Lecture: 0.5 credits (7.5 contact hours).</td>
</tr>
<tr>
<td>NGT 1901(0.5)</td>
<td>Components: Lecture</td>
<td>Joining Copper Pipe</td>
<td>Presents materials and techniques for joining copper pipe/tubing. Lecture: 0.25 credits (3.75 contact hours).</td>
</tr>
<tr>
<td>NGT 1902(0.25)</td>
<td>Components: Lecture</td>
<td>Pressure Relief Valves</td>
<td>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).</td>
</tr>
</tbody>
</table>
NGT 1903(0.5)  Course ID:006485
Abandon/Deactivate Facilities
Presents procedures and processes for deactivating/abandoning gas facilities. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 1904(0.5)  Course ID:006486
Cast Iron Pipe
Presents materials and procedures for repairing cast iron pipe. Emphasizes protection of cast iron pipe while excavating. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2011(0.75)  Course ID:006488
Tapping/Stopping Pipelines
Presents techniques used to safely tap and stop pipelines under pressure. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2003(0.75)  Course ID:006490
Purging Techniques
Presents factors affecting the mechanical nature of displacing one gas with another gas by purging. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2004(0.75)  Course ID:006491
Tie-In/Bypass Operations
Presents procedures for performing tie-in/bypass operations. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.50 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2051(0.5)  Course ID:006492
Corrosion Control
Presents the characteristics of corrosion, conditions causing corrosion in buried metal piping, and process systems and procedures basic to corrosion control. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2052(0.5)  Course ID:006493
Installing Cathodic Systems
Presents procedures for installing cathodic protection systems. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2053(0.5)  Course ID:006494
Testing Corrosion Systems
Presents methods for monitoring and testing corrosion control systems. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2054(0.5)  Course ID:006495
Monitoring Corrosion Control
Presents information and techniques for monitoring corrosion control methods on buried metal pipelines. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2101(1)  Course ID:006496
Principles of Electricity
Presents the basics of both D.C. and A.C. electrical theory with an emphasis on current flow designs. Lecture: 1 credit (15 contact hours).
Components: Lecture

NGT 2102(1)  Course ID:006497
Rectifier Components
Presents the theory and practice of identifying and testing typical rectifier components with emphasis on the identification of rectifying circuits, rectifier selection methods, and specialized types of rectifiers. Lecture: 0.50 credits (7.5 contact hours), Lab: 0.50 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2103(0.5)  Course ID:006498
Rectifiers
Presents information and techniques for putting cathodic protection rectifier systems into service. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.5 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2201(0.5)  Course ID:006500
Maintaining Line Valves
Presents the basic operating principles and maintenance schedules of gas flow control valves; demonstrates proper use and care of high-pressure grease guns. Lecture: 0.5 credits (7.5 contact hours), Lab: 0.50 credits (15 contact hours).
Components: Laboratory, Lecture

NGT 2202(0.5)  Course ID:006501
Pipeline Heaters
Presents the operation procedures and maintenance of catalytic and water bath indirect pipeline heaters. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

NGT 2204(0.5)  Course ID:006502
Proper Odorant Levels
Presents the industry standards and devices used to introduce odorants into a natural gas system; emphasizes testing for odorant levels and the proper handling of odorants. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2205(0.5)  Course ID:006503
Dew Point of a Gas
Covers theory and practice used to test the dew point of a gas; explains methods used to test moisture in gas. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2301(0.5)  Course ID:006504
Orifice Meters
Presents operating principles of orifice meters; emphasizes the identification of the meter components and their functions in the measurement process. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

NGT 2302(0.5)  Course ID:006505
Turbine Meters
Presents operating principles of turbine type meters; emphasizes the identification of the meter components and their functions in the measurement process. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

NGT 2303(0.5)  Course ID:006506
Diaphragm Meters
Presents operating principles of diaphragm-type meters; emphasizes the identification of the meter components and their functions in the measurement process. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2304(0.5)  Course ID:006507
Rotary Meters
Presents operating principles of rotary meters; emphasizes the identification of the meter components and their functions in the measurement process. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2305(0.5)  Course ID:006508
Pressure Relief Valves
Presents purpose and operating characteristics of pressure relief valves; emphasizes inspecting, testing and maintenance of relief valves. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2306(0.5)  Course ID:006509
Recording Charts
Presents basic technology used to transfer information to a recording chart; emphasizes how to change, interpret, and send charts. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2401(0.5)  Course ID:006510
Self-Operating Regulators
Presents information and procedures basic to performing maintenance operations on self-operating pressure regulators. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2402(0.5)  Course ID:006511
Pilot Loaded Regulators
Presents concepts and principles basic to the operation and selection of pressure regulators and the control of gas pressure. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2403(0.5)  Course ID:006512
Test Pressure Limits
Presents the concepts and principles basic to test relief valves and pressure limiting and regulating stations. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NGT 2404(0.5)  Course ID:006513
Differential Pressure Recorder
Presents information and procedures for maintaining and calibrating differential pressure recorders. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

NGT 2405(0.5)  Course ID:006514
Mercury Instruments
Presents the fundamental operating and maintenance procedures for Mercury instruments, gauges and indexes. Lecture: 0.5 credits (7.5 contact hours).
Components: Lecture

NGT 2406(0.5)  Course ID:006515
Multiple Range Pressure Chart
Presents concepts and principles basic to reading multiple range pressure recording charts. Lecture: 0.25 credits (3.75 contact hours), Lab: 0.25 credits (7.5 contact hours).
Components: Laboratory, Lecture

NIP 102(3)  Course ID:006647
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. Incorporates the integrating 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 BIO105, PSY110, ENG101, ENH101, and CIT105 or OST 105 equivalent. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course. Pre-requisite or Co-requisite: AHS 100, NIP 116.

Components: Lecture
Attributes: Technical

NIP 103(2) Course ID:016894
Introduction to Pharmacology
Introduces dosage calculations and medication administration using commonly used medications. Includes an overview of common drug classifications and their effects. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy across the lifespan. Pre-requisite: Admission to the Integrated Nursing Program and proof of active status on the Kentucky Nurse Aide Registry. Completion, with a grade of "C" or better, of BIO105, PSY110, ENG 101. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course. Pre-requisite or Co-requisite: NIP 116. Lecture: 2.0 credits (30 contact hours)

Components: Lecture
Attributes: Technical

NIP 116(10) Course ID:006838
Fundamentals of Nursing
Focuses on basic nursing concepts that the beginning nurse will need to provide care to diverse clients utilizing the six integrated concepts of nursing practice: context and environment, knowledge and science, personal/professional development, quality and safety, relationship-centered care, and teamwork. Explores current and historical issues impacting nursing. Introduces framework for organizing the care of clients with health problems 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, skill acquisition, and critical thinking in the provision of prudent health care delivery. Examines client's needs, health promotion, basic human needs, prevention of complications 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. Pre-requisite: NIP 128. Lecture: 2.0 credits (30 contact hours), Clinical: 1.0 credit.

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

NIP 128(10) Course ID:008642
Medical Surgical Alteration
Focuses on care of clients with stressors to normal lines of defense in hematology, immunity, infection, fluid and electrolyte/acid-base imbalance, respiratory, musculoskeletal, cardiovascular, gastrointestinal/hepaticobiliary, renal/urinary, endocrine, reproductive, and neurological/sensory. Integrates the concepts of nursing practice: context and environment, knowledge and science, personal/professional 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 client’s needs, health promotion, various treatment modalities, and nursing interventions. Pre-requisite: Completion with a grade of "C" or better in NIP 102, NIP 116. 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 129(11) Course ID:016950
Nursing Care Across the Life Span
Focuses on care of patients across the lifespan with stressors to normal lines of defense in hematology, immune, integumentary, fluid and electrolyte/acid-base imbalance, respiratory, musculoskeletal, cardiovascular, gastrointestinal/hepato-biliary, renal/urinary, neurological/sensory and endocrine and reproductive health. Included is nursing care throughout pregnancy and the postpartum period, as well as nursing care of the newborn and the childbearing family. Integrates the concepts of nursing practice: context and environment, knowledge and science, personal/professional development, quality and safety, relationship-centered care, and teamwork. Uses the Neuman’s System Model to provide care for patients by incorporating the core values of caring, diversity, excellence, integrity, ethics, holism, and patient-centeredness. Examines the patient’s needs, health promotion, various treatment modalities, and nursing interventions, through clinical experience and theory application. Pre-requisite: Completion with a Components: Clinical, Laboratory, Lecture
Attributes: Technical

NIP 140(6) Course ID:005435
Practical Nursing Role Transition
Prepares students to assume the role of graduate practical nurse. Promotes clinical judgment, delegation and collaboration in the provision of safe, ethical, holistic patient centered care. Examines 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 NIP 120, NIP 128. Students must have Basic Life Support certification, current liability insurance coverage and current immunizations for the duration of the course. Pre-requisite or Co-requisite: CIT 105 or OST 105. Lecture: 2.0 credits (30 contact hours), Clinical: 4.0 credits (180 contact hours).

Components: 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. Utilizes the nursing process in care management of clients with complex health care needs. Includes providing self-defense/protection: skin, hair and nails, cancer, hematology, hemostatic, pulmonary vascular system, cardiovascular system, respiratory system, endocrine system, gastrointestinal system, reproductive system, renal/urinary system, nervous system, sensory system, musculoskeletal system and lymphatic system across the lifespan. Pre-requisite: Completion with grade of "C" or better in NIP 129 or successful completion of Practical Nursing program curriculum and proof of active unencumbered Kentucky or Compact State Practical Nursing Licensure. Students must have Basic Life Support certification, current liability insurance coverage.

Components: Clinical, Lecture
Attributes: Technical

NIP 215(7) Course ID:005438
Leadership and Specialty Practice
Prepares the student for 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 issues. Focuses on leadership and management of care, continued skill development and professionalism. To include ethics, integrity, excellence diversity and care. 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 at 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 of leadership attributes.

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

NIP 220(2) Course ID:016085
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 emergency care of patients highlighting the importance of teamwork and communication. Prepares students for 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. Co-requisite: NIP 215. Lecture: 0.5 credits (7.5 contact hours), Lab: 1.5 credits (67.5 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

NMI Nuclear Medicine and Molecular Imaging Technology

NMI 140(2) Course ID:005714
Clinical Procedures I
Covers radionuclide skeletal system imaging techniques to demonstrate vascular, soft tissue and skeletal distribution. Includes radionuclide cardiovascular system, nuclear medicine and imaging procedures for myocardial perfusion and viability functional evaluation (equilibrium and first-pass methods) and deep vein thrombosis detection. Prerequisite: Admission to the NMMI program. Computer Literacy: [(MAT 150) and (BIO 137 and BIO 139)] or consent of instructor. Co-requisite: CHE 140 and (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 141(2) Course ID:005715
Physics and Instrumentation I
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 apply to radiation detection and counting. Prerequisite: Admission to the NMMI program. Computer Literacy: [(MAT 150) and (BIO 137 and BIO 139)] or consent of instructor. Co-requisite: NMI 140 and NMI 142 and NMI 150. Pre-requisite or Co-requisite: CHE 140 and either PHY 171 or PHY 172. Laboratory: 2.0 credits (45 contact hours).

Components: Laboratory, 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 irradiation...
to exposure. Covers radiation protection principles, applications and NRC regulations. Pre-requisite: Admission to the NMMI program. Computer Literacy; (MAT 150) and (BIO 137 and BIO 139) or consent of instructor. Co-requisite: (NMI 140 and NMI 141 and NMI 142) or consent of instructor. Pre-requisite or Co-requisite: CHE 140 and either PHY 171 or PHY 172. Lecture: 1.0 credits (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 NMI courses. Will include actual clinical experience in an affiliated nuclear medicine clinical setting. Pre-requisite: Admission to the NMMI program. Computer Literacy; (MAT 150) and (BIO 137 and BIO 139) or consent of instructor. Co-requisite: (NMI 140 and NMI 141 and NMI 142) or consent of instructor. Pre-requisite or Co-requisite: CHE 140 and either PHY 171 or PHY 172. Clinical: 2.0 credits (30 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. Pre-requisite: [(NMI 140 and NMI 141 and NMI 142 and NMI 150) with a grade of C or greater] or consent of instructor. Co-requisite: NMI 161 and NMI 170. Pre-requisite or Co-requisite: CHE 150. Lecture: 2.0 credits (30 contact hours).

Components: Lecture Attributes: Technical
NMI 161(2) Course ID:005719

NMI 220(2) Course ID:005720

Clinical III
Continuation of NMI 170 Clinic I. Covers clinical practice with application of knowledge and principles from previous general education course work and/or concurrent NMI courses. Will include actual clinical experience in an approved nuclear medicine clinical setting. Pre-requisite: [(NMI 140 and NMI 141 and NMI 142 and NMI 150) with a grade of C or greater] or consent of instructor. Co-requisite: NMI 160 and NMI 161. Pre-requisite or Co-requisite: CHE 150. Clinical: 2.0 credits (180 contact hours).

Components: Clinical Attributes: Technical
NMI 220(2) Course ID:005721

NMI 230(2) Course ID:005722

Radiotherapy
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 and MRI with radiology administration. Pre-requisite: [(NMI 160 and NMI 161 and NMI 170) with a grade of C or greater] or consent of instructor. Co-requisite: 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. Pre-requisite: [(NMI 220 and NMI 230) with a grade of C or greater] or consent of instructor. Co-requisite: 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, radionuclide and therapeutic procedures, non-imaging procedures related to hematology and vitamin B-12 absorption / excretion and metabolic bone disease. Pre-requisite: [(NMI 240 and NMI 260) with a grade of C or greater] or consent of instructor. Co-requisite: NMI 270 or consent of instructor. Lecture: 4.0 (60 contact hours).

Components: Lecture
Attributes: Technical
NMI 260(4) Course ID:005725

Clinical Procedures V
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 220 and NMI 230) with a grade of C or greater] or consent of instructor. Co-requisite: NMI 240 or consent of instructor. Clinical: 4.0 credits (360 contact hours).

Components: Clinical Attributes: Technical
NMI 270(4) Course ID:005726

Clinical 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 101(6) Course ID:005727

Nursing Fundamentals
Provides a historical overview of health care system and roles and responsibilities of members of the healthcare team. 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 therapeutic communication techniques; nursing process and care planning; charting; legal and ethical parameters of health care; rest and sleep; and body mechanics. Pre-requisite: 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. Pre-requisite or Co-requisite: [(BIO 135 or BIO 139) and (AHS 131 or AHS 140 or AHS 141 or AHS 142) with a minimum grade of C in each course] OR Consent of PN Coordinator. Lecture: 3.0 credits (45 contact hours); Lab/Clinical: 3.0 credits (45:1 ratio/135 contact hours).

Components: Clinical, Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical
NPN 105(6) Course ID:004022

Development of Care Giver Role
Introduces nursing and the nursing process as related to client activities of daily living across the lifespan. Provides an opportunity to develop and practice psychomotor skills related to health assessment; promotion, maintenance, and illness prevention. Pre-requisite: 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. Pre-requisite or Co-requisite: [(BIO 135 or BIO 139) and (AHS 140 or PSY 223) with a minimum grade of C in each course] OR Consent of PN Coordinator. Lecture: 3.0 credits (45 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 healthcare team. Emphasizes practical nursing and the nursing process in the context of Functional Health Patterns and Maslow’s hierarchy of needs as related to client daily living across the lifespan. Covers fundamental nursing skills including therapeutic communication techniques; nursing assessment; nursing process and care planning; charting; legal and ethical parameters of health care; rest and sleep; body mechanics and introductory content on the surgical experience. Pre-requisite: 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 131 or CLA 131) with a minimum grade of C in each course] OR Consent of PN Coordinator. Lecture: 3.0 credits (45 contact hours); Lab/Clinical: 3.0 credits (45:1 ratio/135 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. Emphasizes nursing responsibility, accountability, and application of nursing process drug therapy. Pre-
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 medicaltherapies, and legal responsibilities. Pre-requisite: Admission to Practical Nursing program AND CPR forHealth Care Providers certification to be maintained throughout enrollment in the program AND [(NAA100 or equivalent) within the past three years OR active status on theMedicaid Nurse Aide Registry] and Digital Literacy as defined by KCTCS. Pre-requisite or Co-requisite: [(BIO 135 or BIO 139) and (AHS 100 or PSY 223)] with amimum 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).

Components: Laboratory, Attributes: Technical
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. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Pre-requisite: Admission to Practical Nursing program AND CPR for Health Care Providers certification to be maintained throughout enrollment in the program AND [(NAA100 or equivalent) within the past three years OR active status on the Medicaid Nurse Aide Registry] AND Digital Literacy as defined by KCTCS. Pre-requisite or Co-requisite: [(BIO 135 or BIO 139) and (AHS 100 or PSY 223)] with amimum 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).

Components: Clinical, Attributes: Technical
NPN 115(6) Course ID:004626
Practical Nursing Bridge Course
Provides overview of the health care system and roles and responsibilities of the health care team. Emphasizesthe nursing process in the context of Gordon's Functional Health Patterns and Maslow's hierarchy of needs asrelated to client daily living across the life span. Covers fundamental nursing skills including therapeuticcommunication techniques, nursing assessment, and the nursing process. Introduces dosage calculations and medication administration of medications. Includes an overview of common drugs, drug classifications, and effects ofdrugs administered in all modes. Emphasizes chemical dependency, violence andother issues and developmenal problems related to mental health. Pre-requisite: Pathway 1: (NPN 100 and NPN105 and NPN 110) and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) or Consent of PN Coordinator. Minimum C grade. Lecture: 2.0 credits(30 contact hours); Lab/Clinical: 1.0 credit (45 contact hours).

Components: Clinical, Laboratory, Attributes: Technical
NPN 125(3) Course ID:004025
Introduction to Health Deviation
Studies common drugs by classification and effects with emphasis on responsibility, accountability, andaplication of the nursing process to drug therapy. Pre-requisite: [(NPN 100 and NPN 105 and NPN 110 and (BIO135 or BIO 139) and (AHS 100 or PSY 223) or Consent of PN Coordinator). Minimum C grade. Lecture: 2.0 credits(30 contact hours); Lab/Clinical: 1.0 credit (45 contact hours).

Components: Clinical, Laboratory; Attributes: Course Also Offered in Modules, Technical
NPN 130(3) Course ID:004026
Nursing Trends & Issues
Integrates the theoretical concepts learned throughout the program in application of this knowledge during the direct care of clients. Promotes critical thinking and problem solving skills during the nursing role. Pre-requisite: (NPN 200 with a grade of C or greater) or Consent of PN Coordinator. Pre-requisite or Co-requisite: NPN 201. If Pre-requisite, a grade of C or greater must be achieved. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
Attributes: Technical
NPN 210(4) Course ID:005730
Clinical Practicum
Component: Lecture, Practicum
Nursing Trends & Issues
Attributes: Technical
NPN 215(1) Course ID:004125
Nursing Trends & Issues
Integrates the theoretical concepts learned throughout the program in application of this knowledge during the direct care of clients. Promotes critical thinking and problem solving skills during the nursing role. Pre-requisite: (NPN 200 with a grade of C or greater) or Consent of PN Coordinator. Pre-requisite or Co-requisite: NPN 201. If Pre-requisite, a grade of C or greater must be achieved. Lecture: 1.0 credit (15 contact hours).

Components: Clinical, Lecture
Attributes: Course Also Offered in Modules, Technical
NPN 101(1.5) Course ID:006270
Professional Rescuer certification to be maintained throughout enrollment in the program AND [(NAA100 or equivalent) within the past three years OR active status on the Medicaid Nurse Aide Registry] and Digital Literacy as defined by KCTCS. Pre-requisite or Co-requisite: [(BIO 135 or BIO 139) and (AHS 100 or PSY 223)] with amimum 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).

Components: Clinical, Laboratory, Attributes: Course Also Offered in Modules, Technical
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 hours).

Components: Lecture

NPN 1012(1) 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 nursingskills including nursing assessment, nursing process and care planning, and charting. Pre-requisite: NPN 1011 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 nursingskills including nursing assessment; nursing process and care planning; legal parameters of health care; rest and sleep; and body mechanics. Pre-requisite: 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. Includes the application of knowledge and skills in a lab setting. Pre-requisite: NPN 1011 Completion with a C or better. Pre-requisite or Co-requisite: 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 lifelong learning. Pre-requisite: 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 State Nurse Aide Registry (SNRA). Admission into the Practical Nursing Program. (ENG 101 and MT 110 and (AHS 115 or CLA 131), Minimum C grade. Pre-requisite or Co-requisite: NPN 1061 with a C or better. Lecture: 1 credit (15 contact hours). Lab: 0.25 credits (11.25 contact hours).

Components: Laboratory, Lecture

NPN 1062(1.5) Course ID: 005570 Nursing Process Presents the nursing process and the development of the patient plan of care. Pre-requisite: NPN 1061. Minimum C grade. Pre-requisite or Co-requisite: (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: 005571 Health Assessment Presents health assessment and 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). Pre-requisite: NPN 1062 and Minimum C grade. Pre-requisite or Co-requisite: (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: 005572 Care of the Client Undergoing Surgical Intervention Presents patients undergoing surgical intervention and the related lab/collection clinical components. Pre-requisite: NPN 1063. Minimum C grade. Pre-requisite or Co-requisite: (BIO 139 and PSY 223). Minimum Grade. Lecture: 1.25 credits (18.75 contact hours). Lab: 0.25 credits (11.25 contact hours). Clinical: 0.5 credits (22.5 contact hours).

Components: Clinical, Laboratory, Lecture

NPN 1081(0.5) Course ID: 006275 Overview of Pharmacology Presents an overview of pharmacology and the legal and ethical implications for nursing practice. Pre-requisite: Admission to program. Current CPR card for Health Care Providers or Red Cross Professional Rescuer: 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 State Nurse Aide Registry (SNRA). (MT 110 or higher math) and (AHS 115 or CLA 131) and ENG 101. Minimum C grade. Co-requisite or Pre-requisite: BIO 139 and PSY 223. Must achieve a C or greater in each course. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture

NPN 1082(1.15) Course ID: 005704 Medication Administration Presents a discussion of various drug categories and the procedures for correct administration via various routes. Pre-requisite: NPN 1081. Minimum C grade Co-requisite or Pre-requisite: BIO 139 and PSY 223. Minimum C grade. Lecture: 0.75 credits (11.25 contact hours). Lab: 0.4 credits (18 contact hours).

Components: Laboratory, Lecture

NPN 1083(1.35) Course ID: 005733 Parenteral Medication Administration Presents the concepts and responsibilities of the nurse during intravenous therapy. Pre-requisite: NPN 1082. Minimum C grade. Lecture: 1.35 credits (38.25 contact hours).

Components: Laboratory, Lecture

NPN 1111(1) Course ID: 006276 Intro to Pharmacology Provides an overview of pharmacological principles, introducing drug calculations, drug classifications and common drugs, as well as effects of medications. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Pre-requisite: NPN 1111 Completion with a C or better. Lecture: 1 credit (15 contact hours).

Components: Lecture

NPN 1112(1) Course ID: 006277 Medication Administration Focuses on the role of the practical nurse in regard to medication administration utilizing oral, enteral, sublingual, buccal, rectal, topical, transdermal, intradermal, intramuscular, and subcutaneous routes. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Pre-requisite: NPN 1111. Completion with a C or better. Laboratory: 1 credit (45 contact hours).

Components: Laboratory

NPN 1113(1) Course ID: 006278 Intravenous Therapy Focuses on the role of the practical nurse in regard to medication administration utilizing the oral, enteral, sublingual, buccal, rectal, topical, transdermal, intradermal, intramuscular, and subcutaneous routes. Emphasizes nursing responsibility, accountability, and application of nursing process to drug therapy. Pre-requisite: NPN 1112 Completion with a C or better. Laboratory: 1 credit (45 contact hours).

Components: Laboratory

NPN 1250(1.75) Course ID: 005705 Intro to Psychiatric-Mental Health Nursing Presents the introduction to psychiatric-mental health nursing and the nurse’s role in multidisciplinary care. Pre-requisite: 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) or Consent of PN Coordinator. Pre-requisite or Co-requisite: Pathway 2: (NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223)) and (AHS 120 or AHS 115 or CLA 131) with a minimum grade of “C” in each course) or Consent of PN Coordinator. Lecture: 0.5 credits (11.25 contact hours).

Components: Clinical, Lecture

NPN 1252(0.75) Course ID: 005706 Components of the Nurse-Client Relationship Presents the aspects of therapeutic communication and the nurse’s role in multidisciplinary care. Pre-requisite: ALL Pathways: NPN 1251. Minimum “C” grade. Co-requisite or Pre-requisite: Pathway 2: (NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of “C” in each course. Pathway 3: (NPN 106 and NPN 108 and BIO 139 and PSY 223) with a minimum grade of “C” in each course. Lecture: 0.5 credits (7.5 contact hours). Clinical: 0.25 credits (11.25 contact hours).

Components: Clinical, Lecture

NPN 1253(0.75) Course ID: 005707 Clients with Psychiatric Disorders Presents the disorders specific to adult issues of illness and recovery. Pre-requisite: ALL Pathways: NPN 1252. Minimum “C” grade. Co-requisite or Pre-requisite: Pathway 2: (NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of “C” in each course. Pathway 3: (NPN 106 and NPN 108 and BIO 139 and PSY 223) with a minimum grade of “C” in each course. Lecture: 0.5 credits (7.5 contact hours). Clinical: 0.25 credits (11.25 contact hours).

Components: Clinical, Lecture

NPN 1254(0.75) Course ID: 005708 Special Populations with Psychiatric Disorders Presents the introduction to psychiatric-mental health nursing and the nurse’s role in multidisciplinary care. Pre-requisite: ALL Pathways: NPN 1253. Minimum “C” grade. Pre-requisite or Co-requisite: Pathway 2: (NPN 101 and NPN 111 and (BIO 135 or BIO 139) and (AHS 100 or PSY 223) and (AHS 120 or AHS 115 or OST 103 or CLA 131)) with a minimum grade of “C” in each course. Pathway 3: (NPN 106 and NPN 108 and BIO 139 and PSY 223) with a minimum grade of “C” in each course. Lecture: 0.5 credits (7.5 contact hours). Clinical: 0.25 credits (11.25 contact hours).

Components: Clinical, Lecture

NPN 1256(1) Course ID: 006280 Therapeutic Modalities and Plan of Care Applies the nursing process to clients experiencing common mental health problems with emphasis on assisting patients to cope with psychiatric problems throughout the life span. Focuses on abnormal aspects of mental health.
mental health. Pre-requisite: NPN 1255 Completion with a C or better. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

NPN 1257(1) Mental Health: Lab and Clinical Experience

**Course ID:** 008281

Applies the nursing process to clients experiencing common mental health problems with emphasis on assisting clients to cope with psychological problems throughout the lifespan. Applies the nursing process within laboratory and clinical settings. Pre-requisite: NPN 1256 Completion with a C or better. Lecture: 1.0 credit (45 contact hours).

Components: Clinical, Laboratory

NPN 1351(0.75) Perioperative Care

**Course ID:** 006282

Incorporates the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as the provider of care for those patients experiencing alterations in the perioperative period. Pre-requisite: 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) OR Consent of Nursing Coordinator. Pathway 2: (NPN 1016 and 1113 and (BIO 135 or BIO 139) and (AHS 115 or AHS 120 or CLA 131 or OST 103)) with a minimum grade of “C” in each course. Lecture: 0.75 credit (11.25 contact hours).

Components: Lecture

NPN 1352(1.25) Alterations in Oxygenation 1

**Course ID:** 006283

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. Pre-requisite: 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) Clinical 1

**Course ID:** 006284

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 those patients experiencing alterations in oxygenation focusing on respiratory function. Pre-requisite: NPN 1351 with a C or better. Pre-requisite or Co-requisite: NPN 1352 (Pre-requisites require a C or better). Clinical: 1 credit (45 contact hours).

Components: Clinical

NPN 1354(1.25) Alterations in Oxygenation 2

**Course ID:** 006285

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. Pre-requisite: (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) Threats To Defenses

**Course ID:** 006286

Includes the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as the provider of care for those patients experiencing threats to body defenses. Pre-requisite: NPN 1354 Completion with a C or better. Lecture: 0.75 credit (11.25 contact hours).

Components: Lecture

NPN 1356(1) Clinical II

**Course ID:** 006287

Introduces application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasizes the nurse as the provider of care for those patients experiencing alterations in body defenses and alterations in oxygenation. Pre-requisite: NPN 1355 NPN 1355(Pre-requisites require a C or better). Clinical: 1.0 credit (45 contact hours).

Components: Clinical

NPN 1401(0.75) Fluid/Electrolyte Balance Care

**Course ID:** 005760

Pre-requisite: NPN 106 and NPN 108 and BIO 139 and PSY 223 with a minimum grade of “C” in each course. Pre-requisite or Co-requisite: 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) Cardio-Renal Function Care

**Course ID:** 005761

Pre-requisite: NPN 106 and NPN 108 and BIO 139 and PSY 223 with a minimum grade of “C” in each course. Pre-requisite or Co-requisite: 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 1403(0.75) Nutrition and Activity/Exercise Functions across the Lifespan

**Course ID:** 005762

Pre-requisite: NPN 106 and NPN 108 and BIO 139 and PSY 223. 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) Surgical Intervention Care

**Course ID:** 005764

Pre-requisite: NPN 106 and NPN 108 and BIO 139 and PSY 223. 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 2023(1) Metabolism Clinical Practice

**Course ID:** 006295

Demonstrate the knowledge gained in NPN 2021 and NPN 2022. Provide care for clients with alterations in metabolism, fluid and electrolyte imbalances that interfere with activities of daily living with emphasis on the role of the practitioner as the provider of care. Pre-requisite: NPN 1356 Completion with a C or better. Lecture: 1 credit (15 contact hours).
of care. Pre-requisite: NPN 1356 Completion with a C or better. Completion with a C or better. Lecture: 1 credit (15 contact hours).

Components: Lecture
NPN 2026(1) Course ID: 006298 Perfusion & Cell Deviation Clinicals Demonstrates the knowledge gained in NPN2024 and NPN2025 in providing care for clients with alterations in metabolism, fluid and electrolyte imbalances. Pre-requisite: NPN 2025 Completion with a C or better. Laboratory or Clinical: 1.0 credit (45 contact hours).

Components: Clinical, Laboratory
NPN 2061(1) Course ID: 006299 Alterations in Coordination Applies nursing process to selected child/adult clients experiencing common health deviations related to coordination dysfunction that interferes with activities of daily living with emphasis on the role of the practical nurse as the provider of care. Pre-requisite: NPN 2026 Completion with a C or better. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
NPN 2062 (1.5) Course ID: 006300 Neurological Alterations Applies nursing process to selected child/adult clients experiencing common health deviations related to coordination dysfunction that interferes with activities of daily living with emphasis on the role of the practical nurse as the provider of care. Pre-requisite: NPN 2062 Completion with a “C” or better. Laboratory: 1.0 credit (22.5 contact hours).

Components: Laboratory
NPN 2064(1) Course ID: 006302 Elimination Altersations Applies nursing process to selected child/adult clients experiencing common health deviations related to coordination dysfunction that interferes with activities of daily living with emphasis on the role of the practical nurse as the provider of care. Pre-requisite: NPN 2064 Completion with a C or better. Lecture: 1 credit (15 contact hours).

Components: Lecture
NPN 2065(0.5) Course ID: 006303 Multi System Failure Applies nursing process to selected child/adult clients experiencing common health deviations related to multi-system failure that interfere with activities of daily living with emphasis on the role of the practical nurses the provider of care. Pre-requisite: NPN 2064 Completion with a C or better. Lecture: 0.5 credit (7.5 contact hours).

Components: Lecture
NPN 2066(1) Course ID: 006304 Multi System Failure Clinical Applies nursing process to selected child/adult clients experiencing common health deviations related to multi-system failure and elimination disorders that interfere with activities of daily living with emphasis on the role of the practical nurse as the provider of care. Pre-requisite: NPN 2065 Completion with a “C” or better. Clinical: 1.0 credit (45 contact hours).

Components: Clinical
NPN 2081(2) Course ID: 005765 Neurological Function Care Presents content on alterations in neurological function and the role of the practical nurse in planning appropriate interventions. Pre-requisite: (NPN 125 and NPN 140 and NPN 201), Minimum C grade. Co-requisite: NPN 210 and NPN 215. Lecture: 1.2 credits (18 contact hours), Clinical: 0.8 credits (36 contact hours).

Components: Clinical, Lecture
NPN 2082(2) Course ID: 005766 Coordination/Special Senses/Integumentary Function Presents content on patients with alterations in coordination, special senses, and integumentary function, and the role of the practical nurse in planning appropriate interventions. Pre-requisite: NPN 2081 with a grade of C or greater. Co-requisite: NPN 210 and NPN 215. Lecture: 1.2 credits (18 contact hours), Clinical: 0.8 credits (36 contact hours).

Components: Clinical, Lecture
NPN 2083(2) Course ID: 005767 Cardiovascular Function Care Presents content on the patient with alterations in cardiovascular function and the role of the practical nurse in planning appropriate interventions. Pre-requisite: NPN 2082 with a grade of C or greater. Co-requisite: NPN 210 and NPN 215. Lecture: 1.2 credits (18 contact hours), Clinical: 0.8 credits (36 contact hours).

Components: Clinical, Lecture
NPN 2084(2) Course ID: 005768 Metabolism & Elimination Care Presents content on the patient with alterations in metabolism and elimination and the role of the practical nurse in planning appropriate interventions. Pre-requisite: NPN 2083 with a grade of C or greater. Co-requisite: NPN 210 and NPN 215. Lecture: 1.2 credits (18 contact hours), Clinical: 0.8 credits (36 contact hours).

Components: Clinical, Lecture
NPN 2085(2) Course ID: 005769 Cell Function/Multi-System Failure Care Presents content on alterations in cellular deviation and multi-system organ failure, and the role of the practical nurse in planning appropriate interventions. Pre-requisite: NPN 2084 with a grade of C or greater. Co-requisite: NPN 210 and NPN 215. Lecture: 1.2 credits (18 contact hours), Clinical: 0.8 (36 contact hours).

Components: Clinical, Lecture
NPN 2101(1) Course ID: 005774 Theoretical Concepts of Clinical Practicum Presents concepts of legal nursing practice that will be implemented in the NPN 21021 practicum experience. Pre-requisite: Pathway 1: NPN 205, Minimum “C” grade Pathway 2: NPN 206. Minimum “C” grade. Pre-requisite or Co-requisite: Pathway 3: ((NPN 208 and NPN 215) with a minimum grade of “C” in each course) or Consent or PN Coordinator. Lecture: 1.0 credit (15 contact hours).

Components: Lecture
NPN 2102(3) Course ID: 005775 Clinical Practicum Presents the nursing practicum experience in the clinical setting. Pre-requisite: All Pathways: NPN 2101 with grade of “C” or greater. Pre-requisite or Co-requisite: Pathway 3: ((NPN 208 and NPN 215) with a minimum grade of “C” in each course) or Consent of PN Coordinator. Practicum: 3.0 credits (135 contact hours).

Components: Practicum
NPN 2151(0.5) Course ID: 005776 Leadership and Management as a Professional Concept Presents content on leadership, management, and regulatory issues for the role of practical nurse. Pre-requisite: Pathway 1: (NPN 125 and NPN 130 and NPN 135 and NPN 201) with a minimum grade of “C” in each course. Pathway 2: (NPN 125 and NPN 135) with a minimum grade of “C” in each course. Pathway 3: (NPN 125 and NPN 201) with a minimum grade of “C” in each course. Pre-requisite or Co-requisite: Pathway 2: (NPN 201 and NPN 202 and NPN 206 and NPN 210) with a minimum grade of “C” in each course. Pathway 3: (NPN 208 and NPN 215) with a minimum grade of “C” in each course. Lecture: 0.5 credits (7.5 contact hours).

Components: Lecture
137, BIO139, and MAT 150 or higher with a grade of "C" or better; ENG 101, computer literacy, oral communications, (PSY110 or PSY 100) and PSY 223. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (45 contact hours).

Components: Laboratory, Lecture
Attributes: Technical

NRS 203(9)  Course ID:004335

Nursing Care III
Applies problem-solving and critical thinking skills in the care of diverse clients/families across the lifespan with actual or the potential for alterations in health due to complex acute and chronic health problems. Emphasizes leadership, decision-making, knowledge, judgment, skills and professional values within a legal/ethical framework. Introduces the RN responsibilities in relation to the four roles of nursing practice including human flourishing, human judgment, professional identity, and spiritual inquiry. Pre-requisite: NRS 102 with a grade of "C" or better. Pre-requisite Or Co-requisite: BIO 225 or BIO227 with a grade of "C" or better; ENG 102. Lecture: 9.0 credits (225 clinical hours).

Components: Clinical, Lecture
Attributes: Technical

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 spiritual inquiry with an emphasis on leadership, management decision-making, collaboration, knowledge, judgment, skills and professional values within a legal/ethical framework. Applies problem-solving and critical thinking skills in 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 clinicalpracticum of direct patient care in a healthcare facility or healthcare organization to facilitate the transition from student role to RN practice. Pre-requisite: NRS 203 and (BIO 227 or BIO 225) with a grade of "C" or better. Pre-requisite Or Co-requisite: Prior to or concurrent Heritage/Humanities. Lecture: 10.0 credits (270 clinical hours).

Components: Clinical, 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(9)  Course ID:000568

Nursing Practice I
Covers nursing practice using functional health patterns within the context of the contemporary health care 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. Pre-requisite: Admission to the Associate Degree Nursing Program, (BIO 137 and MAT 150 or higher with a grade of "C" or better), PSY 110, 75 hour nursing assistant course or its equivalent, and Computer Literacy. Prerequisite Or Co-requisite: BIO 139 with a grade of "C" or better and PSY 223. Lecture: 5.0 credits (75 contact hours). Clinical: 4.0 credits (180 contact hours).

Components: Clinical, Laboratory, Lecture
Attributes: Technical

NSG 106(9)  Course ID:006179

Nursing One
Introduces and applies Gordon’s Functional Health Patterns (FHP) within the context of the contemporary healthcare system. Emphasizes foundation knowledge of nursing practice, skills acquisition, and care of clients with chronic health patterns.

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 (45 contact hours).

Components: Lecture
Attributes: Technical

NSG 196(5)  Course ID:006180

Nursing LPN Bridge Course
Builds upon the LVLNLPN 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. Pre-requisite: Admission to Associate Degree Nursing Program. BIO 137 and MAT 150 (within ten years) with a grade of "C" or better. MAT 150 with a grade of "C" or better, PSY 110, and ENG 101, Co-requisite: NSG 216. Pre-requisite Or Co-requisite: PSY 223 and Oral Communications Course. 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 LVLNLPN 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 credits toward the Nursing Program. Admission to the Associate Degree Nursing Program and (BIO 137, BIO 139, and MAT 150 or higher with a grade of "C" or better), PSY 110, PSY 223, ENG 101, Oral Communications and Digital Literacy. Pre-requisite Or Co-requisite: NSG 215 and NSG 212 with a grade of "C" or better. Lecture: 2.5 credits (37.5 contact hours); Laboratory: 0.5 credits (22.5 contact hours).

Components: Clinical, Lecture
Attributes: Technical

NSG 199(2)  Course ID:005905

Accelerated Transition: PN-A.D.N Bridge
Admission to the Associate Degree Nursing Program and (BIO 137, BIO 139, and MAT 150 or higher with a grade of "C" or better), PSY 110, PSY 223, ENG 101, Oral Communications, Digital Literacy and a passing score on anational normed PN to RN mobility examination. Pre-requisite: 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. Co-requisite: NSG 215 and NSG 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 LVLNLPN 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, 18 credit hours in nursing. Lecture: 4 hours, Laboratory: 3 hours. Pre-requisite: BIO 137, BIO 139, MAT150 or higher with a grade of "C" or better, PSY 110, ENG 101, and Computer Literacy.

Components: Laboratory, Lecture
Attributes: Technical

NSG 206(9)  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. Pre-requisite: NSG 106 with a grade of "C" or better. Pre-requisite or Co-requisite: NSG 216 OR HST 121, Pre-requisite Or Co-requisite: PSY 223 and Oral Communications Course.Lecture: 5.0 credits (75 contact hours). Laboratory/Clinical: 4.0 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 dysfunction. Pre-requisite: (NSG 101 and BIO 139) with a grade of "C" or better and PSY 223. Pre-requisite or Co-requisite: (NSG 212 and NSG 215) with a grade of "C" or better, ENG 101 and Oral Communications Course. Lecture: 4 hours (60 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. Pre-requisite: (NSG 210, NSG 212 and NSG 215), with a grade of "C" or higher, ENG 101 and Oral Communications, Digital Literacy. Pre-requisite or Co-requisite: 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. Pre-requisite: (NSG 101 and BIO 139) with a grade of "C" or higher and PSY 223. Pre-requisite Co-requisite: (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 230, 201 KAR 20:320). Pre-requisite: (NSG 220 and NSG 211 and BIO 225) with a grade of "C" or better, ENG 102. Co-requisite: NSG 220 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 healthpatterns.

Emphasizes nursing responsibility, accountability, and application of the nursing process regarding drug therapy. Pre-requisite: (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 credit (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: (NSG 211 and BIO 225) with a grade of "C" or higher and Oral Communications course. Lecture: 1.0 credit (15 contact hours).

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

NSG 220(6) Course ID:005912
Medical/Surgical Nursing II
Focuses on the application of the core components of nursing to adult patients experiencing dysfunctional health patterns. Emphasizes the care of patients with activity/ exercise dysfunctional health patterns (cardiac/respiratory and multi-organ failure). Pre-requisite: (NSG 210, NSG 215 and NSG 212) with a grade of "C" or higher 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:005913
Pharmacology II
Focuses on common drugs, their classification and effects on functional and dysfunctional health patterns (activity/ exercise, coping/upset/tolerance, role/relationship, altered self-perception/self-concept, and cognitive perceptual).

Emphasizes nursing responsibility, accountability, and application of the nursing process regarding drug therapy. (Unsuccessful completion of NSG 225 will require mandatory withdrawal from NSG 226: 201 KAR 20:320. Pre-requisite: (NSG 220 and NSG 211 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 230. Pre-requisite or Co-requisite: BIG 225 (within ten years) with a grade of "C" or better and ENG 102. Lecture: 3.0 credits (45 contact hours). Laboratory: 3.0 credits (135 contact hours).

Components: Lecture Attributes: Technical

NSG 230(6) 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 management of patients with dysfunctional health patterns: neurological, eyes/ears, immune/cancer, multiple systems organ failure, and disaster planning. Role transition is addressed and emphasizes leadership, management of care, skill development and professionalism. NSG 230 is the capstone course and must be successfully completed in the final semester of the associate degree nursing program enrollment. (201 KAR 20:320). Pre-requisite: (NSG 220 and NSG 211 and BIO 225) with a grade of "C" or higher and ENG 102. Pre-requisite or Co-requisite: NSG 213, NSG 225, Heritage/Humanities/Foreign Language. Lecture: 3.0 credits (45 contact hours) Laboratory: 3.0 credits (135 contact hours).

Components: Clinical, Laboratory, Lecture

Attributes: Technical

NSG 236(9) Course ID:005915
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 or OR completion of HST 121 OR completion of the NSG 196 with a grade of "C" or better) Co-requisite: BIG 225 (within 10 years) with a grade of "C" or better OR HST 122 with a grade of "C" or better and ENG 102. Nursing Pharmacology II (NSG 226) or completion of HST 121. 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 (180 contact hours, 45:1 ratio).

Components: Clinical, Laboratory, Lecture

Attributes: Course Also Offered in Modules, Technical

NSG 270(3) Course ID:004283
Genetic Disorders
Introduction to various genetic disorders which health care workers are likely to see during their careers. Specific areas of study include basic genetic concepts, inheritance modalities, genetic disorders, and the impact on nursing care. Follows up on information obtained in Anatomy and Physiology, high school science, and basic health classes presently offered by KCTCS.

Components: Lecture

Attributes: Technical

NSG 295(3) Course ID:005782
Healthcare Cultural Immersion Experience
Provides experience in word processing including the mastery of touch typing with speed and accuracy. Lecture: 5.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

NSG 299(1 - 4) Course ID:000531
Instructor Consent Required/Selected Topics in Nursing
Various nursing topics, issues, and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructors; courses may be repeated with different topics to a maximum of six credit hours.

Lecture: Various by topic; Laboratory: Varies by topic. Pre-requisite: Consent of instructor.

Components: Laboratory, Lecture

Attributes: Technical

OST 100(1) Course ID:003768
Keyboarding
Develops skill operating a keyboard by touch. Lab: 1.0 credit (45 contact hours).

Components: Laboratory

Attributes: Technical

OST 101(3) Course ID:004926
Keyboarding & Intro to Document Formatting
Develops skill in operating a keyboard by touch and to develop an introductory level of skill producing standard business documents using a word processing program with speed and accuracy. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

OST 105(3) Course ID:003769
Introduction to Information Systems
Introduces students to computer concepts and terminology related to operating system, file management and data processing. Teaches basic competencies in searching, locating, and evaluating information on the internet, using email and other online tools, and demonstrating responsible and ethical online and offline behavior. Teaches beginning skills in word processing electronic spreadsheets, presentations, databases and integration as well as how to keep up with emerging technologies and use computer skills to enhance quality of life and employability. Pre-requisite: RDD 020 or consent of Instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Digital Literacy, Course Also Offered in Modules

OST 108(3) Course ID:004521
Editing Skills for Office Professionals
A hands-on approach to editing business documents. Applies proper placement and structure of business documents. Reviews principles of grammar, punctuation, spelling, word and number usage, and proofreading rules. Lecture: 3 credits (45 contact hours).

Components: Lecture

Attributes: Technical

OST 109(3) Course ID:004520
Legal Terminology
Introduces the judicial system (discovery, trial, and appellate processes), civil law, criminal law, legal terminology and legal citations commonly used in the legal field. Includes an overview of the legal system and how to use them in legal context. Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

OST 110(3) Course ID:003770
Instructor Consent Required
Document Formatting and Introduction to Word Processing
Provides experience in word processing including the mastery of touch typing with speed and accuracy using industry standard software. Pre-requisite: RDD 020 and Consent of Instructor (individual equivalent skills). Lecture: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Course Also Offered in Modules, Technical
OST 112(3) Course ID:004428
Financial Management
Designed to teach students fundamental principles and concepts including: financial markets, futures, bonds, commodities, interest rates, and taxes. The primary emphasis is short and long term financial planning along with interpretation of financial information. Careers in the financial industry discussed. Lecture: 3 credits (45 contact hours).
Components: Lecture Attributes: Technical

OST 113(1) Course ID:005270
Speed Building
Presents techniques for increased keyboarding speed and accuracy. Lecture: 1 credit (15 contact hours). Pre-requisite: OST 100 or equivalent as determined by typing competency test.
Components: Lecture Attributes: Technical

OST 130(3) Course ID:004518
Typography
Introduces the principles of typography, type basics, type aesthetics, how to design with type, parameters of type and how they can be used to produce quality type. Utilizes advanced commands and pagination composition skills. Studies grids, file management and other options such as design standards with business publications. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

OST 150(3) Course ID:003771
Transcription and Office Technology
Produce usable business documents from machine dictation using word processing software, with emphasis on spelling, punctuation, and grammar. Proofreading and editing applications stress the importance of accuracy and quality of document creation and production. Demonstration of office machines will be incorporated. Lecture: 3 hrs; Laboratory: 0. Pre-requisite: ENG 101 or Permission of Instructor and OST 110
Components: Lecture Attributes: Technical

OST 160(3) Course ID:003772
Records and Database Management
Presents aspects of the management of records from creation to disposal, using database software to create an electronic filing and prepare reports. Pre-requisite: OST 105. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

OST 210(3) Course ID:003773
Advanced Word Processing Applications
Uses advanced features of a current word processing software to format and produce documents utilized in an office. Pre-requisite: OST 110. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

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 telecommunication. 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 procedures office simulations 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 retouching. 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: Technical

OST 250(3) Course ID:004514
Office Systems Technology Internship
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 (45-135 contact hours).
Components: Laboratory Attributes: Technical

OST 251(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. Pre-requisite: OST 210, OST 215, and OST 240, or consent of instructor. Lecture: 1.0 - 3.0 credits (45-135 contact hours).
Components: Laboratory Attributes: Technical

OST 260(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 acquired and the experience of successful program advisement. Practicum: 3 credits (150 contact hours).
Components: Practicum Attributes: Technical

OST 291(1) Course ID:005125
Presentation Graphics
Uses industry standard software to create business presentations, business graphics, transparencies, and slideshows. 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 272(3) Course ID:004511
Office Management
Management principles and techniques and their applications 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: Technical

OST 275(3) Course ID:003779
Office Management
Management principles and techniques and their applications 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: Technical

OST 280(3) Course ID:004506
Office Management
Management principles and techniques and their applications 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: Technical

OST 295(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. Pre-requisite: OST 210, OST 215, and OST 240, or consent of instructor. Lecture: 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 acquired and the experience of successful program advisement. Practicum: 3 credits (150 contact hours).
Components: Practicum Attributes: Technical

OST 1101(1) Course ID:016303
Word Processing Functions
Presents basics of word processing including the information processing cycle, using spell check, proofreading and keyboard 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 1601(2) Course ID:016814
Intro to Records Management
Describe and demonstrate the importance and specifics of record management requirements as well as specific career information. Pre-requisite OR Co-requisite: OST 105. Lecture: 1.0 credits (15 contact hours)
Components: Lecture

OST 1602(1) Course ID:016815
Intro to Database Management
Provides experience in word processing for keying tables and reports from reference materials using industry standard software. Pre-requisite OR Co-requisite: OST 105. Lecture: 1.0 credits (15 contact hours)
Components: Lecture
OST 1603(1) Course ID:016810
Records and Database Mgmt Tech
Analyzing automated techniques and describe the life cycles of stored records. Demonstrate skills related to all aspects of database filing. Pre-requisite OR Co-requisite: OST 105. Lecture: 1.0 credits (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 2103(1) Course ID:016308
Advanced Word Processing Tools
Uses advanced features of a current word processing software to format tables, insert graphics and clipart,and forms. Pre-requisite: OST 2102 or Consent of Instructor. Lecture: 1 credit (15 contact hours).
Components: Lecture
OST 2151(1) Course ID:016851
Career Planning
Studies the practice and procedures of current office concepts including job application procedures, goalsetting, and professionalism. Pre-requisite OR Co-requisite: OST 110. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
OST 2152(1) Course ID:016821
Key Office Procedure Skills
Emphasizes specific techniques and skills needed for an office setting including mail procedures, communication and public relations, business ethics and etiquette. Pre-requisite: OST 2151. Pre-requisite OR Co-requisite: OST 110. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
OST 2153(1) Course ID:016822
Decision Making Methods
Studies the practice and procedures of current office concepts including decision-making skills, problem-solving techniques, travel and meeting arrangements, and time and stress management. Pre-requisite: OST 2152. Pre-requisite OR Co-requisite: OST 110. Lecture: 1.0 credits (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 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 relatedterminology. 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 2501(1) Course ID:016823
Intro to Adv Desktop Publishing
Demonstrates methods of creating quality publications using desktop publishing software. Pre-requisite OR Co-requisite: OST 225. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
OST 2502(1) Course ID:016824
Using Graphics for Publication
Create and design desktop publishing documents using a variety of graphics. Pre-requisite: OST 2501. Pre-requisite OR Co-requisite: OST 225. Lecture: 1.0 credits (15 contact hours).
Components: Lecture
OST 2503(1) Course ID:016825
Creating Superior Publications
Design and create superior publications using desktop publishing software. Pre-requisite: OST 2502. Pre-requisite OR Co-requisite: OST 225. Lecture: 1.0 credits (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 aninformation system and the management of physical resources are included. Pre-requisite: OST 2751. Lecture: 0.5 credit (7.5 contact hours).
Components: Lecture
OST 2754(1) Course ID:005809
Managing Office Administrative Systems
Includes quality management principles and techniques for the administrative systems in a modern businessoffice. Pre-requisite: OST 2751. Lecture: 1 credit (15 contact hours).
Components: Lecture
OTA 101(3) Course ID:006666
Introduction to Occupational Therapy
Introduces the profession of occupational therapy by examination of history, philosophy, and theoreticalfoundations. Examines roles of Occupational Therapist (OT) and Occupational Therapy Assistant (OTA) with respect to education, credential, employment settings, and ethics. Outlines usage of Occupational TherapyPractice Framework, medical terminology, group dynamics, and communication skills. Pre-requisite: Admission to OTA program or permission of instructor. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical
OTA 113(2) Course ID:006669
Applied Anatomy and Kinesiology
Studies the musculoskeletal and nervous systems of the human body in relationship to movement and function. Emphasizes the upper extremity and shoulder girdle. Focuses on innervation of muscles, muscle grouping forfunction, and common problems seen when these systems are affected by disease/injury. Introduces the analysisof movement in specific life tasks. Uses the goniometer for joint measurement, manual muscle testing forstrength, 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 contacthours).
Components: Lecture Attributes: Technical
OTA 115(2) Course ID:006881
Skills and Interventions I
Develops the basic foundational principles/applications of occupational therapy, such as the concept of basicneeds, therapeutic interventions, techniques, analysis, safety, and adaptive skill development and the basis of an individual's occupational performance. Provides explanation and introductory lab practice of 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 ofmediating, compensating, grading, and/or modifying activities and environments for optimal occupational performance. Develops communication skills necessary for documentation and patient interaction. Focuses onappropriate treatment and need for awareness of ethic, 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. Lecture: 2.0 credits (90 contact hours).
Components: Lecture 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 assistive 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 IIA Fieldwork
Provides the opportunity to observe and participate in various settings appropriate to occupational therapist 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 instruction as appropriate. Encourages development of professional behaviors and effective communicationskills. 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(3) Course ID: 006872
Occupational Therapy in Mental Health
Prepares 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. Co-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 3.0 credits (75 contact hours).
Components: Lecture Attributed: 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 contact hours).
Components: Lecture Attributed: 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. Developmental assessment skills in order to plan appropriate treatments applicable to deficits in occupational performance, including fabrication of orthotics and adaptive equipment. Lecture/Lab: 3.0 credits (75 contact hours).
Components: Lecture Attributed: 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 settings, 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 therapist assistant. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).
Components: Lecture Attributed: Technical

OTA 226(1) Course ID: 006874
Level IB 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 provider. Provides opportunities to develop intermediate skills in the occupational therapy process. Provides opportunities for students to advance to therapeutic skills and to generalize skills and knowledge from the classroom to the practice setting. Hones professional behaviors and communication skills established in previous occupational therapy classes. Pre-requisite: Admission to OTA program and permission of instructor. Clinical: 1.0 credit (60 contact hours).
Components: Clinical Attributed: Technical

OTA 236(2) Course ID: 006875
Professional Transitions and Management
Explores professional issues related to the transition from student to practitioner. The relationships the occupational therapy assistant (OTA) has with other health care professionals, identification of licensure and certification requirements, professional memberships, job search strategies, methods of reimbursement, and formulation of professional resources to become a successful entry level therapist. Pre-requisite: Admission to OTA program and permission of instructor. Lecture: 2.0 credits (30 contact hours).
Components: Lecture Attributed: Technical

OTA 246(3) Course ID: 006876
Pediatric Issues in Occupational Therapy
Examines occupational therapy in the pediatric population. Investigates how physical, emotional, and cognitive processes begin, change, and develop from birth through adolescence. Addresses concepts of occupation in pediatrics. Encourages students to view treatments holistically while learning normal developmental milestones and various disabilities. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 3.0 credits (75 contact hours).
Components: Lecture Attributed: Technical

OTA 256(2) Course ID: 006877
Elder Issues in Occupational Therapy
Explores the concerns for occupational therapy in the aging population. Examines how physical, emotional, and cognitive processes change through adulthood. Discusses the concepts of occupational therapy throughout the lifespan spanning a holistic approach to intervention. Pre-requisite: Admission to OTA program and permission of instructor. Lecture/Lab: 2.0 credits (60 contact hours).
Components: Lecture Attributed: Technical

OTA 276(5) Course ID: 006879
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 and 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 first of two successive fieldwork rotations in unique healthcare settings/institutions. Pre-requisite: Admission to OTA program and permission of instructor. Practicum: 5.0 credits (300 contact hours).
Components: Practicum Attributed: Technical

OTA 276(5) Course ID: 006878
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 and 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 first of two successive fieldwork rotations in unique healthcare settings/institutions. Pre-requisite: Admission to OTA program and permission of instructor. Practicum: 5.0 credits (300 contact hours).
Components: Practicum Attributed: Technical

OTA 286(2) Course ID: 006880
Clinical Seminar
Provides opportunities for students to share information from their clinical site with both the academic instructor and their classmates. Emphasizes application of information learned in other situations. Pre-requisite: Admission to Clinical Seminar.
Practicum: 2.0 credits (30 contact hours).
Components: Lecture Attributed: Technical

PGL Paralegal Technology

PGL 111(3) Course ID: 007051
Legal Systems and Terminology
Provides an overview of major principles and functions of the state and federal legal systems, introduces various legal fields for professional opportunities, presents legal vocabulary, gives an overview of different areas of law, and presents ethics. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading and writing OR completion of Transitional reading and writing courses.
Components: Lecture: 3.0 credits (45 contact hours).

PGL 112(3) Course ID: 007052
Legal Research
Introduces the basics of sources and methods of legal research, including ethics. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading and writing OR completion of Transitional reading and writing courses. Co-requisite: PGL 111. Lecture: 3.0 credits (45 contact hours).

PGL 113(3) Course ID: 007053
Law Office Management
Provides practical application of daily legal office skills needed in the legal field, professional enrichment, presentations, research, including ethics. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading and writing OR completion of Transitional reading and writing courses. Co-requisite: PGL 111. Lecture: 3.0 credits (45 contact hours).

PGL 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).

PGL 212(3) Course ID: 007055
Legal Writing
Includes composition of legal communications, briefs, memoranda, and other legal documents, with an emphasis ethical considerations. Pre-requisite: PGL 111 and PGL 112. Lecture: 3.0 credits (45 contact hours).

PGL 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 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

PGL 214(3)  Course ID:007057
Real Property I
Introduces 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

PGL 221(3)  Course ID:007058
Wills and Estates
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

PGL 223(3)  Course ID:007059
Civil Litigation II
Continues the study of the litigation process from discovery through appeal. Emphasizes collecting and organizing discovery materials and demonstrating knowledge of the limits placed on discovery by the federal and state rules of civil procedure. Includes the trial and appeal phases of litigation, with emphasis on trial preparation and appellate procedure. Pre-requisite: PGL 213. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

PGL 224(3)  Course ID:007060
Real Property II
Examines legal documents related to real property as recorded in the clerk’s office, the tax assessor’s office, and the circuit clerk’s office. Includes compiling a title abstract and completing an assignment to prepare a real estate file from transaction through closing and post-closing, implementing ethics. Pre-requisite: PGL 214. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

PGL 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

PGL 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 ethical 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

PHG Physiology

PHG 206(3)  Course ID:000848
Elementary Physiology
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: University Course (University of Kentucky)
Phlebotomy, or PHB170 Applied Phlebotomy

Lecture/Lab: 2.0 - 3.0 credits (120 - 180 contact hours).

Components: Lecture
Attributes: Technical

PHI 170(3)

Course ID: 000441

Applied Phlebotomy

Teaches proper techniques in venipuncture and capillary collection. Includes a study of medical ethics, laboratory terminology, anatomy and physiology of the circulatory system, communication and record keeping, specimen processing, laboratory safety, isolation procedures, special collection procedures, specimen processing for the various laboratory departments, venipuncture complications, and quality assurance. Pre-requisite: Permission of the MLC Program Director/MLT Clinical Coordinator. Co-requisite: PHB 152. Lecture/Lab: 3.0 credits (60 contact hours).

Components: Lecture
Attributes: Technical

PHI 170(3)

Course ID: 0016632

Philosophy of Religion

Introduces students to issues in philosophy of religion including defining the concept of God, arguments for and against the existence of God, the relation between faith and reason, the nature of religious experience, the problem of evil, and immortality. Pre-requisite: ENG 101. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Course Equivalents: REL 170
Attributes: AH - Arts and Humanities, Other

PHI 200(3)

Course ID: 016766

Professional Responsibility

Assess the proper role of ethics within different professional settings, examining different professional codes of ethics and approaches to leadership and professionalism. Examine the nature of the professional-client relationship, recursive moral dilemmas, and the role of professionals in society. Develop a professional portfolio and practical professional skills. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: AH - Arts and Humanities, Other

PHI 250(3)

Course ID: 016644

Symbolic Logic

Introduces students to the methods of formal deductive logic with emphasis upon applications to mathematics, computer science, and/or legal reasoning. Covers the language and rules of formal logic as well as techniques of formal proof. Pre-requisite: Math ACT score of 19 or above. Successful completion of Intermediate Algebra, MAT 075, MAT 126, or equivalent, or 3. KCTCS Placement Exam recommendation. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: QR - Quantitative Reasoning

PHI 260(3)

Course ID: 000698

History of Philosophy I: From Greek Beginnings to the Middle Ages

Provides an introductory study of the development of Western philosophy from ancient through late medieval times, including the development of fields such as logic, metaphysics, epistemology, and ethics. Pre-requisite: ENG 101. Lecture: 3 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: 000696

Special Topics in Philosophy: Top

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: AH - Arts and Humanities

PHI 150(3)

Course ID: 000359

Business Ethics

Introduces 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 150(1)

Course ID: 016638

Defending Business Ethics

Evaluates current theories of corporate responsibility. Pre-requisite: PHI 1502. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

PHS 173(6)

Course ID: 0001941

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: MAT 126. Lecture: 6 credits (150 contact hours).

Components: Lecture
Attributes: Other

PHX 150(3)

Course ID: 001944

Introductory Physics

Introduces the basic concepts and applications of the physical principles of force, work, rate, resistance, energy, power, force transformers and gas laws. Pre-requisite: Permission of the MLC Program Director/MLT Clinical Coordinator. Co-requisite: PHB 152. Lecture/Lab: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Technical

PHI Philosophy

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 healthcare. 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 actual 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

Introduces 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 150(1)

Course ID: 016638

Defending Business Ethics

Evaluates current theories of corporate responsibility. Pre-requisite: PHI 1502. Lecture: 1.0 credits (15 contact hours).

Components: Lecture

PHS UTC Physics

PHI 151(3)

Course ID: 000840

Introductory Physics I

Introduces the basic concepts and applications of the physical principles of force, work, rate, resistance, energy, power, force transformers and gas laws. Pre-requisite: Permission of the MLC Program Director/MLT Clinical Coordinator. Co-requisite: PHB 152. Lecture/Lab: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: SN - Science

PHI 152(3)

Course ID: 000402

Introductory Physics II

Introduces the basic concepts and applications of the physical principles of force, work, rate, resistance, energy, power, force transformers and gas laws. Pre-requisite: Permission of the MLC Program Director/MLT Clinical Coordinator. Co-requisite: PHB 152. Lecture/Lab: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: SN - Science

PHY 160(3)

Course ID: 000436

Physics and Astronomy for Elementary Teachers

Introduces 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: SL - Science Laboratory, SN - Science
PHY 181(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 182(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 (15 contact hours). Lab: 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 credits (45 contact hours). Lab: 1 credit (30 contact hours).
Components: Laboratory, Lecture
Attributes: SL - Science Laboratory, SN - Science, Course Also Offered in Modules

PHY 171A(1) Course ID:015438
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 (19.5 contact hours).
Components: Lecture

PHY 171C(1) Course ID:015440
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) Course ID:015441
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) Course ID:000487
Physics for Health Sciences
Introduces the basic concepts of motion, forces, work, energy, power and waves through experimentation, as applied in electricity and magnetism, optics, atomic, 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) Course ID:000911
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 202Laboratory. Credit is not given to students who have already completed PHY 231. Pre-requisite: (MAT 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(4) Course ID:000627
College Physics I Laboratory
Enhances concepts introduced in PHY 201 through experiments in classical mechanics and thermal physics. Pre-requisite Or Co-requisite: PHY 201 or equivalent.

PHY 204(1) Course ID:000192
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. Lecture: 1.0 credit hour (30 contact hours).
Components: Laboratory
Attributes: SL - Science Laboratory

PHY 231(4) Course ID:000230
General University Physics I
Focuses on the mechanics of matter as governed by Newton’s Laws and by the conservation laws of energy, linearmomentum, and angular momentum using calculus and trigonometry. Companion lecture to PHY 241 laboratory. Pre-requisite Or Co-requisite: MAT185 or MA 114 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) Course ID:000625
General University Physics II
Focuses on electromagnetic phenomena, circuits, and optics. Companion lecture to PHY242 laboratory. Pre-requisite: PHY 231. Pre-requisite Or Co-requisite: MAT 275 or MA 213 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) Course ID:000638
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) Course ID:000642
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 1711(0.5) Course ID:006109
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 1712(0.5) Course ID:006110
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 1713(0.5) Course ID:006111
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 1714(0.5) Course ID:006112
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 1715(0.5) Course ID:006113
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 1716(0.5) Course ID:006114
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) Course ID:006115
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) Course ID:006116
Integrated Physics Concepts
Surveys selected topics in applied physics. Pre-requisite: PHY 1711 and PHY 1712 and PHY 1713 and PHY 1714 and PHY 1715 and PHY 1716, and PHY 1717 or Consent of instructor. Lecture/Lab: 0.5 credit (9.38 contact hours).
Components: Lecture

PL 101(4) Course ID:000159
Plastic Processes and Materials
This course 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) Course ID:0001960
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, eutectics, injection, blow molding and thermoforming. Pre-requisite: PL 101. Lecture: 4 credits (60 contact hours).
Components: Lecture
Attributes: Technical

PLB 100(3) Course ID:004325
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
Journeyman Exam. Lecture: 2 credits (30 contact hours).

PLB 151(3) Course ID:001946
Basic Plumbing Skills
This course introduces the student to basic pipe joining techniques. Pre-requisite: PLB 150. Laboratory: 3 credits (150 contact hours).

PLB 250(3) Course ID:001950
Plumbing Appliances & Fixtures
Provides the proper installation procedures for piping, water heaters and sewage systems. The plumbing codes appropriate for each installation will also be studied. Laboratory: 1 credit (45 contact hours).

PLB 298(4) Course ID:004251
Instructor Consent Required
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).

PLB 163(2) Course ID:001949
Plumbing Fixtures
Introduces the student to basic pipe joining techniques. Co-requisite: PLB 150. Laboratory: 3 credits (45 contact hours).

PLB 216(2) Course ID:001951
Pumps and Water Heaters
Introduces the installation of plumbing fixtures (water heater), and appliance repair. Pre-requisite: PLB 150. Co-requisite: PLB 250. Laboratory: 2 credits (90 contact hours).

PLB 250(3) Course ID:001953
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. Laboratory: 2 credits (30 contact hours).

PLB 261(2) Course ID:001954
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).

PLB 262(3) Course ID:001955
Backflow Prevention
This course teaches the student how to protect portable water systems from the hazards of backflow. Pre-requisite: Consent of Instructor. Lecture: 3 credits (45 contact hours).

PLB 270(3) Course ID:001956
License Preparation for Journeyman Exam
Provides a study of Kentucky Code in preparation for the Journeyman Exam. Lecture: 2 credits (30 contact hours).

PLW 100(4) Course ID:006695
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: 4.0 credits (150 contact hours).

PLW 125(4) Course ID:006696
Principles of Engineering
Introduces the student to various types of engineering, engineering communications, various design processes, types of engineering systems, statics, materials, and strength of materials, engineering formability, and kinematics. Pre-requisite: PLW 100. Lecture/Lab: 4.0 credits (150 contact hours).

PLW 133(4) Course ID:007281
Principles of Human Body Systems
Engages students in the study of human body systems investigating identity, communication, power, movement, protection, and homeostasis. Uses experiments that investigate the structures and functions of the human body and used data acquisition software to monitor body functions. Explores science in action as students build organs and tissues on a skeletal model, work through real-world cases, and role-play biomedical professionals to solve medical mysteries. Pre-requisite: PLW 130. Lecture/Lab: 4.0 credits (150 contact hours).

PLW 140(4) Course ID:015805
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 codein 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 engineering design play in the development of interventions of the future examined. Pre-requisite: PLW 135. Lecture: 4.0 credits (150 contact hours).

PLW 143(4) Course ID:016454
Biomedical Innovation
Engages students in the study of human body systems investigating identity, communication, power, movement, protection, and homeostasis. Uses experiments that investigate the structures and functions of the human body and used data acquisition software to monitor body functions. Explores science in action as students build organs and tissues on a skeletal model, work through real-world cases, and role-play biomedical professionals to solve medical mysteries. Pre-requisite: PLW 130. Lecture/Lab: 4.0 credits (150 contact hours).

PLW 150(4) Course ID:006697
Digital Electronics
This course uses computer simulations and hands on laboratory to teach students about the logic of electronics they design, test, and construct electronic circuits and devices. Lecture: 1 credit (15 contact hours). Lab: 3 credits (45 contact hours).

PLW 200(4) Course ID:006698
Aerospace Engineering
The major focus of the Aerospace Engineering (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: 4.0 credits (150 contact hours).

Components: Lecture

PLW 225(4)  Course ID:006699
Civil Engineering and Architecture
The major focus of the Civil Engineering and ArchitectureTM (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: 4.0 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; CAD Software; Robotics; and Flexible Manufacturing Systems. Pre-requisite: PLW-100, PLW-125, and PLW-150. Lecture/Lab: 4.0 credits (150 contact hours).

Components: Lecture

PLW 295(4)  Course ID:006701
Engineering Design and Development
Engineering student teams research, design, and construct a solution to open-ended engineering problem using product development lifecycle and the design process; presentation to defend solutions to a panel of outside reviewers. Pre-requisite: PLW 150 AND one of the following: PLW 200, OR PLW 225, OR PLW 250, OR Consent of the APC and/or Instructor. Lecture/Lab: 4.0 credits (150 contact hours).

Components: Lecture

Attributes: Technical

PLS  Political Science

POL 101(3)  Course ID:000912
American Government
Examines national government and the political process 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: 3.0 credits (45 contact hours).

Components: Lecture

Attributes: Technical

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: Social Behavior Science

PSC  Professional Studio Artist

PSC 112(3)  Course ID:006850
Ceramics I
Introduces traditional clay forming skills, their development and use in the 21st century. Investigates handbuilding, wheelthrowing, 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
Examines calculations, 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 capabilities. 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 kilns. Design. 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. Emphasize 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 213(3)  Course ID:006856
Ceramics IV
Investigates studio pottery and advanced contemporary ceramics through refinement of construction techniques, expanding glaze pallets, and advanced surface decorations and glaze firing. Pre-requisite: PSC 210. Lab: 3.0 credits (90 contact hours).

Components: Laboratory

Attributes: Technical

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

Attributes: Technical

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: Laboratory

Attributes: Technical

PSG  Polysomnography

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 146 or MAT 150)] or consent of the instructor. Lecture: 2.0 credit (30 contact hours).

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-oculographic (EOG), electromyographic (EMG), pulse oximetry (SpO2), body position, airflow, chest and abdominal movement/electroentainment 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

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: ([BIO 137 and (MT 110 or MT 145)]) with a grade of C or better) or consent of the instructor.
PSG 130(3) Course ID:005279
Polysonomy 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
Polysonomy 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 the instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture Attributes: Technical

PSG 135(3) Course ID:005281
Polysonomy 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 (45 contact hours). Lab: 2.0 credits (60 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

PSI 116(3) Course ID:005069
Ancient Techniques
Introduces the history, methods and techniques of metalsmithing from antiquity through the 14th century. Emphasizes metalsmithing traditions and classic techniques through the design and completion of jewelry projects and assignments incorporating ancient methods. Pre-requisite: PSI 110 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory Attributes: Technical

PSI 117(2) Course ID:005070
Metal Casting/Finishing Techniques
Provides the intermediate level jewelry/metalsmithing student with experiences in the design, modeling, and studio production of three-dimensional objects by the direct mold and waste mold methods of casting precious metal. Pre-requisite: PSI 110 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory Attributes: Technical

PSI 210(3) Course ID:005071
Jewelry/Metals III
Provides an in-depth investigation into tools, techniques, and materials of the professional jeweler/metal smith including the application of coloring through enameling and alternative means. Pre-requisite: (PSI 115 and PSI 117) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSI 211(3) 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: PSI 115 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSI 212(2) Course ID:005073
Metalurgy of Precious Metals
Covers the history, methods and techniques of metalsmithing from antiquity through the 14th century. Emphasizes metalsmithing traditions and classic techniques through the design and completion of jewelry projects and assignments incorporating ancient methods. Pre-requisite: PSI 110 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSI 215(3) Course ID:005074
Jewelry/Metals IV
Includes an in-depth investigation on production methods and techniques of the professional jeweler/metal smith. Pre-requisite: PSI 210 and PSI 212 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

PSI 216(3) Course ID:005075
Stone Setting
Covers advanced stone setting methods and techniques for the professional jeweler/metal smith. Pre-requisite: (PSI 210 and PSI 212) or Consent of Instructor. Laboratory: 3.0 credits (90 contact hours).
Components: Laboratory

PSI 220(2) Course ID:005076
Jewelry/Metals Product Development
Explores product development and the business concerns of the professional jeweler/metal smith. Pre-requisite: PSI 210 and PSI 212 or Consent of Instructor. Pre-requisite Or Co-requisite: PSI 215. Laboratory: 2.0 credits (60 contact hours).
Components: Laboratory

PSI 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: (PSI 210 and PSI 212 and PSI 220) or Consent of Instructor. Lab: 6.0 credits (180 contact hours).
Components: Laboratory

PSJ 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 professionalsongwriter. 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 differentsubstitute 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. Laboratory: 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 differentsubstitute for a maximum of 4 credits. Pre-requisite: Audition. 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 subtitelfor a maximum of 8 credits. Lab: 2.0 credits (60 contact hours).
Components: Laboratory Attributes: Technical
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 subtitle for a maximum of 8 credits. Lab: 2.0 credits (60 contact hours).
Components: Laboratory
Attributes: Technical

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
Attributes: Technical

PSM 128(1) Course ID: 005559
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 108 or Consent of Instructor. Lab: 1.0 credit (30 contact hours).
Components: Laboratory

PSM 217(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 writing for specific media and multi-writer collaboration. Pre-requisite: PSM 117 or Consent of Instructor. Lab: 2.0 credits (60 contact hours).
Components: Laboratory

PSM 227(2) Course ID: 007264
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 231(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 barn dances. Pre-requisite: PSM 121 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Components: Lecture

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 musicroom 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 session data to finished products. 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 musicefield. (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, Lecture

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 115(3) Course ID: 005057
Furniture Making II
Focuses on the application of complex joinery, design features, and finishing techniques to a given furnitureset. Explores historical perspectives and business related topics. Pre-requisite: PSM 111 or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory
Attributes: Technical

PSW 210(3) Course ID: 005060
Furniture Making III
Focuses on 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 Benting 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: (PSW 115 and PSW 116) or Consent of Instructor. Lab: 3.0 credits (90 contact hours).
Components: Laboratory

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
Focuses on complicated processes of design, production, and cost efficiencies associated with operating a custom furniture studio including marketing and overall business knowledge. 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 workand cabinet 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

PSW Professional Artist/Woodwork
## PSY Psychology

### PSY 110(3) Course ID:000563

**General Psychology**
Introduces the history, methods and content of modern psychology. Covers the history and systems of psychology, psychological research, physiological psychology, psychological processes, development, psychology, personality, abnormal behavior and social psychology.
Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading OR completion of Transitional reading course(s).

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<thead>
<tr>
<th>Components: Lecture Attributes: SB - Social Behavior Science, Course Also Offered in Modules</th>
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| PSY 180(3) Course ID:000151

### Human Relations
Explores the sociological and psychological forces that affect interpersonal relationships as individuals work and live together. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading OR completion of Transitional reading course(s).

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<tr>
<th>Components: Lecture Attributes: SB - Social Behavior Science</th>
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| PSY 189(3) Course ID:000602

### Human Potential
Introduces the principles of relating to self and others and focuses upon self-growth. Lecture: 3 credits (45 contact hours).

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<tr>
<th>Components: Lecture Attributes: SB - Social Behavior Science</th>
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| PSY 188(1) Course ID:000604

### Directed Undergraduate Reading in Psychology
Explores in-depth a specific topic related to the student’s personal or career interests in psychology under the direction of a faculty member. Reading proposal must be approved by instructor. Pre-requisite: PSY 110 and consent of instructor. Lecture: 1.0 credits (15 contact hours).

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<tr>
<th>Components: Lecture Attributes: Other</th>
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| PSY 189(1 - 2) Course ID:000606

### Directed Undergraduate Research in Psychology
Requires students to design and conduct an elementary research project relevant to the student’s personal or career interests in psychology under the direction of a faculty member. Requires development of a psychology literature review. Research proposal must be approved by instructor. Pre-requisite: PSY 213 and consent of instructor (if PSY 215 is changed to PSY 213 Research Methods) Laboratory: 1.0 - 2.0 credits (30-60 contact hours).

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<tr>
<th>Components: Laboratory Attributes: Other</th>
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| PSY 195(1) Course ID:005749

### Orientation to Psychology
Orients students who plan to major in psychology at a four-year institution to the educational issues and potential career and employment options. Discusses career paths and employment opportunities, professionalsources and issues, and educational planning. Pre-requisite: Declared major in Psychology, or consent of instructor. Lecture: 1.0 credit (15 contact hours).

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<tr>
<th>Components: Lecture Attributes: Other</th>
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| PSY 212(4) Course ID:002256

### Applications of Statistics in Psychology
Introduces students to descriptive and inferential statistics in design, analysis, and interpretation of psychological research. Pre-requisite: ACT, COMPASS, or ASSET score for college level mathematics completion of Transitional math course(s); PSY 110. Lecture/Lab: 4.0 credits (75 contact hours).

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<tr>
<th>Components: Lecture Attributes: Other</th>
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| PSY 213(4) Course ID:000255

### Research Methods
Applies scientific methods to psychological research. Provides practical experience in designing and executing research project using observational, survey, and/or true experimental design methodologies. Requires an application of descriptive and inferential statistics and written report of research project results. Pre-requisite: PSY 110. Lecture: 4.0 credits (75 contact hours).

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<th>Components: Lecture Attributes: Other</th>
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| PSY 223(3) Course ID:000488

### Developmental Psychology
Examines physical, cognitive, emotional, and social development throughout the lifespan from conception to death. Reviews concepts, principles, and theories of developmental psychology. Explores influences upon psychological development such as heredity, culture, ethnicity, socioeconomic status, and gender. Pre-requisite: PSY 100 or PSY 110. Lecture: 3.0 credits (45 contact hours).

<table>
<thead>
<tr>
<th>Components: Lecture Attributes: B - Social Behavior Science, Course Also Offered in Modules</th>
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| PSY 230(3) Course ID:000387

### Psychosocial Aspects of Death and Dying
Examines the biophysiological, psychological, sociological, and cultural aspects of death and dying in the evolving global world. Explores variations in the behaviors and attitudes associated with death, dying, and bereavement, with particular attention to the contexts (e.g., cultural, familial, historical, life-span developmental) in which these variations occur. Pre-requisite: PSY 110 or SOC 101, or consent of instructor. Lecture: 3.0 credits (45 contact hours).

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<tr>
<th>Components: Lecture Attributes: Cultural Studies, SB - Social Behavior Science</th>
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| PSY 297(3) Course ID:004818

### Psychology of Aging
Provides an overview of the demographics of aging, theories of aging and research methods used to study adulthood. Examines the biological, psychological, and social impact of aging, longevity work, retirement, death and bereavement. Pre-requisite: PSY 110 or consent of instructor. Lecture: 3 credits (45 contact hours).

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<tr>
<th>Components: Lecture Attributes: B - Social Behavior Science</th>
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| PSY 298(3) Course ID:004819

### Essential Concepts of Abnormal Psychology
Provides an overview of the theories, diagnoses, and treatments of psychological disorders. Covers the biological, psychological, and social factors that influence the etiology, understanding, and management of psychopathology within society. Pre-requisite: PSY 110 or Consent of Instructor. Lecture: 3.0 credits (45 contact hours).

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<tr>
<th>Components: Lecture Attributes: SB - Social Behavior Science</th>
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| PSY 299(1 - 3) Course ID:000534

### Special Introductory Topics in Psychology
Introduces specialized topics in the field of psychology to meet current trends and investigations of contemporary issues in the discipline. May be repeated to a maximum of six credits under different subtitles. Pre-requisite: PSY 110 or consent of instructor. Lecture: 1.0 - 3.0 credits (15 - 45 contact hours).

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| PSY 1101(0.6) Course ID:006215

### Foundations of Psychology
Introduces the history, methods, and content of modern psychology to include the systems of psychology, psychological research, and physiological psychology. Pre-requisite: ACT, COMPASS, or ASSET scores for college level reading OR completion of Transitional reading course(s). Lecture: 0.6 credits (9.0 contact hours).

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<th>Components: Lecture</th>
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| PSY 1102(0.6) Course ID:006216

### Senses, Perception and Emotion
Addresses the history, methods, and content of modern psychology to include physiological psychology and psychological processes. Pre-requisite: PSY 1101. Lecture: 0.6 credit (9.0 contact hours).

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<th>Components: Lecture</th>
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| PSY 1103(0.6) Course ID:006217

### Learning, Memory, Intelligence
Addresses the history, methods, and content of modern psychology to include psychological processes. Pre-requisite: PSY 1102. Lecture: 0.6 credit (9 contact hours).

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<th>Components: Lecture</th>
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| PSY 1104(0.6) Course ID:006218

### Personality & Social Aspects
Addresses the history, methods, and content of modern psychology to include developmental psychology. Pre-requisite: PSY 1103. Lecture: 0.6 credit (9 contact hours).

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<th>Components: Lecture</th>
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| PSY 1105(0.6) Course ID:006219

### Psychological Disorders
Addresses the history, methods, and content of modern psychology to include abnormal psychology and psychological processes. Pre-requisite: PSY 1104. Lecture: 0.6 credits (9.0 contact hours).

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<th>Components: Lecture</th>
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| PSY 1801(1) Course ID:016655

### Concepts in Human Relations
Explore basic concepts related to the sociological and psychological forces that affect interpersonal relationships as individuals work and live together. Lecture: 1.0 credits (15 contact hours).

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<th>Components: Lecture</th>
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| PSY 1802(1) Course ID:016856

### Communication and Diversity
Explore communications and diversity related to the sociological and psychological forces that affect interpersonal relationships as individuals work and live together. Pre-requisite: PSY 1801. Lecture: 1.0credit (15 contact hours).

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<th>Components: Lecture</th>
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| PSY 1803(1) Course ID:016657

### Human Relations and Stress
Explore human relations and health to include the impact of stress and emotions and how they relate to the sociological and psychological forces that affect interpersonal relationships as individuals work and live together. Pre-requisite: PSY 1802. Lecture: 1.0 credits (15 contact hours).

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<th>Components: Lecture</th>
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| PSY 2331(0.6) Course ID:006379

### Foundations of Development
Introduces the principles of developmental psychology with emphasis on theory and data relating to the physical, cognitive, and psycho-social developmental aspects. Explores prenatal development through the birth process. Pre-requisite: PSY 110. Lecture: 0.6 credit (9 contact hours).

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<th>Components: Lecture</th>
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| PSY 2223(0.6) Course ID:006380

### Infancy through Early Childhood
Emphasizes theory and data relating to the physical, cognitive, and psycho-social developmental aspects of infancy, toddlerhood, and early childhood. Pre-requisite: PSY 2231. Lecture: 0.6 credit (9 contact hours).

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<th>Components: Lecture</th>
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| PSY 2233(0.6) Course ID:006381

### Middle Childhood & Adolescence
Emphasizes theory and data relating to the physical, cognitive, and psycho-social developmental aspects
of middle childhood and adolescence. Pre-requisite: PSY 2232. Lecture: 0.6 credit (9 contact hours).

Components: Lecture

PTA 203(2) Course ID:006726
Therapeutic Modalities in Physical Therapy Lab
Develops skills in data collection, documentation, and the application of selected physical therapy interventions including, massage, superficial heat and cold, sound agents, electrotherapy, biofeedback, traction, and compression therapy. Pre-requisite: Admission to the PTA Program; Completion of PTA 1501, PTA 1502, PTA 120, and PTA 121 with a grade of C or better. Co-requisite: PTA 222, PTA 223, PTA 232, PTA 240, PTA 240. Lecture: 2 credits (60 contact hours). Components: Lecture 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, PTA 121 with a grade of C or better. Co-requisite: PTA 222, PTA 223, PTA 232, PTA 240, PTA 240. Students cannot progress to PTA 240 without a grade of C or better in all other co-requisite courses. Lab: 3 credits (45 contact hours). Components: Lecture Attributes: Technical

Course Descriptions

PTA 101(5) Course ID:01610201-AUG-2017
Orientation to Physical Therapy Practice
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 an introductory patient-care skills such as communication, aseptic techniques, body mechanics, safety procedures, wheelchair management, patient positioning and draping, 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. Co-requisite: PTA 125. Lecture: 2 credits (30 contact hours). Lab: 3 credits (90 contact hours). Components: Laboratory, Lecture Attributes: Technical

PTA 120(2) Course ID:006723
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, and introductory patient-care skills such as communication, aseptic technique, body mechanics, safety procedures, wheelchair management, patient transfer, 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 grade of C or better. Co-requisite: PTA 1501, PTA 1502, PTA 121, PTA 170. Lecture: 2 credits (30 contact hours). Components: Lecture

PTA 121(2) Course ID:006724
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, pain assessment, passive, active, and active-assisted exercise, stretching, and documentation. Lab experiences will reflect concepts taught in the paired lecture course. Pre-requisite: Admission to the PTA Program; Completion of BIO 137 & BIO 139 with a grade of C or better. Co-requisite: PTA 1501 and PTA 1502 and PTA 120 and PTA 170. Lab: 2 credits (60 contact hours). Components: Laboratory

PTA 125(1) Course ID:007370
Neuroanatomy for the PTA
Encompasses the anatomy of the central and peripheral nervous systems and applies these concepts to common neuromuscular pathologies found in rehabilitation. Pre-requisite: Admission to the PTA Program and completion of BIO 137 with a grade of C or better. Co-requisite: PTA 101. Lecture: 1.0 credit (15 contact hours). Components: Lecture

PTA 150(6) Course ID:004174
Functional Anatomy and Kinesiology
Emphasizes the structure and function of the musculoskeletal system, the relationship with biomechanical principles, basic physical principles, and the mechanical aspects of human motion. Includes muscle testing, flexibility testing, goniometry, and aspects of normal gait and posture. Pre-requisite: [Pathway 1. Admission to the PTA Program and completion of BIO 137, BIO 139, PTA 101 & PTA 125 with a grade of C or better] OR [Pathway 2: Admission to the PTA Program and completion of PTA 150 and 160 with a grade of C or better, Co-requisite: [Pathway 1: PTA 160 and PTA 170] OR [Pathway 2: PTA 120, PTA 121 and PTA 170]. Lecture: 3.0 credits (45 contact hours). Lab: 3.0 credits (90 contact hours). Components: Laboratory, Lecture Attributes: Course Also Offered in Modules, Technical

PTA 160(3) Course ID:004173
Medical and Surgical Conditions in Physical Therapy
Includes the study of health and disease of all age groups with an emphasis on the etiology, pathology, prevention, data collection, and physical therapy interventions in selected medical and surgical conditions encountered in physical therapy. Pre-requisite: Admission to the PTA Program and completion of BIO 137, BIO 139, PTA 101 and PTA 125 with a C or better. Co-requisite: PTA 150 and PTA 170. Lecture: 3 credits (45 contact hours). Components: Lecture Attributes: Technical

PTA 170(1) Course ID:004013
Clinical Practice I
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 courses. Pre-requisite: Admission to the PTA Program and completion of BIO 137, BIO 139, PTA 101 & PTA 125 with a C or better. Co-requisite: [Pathway 1: PTA 150 and PTA 160] OR [Pathway 2: PTA 120, PTA 121, PTA 1501, and PTA 1502]. Clinical: 1 credit (60 contact hours). Components: Clinical Attributes: Technical

PTA 200(5) Course ID:006725
Therapeutic Modalities in Physical Therapy
Includes the basic physical science principles of selected physical therapy interventions, 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 grade of C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 223, PTA 232, PTA 202, and PTA 240. Components: Lecture Attributes: Technical

PTA 222(2) Course ID:006727
Pathology & Rehabilitation of Orthopedic Conditions
Emphasizes the etiology, pathology, 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 grade of C or better. Completion of PTA 170 with a grade of P. Co-requisite: PTA 222, PTA 232, PTA 240, 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: Lecture Attributes: Technical

PTA 223(2) Course ID:006728
Pathology & Rehabilitation of Orthopedic Conditions Lab
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 grade of C or better. Components: Laboratory Attributes: Technical

PTA 225(5) Course ID:004016
Physical Therapy Principles & Procedures
Emphasizes selected physical therapy interventions, data collection, and selected physical therapy interventions for management of patients with the following problems: musculoskeletal conditions, pulmonary diseases, pathological gait, balance problems, thermal injuries, arthritis, amputations and cardiac diseases. Includes therapeutic exercise, orthotics, prosthetics, wellness, and women’s health issues. Pre-requisite: Admission to the PTA Program and completion of PTA 1501 and 160 with a grade of C or better; PTA 170 with a grade of P; all general education courses required for completion of the Physical Therapist Assistant program with a grade of C or better. Co-requisite: PTA 220 and PTA 240. Lecture: 2 credits (30 contact hours). Laboratory: 3 credits (90 contact hours). Components: Laboratory, Lecture Attributes: Technical

Course Descriptions

PSY 2234(0.6) Course ID:006382
Emerging and Middle Adulthood
Encompasses the neuroanatomy of the peripheral nervous system and applies these concepts to related death and bereavement. Pre-requisite: PSY 2234. Lecture: 0.6 credit (9 contact hours). Components: Lecture

PSY 2235(0.6) Course ID:006383
Late Adulthood, Death & Dying
Encompasses the neuroanatomy and data relating to the physical, cognitive, and psycho-social developmental aspects of late adulthood. Pre-requisite: PSY 2235. Lecture: 0.6 credit (9 contact hours). Components: Lecture
PTA 233(2) Course ID:006730
Pathology & Rehabilitation of Neurological & Pediatric Conditions
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, genetic/congenital, and balance disorders. Includes 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.
Components: Laboratory, Lecture
Attributes: Technical

PTA 234(2) Course ID:016878
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/congenital disorders. Includes balance disorders, normal growth and development, and the rationale of physical therapy interventions.
Pre-requisite: Admission to the PTA Program; Completion of PTA 1501, PTA 1502, PTA 120, and PTA 121 with a C or better.
Components: Laboratory, Lecture
Attributes: Technical

PTA 235(1) Course ID:007631
Pathology & Rehabilitation of Special Populations & Conditions
Develops skills in the application of selected physical therapy interventions for patients with the following problems: respiratory system, cardiovascular system, metabolic, and neuromuscular pathology; psychiatric disorders; infectious diseases; oncology; thermal injuries; integumentary disorders; and wounds. Includes therapeutic exercise and wound care.
Components: Laboratory, Lecture
Attributes: Technical

QMS 101(3) Course ID:004464
Introduction to Quality Systems
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.
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

QMS 201(3) Course ID:004465
Customer Service Improvement Skills
Students will develop cognitive processes and behavioral skills needed to improve quality in customer service. Topics include customer satisfaction, self-evaluation, personal mission statements, time management, communication techniques, and interpersonal and listening techniques. Coaching, mentoring, group problem solving, and decision making techniques. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Course Also Offered in Modules, Technical

QMS 202(3) Course ID:000069
Performance Management
Students are introduced to a systematic, data-oriented approach to maintaining performance and quality. Data are used to measure and evaluate effectiveness of performance. Organizational and individual behavior will be studied in the context of increasing performance and quality.
Components: Lecture
Attributes: Course Also Offered in Modules, Technical
QMS 210(3)  Course ID:004283
Lean Processes
Introduces the concepts and skills of lean processing for manufacturing and service settings. Covers organizational readiness, SS, value stream mapping, kaizen, and visual workplace. Examines the implementation of processing. Pre-requisite: QMS 101 or Consent of Instructor and MA 109 or MT 150. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

QMS 212(3)  Course ID:004284
Project Management
Provides insight into concepts and skills required to design the infrastructure for the successful planning, scheduling, and launching of a project. Promotes skills necessary to improve coordination of organizational resources, create effective teams, operate efficiently in a rapidly changing world, and minimize internal problems of system start up. Teaches techniques to gain organizational acceptance for projects. Pre-requisite: QMS 101 or consent of instructor. Lecture: 3 Credits (45 contact hours).
Components: Lecture
Attributes: Technical

QMS 220(3)  Course ID:004466
Quality Audits
Involves an in-depth examination of the function of planning, organizing, and conducting quality audits. Emphasizes planning, implementing, and reporting results of quality audits and taking corrective action. Pre-requisite: QMS 101 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: Lecture
Attributes: Technical

QMS 240(3)  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 understanding and to improve quality of products and service. Investigates sampling principles. Uses computergenerated analyses. Pre-requisite: MA 109 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:000668
Strategic Quality Planning
Introduces strategic 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:000694
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 optimum 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)  Course ID:000537
Instructor Consent Required
Selected Topics in Quality Management Systems: (Topic)
Topics vary from semester to semester. This course maybe repeated with different topics for a maximum of 6 contact hours. Lecture: 1-3 credits (15-90 contact hours). Pre-requisite: Consent of Instructor.
Components: Lecture
Attributes: Technical

QMS 101(0.6)  Course ID:005165
Understanding a Focused Organization
Past quality initiatives and progressive quality trends. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 102(0.6)  Course ID:005166
Quality Tools of the Trade
Quality improvement tools and techniques and their integration into an organization. Pre-requisite: QMS 101 or consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 103(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 102 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 104(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 101 or Consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 105(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 104 or Consent of Instructor. Lecture: 0.6 credit (9 contact hours)
Components: Lecture

QMS 107(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 group/work group effectiveness. Includes self-evaluation, personal mission statements, time management, communication and learning 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 201(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 201 or Consent of Instructor. Lecture: 1 credit (15 contact hours)
Components: Lecture

QMS 202(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 202 or Consent of Instructor. Lecture: 1 credit (15 contact hours)
Components: Lecture

QMS 220(0.6)  Course ID:005170
Introduction to Performance Management
Emphasizes on performance management and the ABC model of behavior change. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 225(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 225 or consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

QMS 240(0.6)  Course ID:005173
Pinpoints and Measurement
Fundamentals of pinpointing, identifying a job’s mission, and understanding effective measurement. Pre-requisite: QMS 225 or consent of Instructor. Lecture: 0.6 credits (9 contact hours)
Components: Lecture

Rae 100(3)  Course ID:005363
Introduction to Chinese Culture
Examines economic, political, cultural, and social realities that offer more opportunities and engagement at every level for non-native Chinese people. Includes some basic vocabulary. Lecture: 3 credits (45 contact hours)
Components: Lecture
Attributes: Cultural Studies, SB - Social Behavior Science

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:004858
Elementary Modern Standard Arabic
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: Other

Rae 151(4)  Course ID:004858
Elementary Modern Standard Arabic
Introduces 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. Lecture: 4.0 credits (60 contact hours)
Components: Lecture
Attributes: Other
<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCP 110(3)</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
<td>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: BIO137 with a grade of C or better. Co-requisite: BIO 137.</td>
</tr>
<tr>
<td>RCP 120(4)</td>
<td>Theory and Principles of Respiratory Care</td>
<td>Presents the principles and techniques of therapeutic procedures used in respiratory care.</td>
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<tr>
<td>RCP 121(1)</td>
<td>Cardiopulmonary Evaluation</td>
<td>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).</td>
</tr>
<tr>
<td>RCP 122(4)</td>
<td>Fundamentals of Respiratory Care</td>
<td>Provides an opportunity to practice in the health care team while practicing techniques of respiratory care including airway management and bronchial hygiene.</td>
</tr>
<tr>
<td>RCP 125(4)</td>
<td>Cardiopulmonary Evaluation</td>
<td>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 BIO137 and (MT 110 or MT 145 or MT 150 or MAT 146 or MAT 150 or equivalent) with a grade of C or better. 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).</td>
</tr>
<tr>
<td>RCP 130(3)</td>
<td>Pharmacology</td>
<td>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. Co-requisite. RCP 110 and (MT 110 or MT 145 or MT 150).</td>
</tr>
<tr>
<td>RCP 140(2)</td>
<td>Cardiopulmonary Assessment</td>
<td>Emphasizes blood gas analysis, pulmonary function studies, electrocardiography and chest radiography. Pre-requisite: [RCP 110 and RCP 140] with a grade of C or better] or consent of instructor. Lecture: 1.5 credits (22.50 contact hours). Laboratory: 0.5 credit (7.5 contact hours).</td>
</tr>
</tbody>
</table>

**Components:** Lecture: Technical; Laboratory: Technical; Lecture: Clinical; Laboratory: Clinical.
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(2) - 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: [RCP195 and RCP 210 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:
- Lecture
- Laboratory
- Attributes: Technical

RCP 245(2) - Course ID:004845
Advanced Cardiac Life Support
Focuses on managing acute cardiovascular emergencies including cardiopulmonary resuscitation, 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:
- Lecture
- Laboratory
- 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

RCP 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 225] 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 and 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 203(0.5) - 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 81-83. Lab: 1.0 credit (15 contact hours).

Components:
- Laboratory
- Attributes: Remedial - Reading

RDG 96(4) - Course ID:016767
Introduction to College Reading
Improves proficiency in reading comprehension, critical thinking skills, and critical reading skills by developing vocabulary techniques, active reading strategies, comprehension accuracy, and interpretation of visual elements in text. Pre-requisite: Current KCTCS placement policy. Lecture: 4.0 credits (60 contact hours).

Components:
- Lecture
- Attributes: Remedial - Reading

RDG 100(3) - Course ID:015858
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 to applied college level materials. Pre-requisite: KCTCS Placement Policy. Lecture: 1.0-3.0 credits (15-45 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. Pre-requisite: 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(0.5) - Course ID:006737
Active Reading
Applies active reading, metacognitive, self-evaluation, and reading rate strategies for efficiency 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 203(1) - Course ID:006739
Basics of Argument
Recognize basic argument components, analyze contradictions to prior learning, and draw valid conclusions about claims and supports for claims to improve critical reading and thinking skills. Use main ideas to anticipate and summarize texts. Pre-requisite: As determined by KCTCS Placement Policy. Lecture: .1 credits (15 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. Unsuccessful 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 texts. 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

RDG 185(1.0) - Course ID:006933
Critical Reading
Apply Active Reading, Metacognitive processes and analyze common text structures and supporting details to improve critical reading skills. Pre-requisite: current KCTCS Placement Policy. Lecture: .75 credits (11.25 contact hours).

Components:
- Lecture
- Attributes: Remedial - Reading

RDG 185(2.0) - Course ID:006934
Valid Supports
Identify patterns of writing and discern facts from opinions to determine valid supports. Use patterns and valid supports to organize ideas for a summary and concept map. Pre-requisite: RDG 1852. Lecture: .75 credits (11.25 contact hours).

Components:
- Lecture
Includes a comparison of investments in real estate.

Introduces various types of real estate investments.

REA 202(3) 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 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 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 credits (45 contact hours).

Components: Lecture

REA 205(3) Course ID:000620
Farm Brokerage
Involves 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 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 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 credits (45 contact hours).

Components: Lecture

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 income property. Explores how Gross Potential Income is obtained by market analysis and research, how and where to obtain all operating expenses being generated by an income-producing property, how to develop a suitable Capitalization Rate, and how to utilize the Direct Capitalization Methods. Pre-requisite: REA 121 or appraiser's license. Lecture: 1.0 credit (15 contact hours).

Components: Lecture

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 121 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, buy-sell agreements, and mortgage markets. Includes governmental influence, risk analysis, and financing of income-producing properties. Lecture: 3 credits (45 contact hours).

Components: Lecture

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 credits (45 contact hours).

Components: Lecture

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

REL 120(3) Course ID:005283
Introduction to the Old Testament
Introduces books of the Hebrew Bible (Old Testament) using knowledge of literary forms as well as historical and cultural backgrounds to aid in the interpretation of the religious and philosophical meanings of the text. Lecture: 3 credits (45 contact hours).

Components: Lecture

REL 121(3) Course ID:005282
Introduction to the New Testament
Introduces New Testament using knowledge of literary forms as well as historical and cultural backgrounds to aid in the interpretation of the religious and philosophical meanings of the text. Lecture: 3 credits (45 contact hours).

Components: Lecture

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 110). Lecture: 3 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 170(3) Course ID:005523
Philosophy of Religion
Introduces students to issues in philosophy of religion including defining the concept of God, arguments for and against the existence of God, the relation between faith and reason, the nature of religious experience, the problem of evil, and immortality. Lecture: 3 credits (45 contact hours).

Components: Lecture Course Equivalents: PH 170
Attributes: AH - Arts and Humanities, Other

REL 240(3) Course ID:006945
Life and Teaching of Jesus
Investigates 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 contexts. Investigates Paul’s ethics and his views as preserved in the Christian New Testament. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: Other

REL 299(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 130(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 130(2) 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 130(3) 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 - 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 their transition. Students will discover campus resources and support services available to them. Students will be introduced to career and life planning, study strategies, coping with stress (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: Other

SDC 102(1) Course ID:004848
Stress Management
Students will review various physiological and psychological approaches to stress with an emphasis on creating 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: Other

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 occupational 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
Attributes: Technical

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
Attributes: Technical

SED Special Education
SED 101(3) Course ID:000923
Sign Language I
Includes a functional-rotational approach to a beginning competency in Sign Language. Incorporates grammar, sign language, non-manual markers (behaviors) of sign language, and cultural information. (After an initial orientation period, no verbal communication will be used in the classroom.). Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

SED 102(3) Course ID:000804
Sign Language II
Includes a functional-rotational approach designed to follow SED 101 that will enhance students’ knowledge of Sign Language and expand their understanding and appreciation of the people who use it. Pre-requisite: SED 101. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

SED 203(3) Course ID:000530
Sign Language III
Emphasizes the practical application of signing, skills, development of cross-cultural communication abilities and vocabulary expansion. Reviews linguistic information and introduces additional linguistic materials. Prerequisite: SED 102. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

SED 204(3) Course ID:000833
Sign Language IV
Continues the expansion of sign vocabulary, sharpening of conversational skills including fingerspelling andnuances, semantics, morphology, syntax and other sign language features applied to conversational settings. Pre-requisite: SED 203. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies

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 value, two-stroke cycle engine and four-stroke cycle engine. Co-requisite: SET 110. 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, 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 and/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

SET 121(2) Course ID:002010
Mid-Section, Lower Unit and Trim/Tilt Lab
This course presents hands-on instruction in the theory necessary to repair and/or replace parts in the mid-section, lower units, and trim/tilt systems in marine applications. Co-requisite: SET 120. Laboratory: 2 credits (90 contact hours).

Components: Laboratory
Attributes: Technical

SET 122(3) Course ID:002011
Four-Cycle Engine/Starve Drive
This course presents the theory and application of repair and overhaul methods for the four-cycle engines, and how to make repairs of various stern drive systems. Prerequisite: None. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Technical

SET 123(1) Course ID:002012
Four-Cycle Engine/Starve Drive Lab
This course presents hands-on training in the theory and application of repair and overhaul methods for the four-cycle engines, and how to make repairs of various stern drive systems Co-requisite: SET 122. Laboratory: 1 credit (45 contact hours).

Components: Laboratory
Attributes: Technical

SET 200(3) Course ID:002013
Electrical 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 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. 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 an alternator/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 an alternator/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, component, 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 carburetors and make 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 232(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 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 scan for defects 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 cylinder hone, valve guide reamer, valve seat cutter, and valve grinders 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 manuals needed for measuring cylinder bore, piston fit, ring clearance, crankshaft clearance and valve train 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, perform engine maintenance for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve train 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-stroke cycle engines. Students disassemble, inspect, test, replace parts 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, tire 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 perform basic welding operations. Laboratory: 1 credit (45 contact hours).

Components: Laboratory Attributes: Technical

SET 259(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

SFA Safety and First Aid

SFA 100(1) Course ID:002034
Safety and First Aid
Safety and First Aid is a course designed to teach current strategies relative to designated emergency situations as put forth by the National Safety Council or American Red Cross. The National Safety Council or American Red Cross standardized course qualifies a student for certification in safety and first aid. Lecture: 1 credit (15 contact hours).

Components: Lecture Attributes: Technical

SFA 101(3) Course ID:004735
OSHA, Health, & Environmental Safety
The basics of OSHA compliance in addition to covering the principles of industrial health and safety, environmental regulations, and industrial requirements with a focus on personal safety and health. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT Surveying

SMT 110(3) Course ID:002035
Principles of Surveying
Provides a study of field and office procedures for measuring distances, elevations, and horizontal and vertical angles. Covers Polaris and solar observations, plane table coordinates, control surveys, and public land surveys. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 130(3) Course ID:006733
Land Surveying Graphics
Covers graphical communication in surveying and mapping, fundamentals of projection, map projection theory, 3D viewing, spatial relationships and viewpoints, plans, profiles, cross-sections, sketches for field notes and presentations in technical reports, map accuracy standards, plotting data from field notes and data collection, contour theory, and computations related to survey drafting. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 160(3) Course ID:002038
Construction Surveying
Provides a study of field and office procedures for the layout of construction sites. Includes theory of construction surveys for route locations, plant site, earthwork calculations, circular curves, lines, and grade. Pre-requisite: SMT 110, or Instructor Consent. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 210(3) Course ID:006734
Advanced Surveying Measurement
Examines the nature of measurements, statistical analysis of random errors in measurements, propagation of errors, survey standards and design specifications, development of coordinate geometry and trigonometric solutions of plane surveying problems, analysis of errors and mistakes in indirect measurement. Pre-requisite: SMT 110. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 220(3) Course ID:004438
Surveying Lab
Investigates field procedures for measuring distances, elevations, horizontal and vertical angles, state plane coordinates and control surveys as they pertain to boundary location, route location, construction and mine surveys. Co-requisite: SMT 160. Laboratory: 3 credits (90 contact hours).

Components: Laboratory Attributes: Technical

SMT 230(3) Course ID:006735
Land Boundary Location
Explores the role of the surveyor in retracing land boundaries, methods of boundary establishment, classification and analysis of boundary evidence, preparing deed descriptions and survey plats, preservation of survey evidence, surveyor as expert witness, liability, and professionalism in surveying. Pre-requisite: SMT 110. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 250(3) Course ID:006736
Mine Surveying
Introduces the theory and practice of mine surveying and use of survey instruments, for the location of drillholes, bench surveys, layout of blasting patterns, haul road layout, transfer of control from surface to underground alignment of underground development, recording of survey information, control systems, location and selection of stations, bore hole surveys, and subsidence surveys. Pre-requisite: SMT 130 or Instructor Consent. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 270(3) Course ID:002041
Professional Ethics & Conduct for Land Surveyors
Explores the professional and ethical conduct of the Land Surveyor in areas of building a business, managing employees, communications, project management, and self-management. Pre-requisite: SMT 230, or Instructor Consent. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 280(4) Course ID:004436
Introduction to GIS and GPS
This course provides an overview of the principles and practices of Geographic Information Systems (GIS) and Global Positioning Systems (GPS). The GIS portion of the course will deal with issues of spatial data models, database design, introductory and intermediate GIS operations, and case studies of real world GIS applications. The GPS portion of the course focuses on GPS technology, software applications. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (45 contact hours).

Components: Laboratory Lecture Attributes: Technical

SMT 290(3) Course ID:004435
Boundary Law
This course is the survey of property law, explaining the creation, description, and maintenance of property boundaries, easements and right-of-ways. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Technical

SMT 292(1 - 6) Course ID:004471
Instructor Consent Required

Special Topics
Various topics will be addressed. Laboratory: 1 - 6 credits (45 - 270 contact hours). Pre-requisite: Permission of Instructor. Practicum: 2 credits (150 contact hours).

Components: Laboratory Attributes: Technical

SOC Sociology

SOC 101(3) Course ID:000920
Introduction to Sociology
Introduces concepts and methods of sociology including investigation of socialization, group processes, social inequality, social institutions, and social change. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: SB - Social Behavior Science

SOC 151(3) Course ID:000844
Social Interaction
Examines the fundamental sociological and social psychological processes underlying human interaction. Focuses on the dynamics of symbolic exchange, the social context and processes shaping it, and examines its effects on the formation and maintenance of social and personality systems. Pre-requisite: SOC 101 or PSY 110 or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: SB - Social Behavior Science

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: SOC 101 or SOC 151, or Consent of Instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: SB - Social Behavior Science

SOC 220(3) Course ID:000890
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) Course ID:002258
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: Cultural Studies, SB - Social Behavior Science

SOC 249(3) Course ID:002259
Media, Society, and Culture
Examines the interplay between media, culture, and society. Pre-requisite: SOC 101 or permission instructor. Lecture: 3.0 credits (45 contact hours).

Components: Lecture Course Equivalents: COM 249 Attributes: SB - Social Behavior Science
SPA 101(4) Course ID: 000822
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. Stressing 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: STA 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/ or travel. May be taken up to two times with focus on different country or region. Lecture: 3.0 credits (45 contact hours).

Components: Lecture
Attributes: SB - Social Behavior Science
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 in the Spanish language roughly equivalent to one semester of college study. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: Cultural Studies, SB - Social Behavior Science
SPA 201(0.8) 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 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).

Components: Lecture
Attributes: Foreign Language, Cultural Studies
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 advanced grammatical structures; focuses on 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).

Components: Lecture
Attributes: Foreign Language, Cultural Studies
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 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 verbs ser (to be) and estar; explores the geography, culture, history and political issues of Spanish-speaking countries with focus on Spain. Pre-requisite: SPA 1011. Lecture: 0.8 credit (12 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies
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 verbs, uses 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
Attributes: Foreign Language, Cultural Studies
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 -ar and -er verbs, uses the geography, culture, history and political issues of Spanish-speaking countries with focus on Latin America. Pre-requisites: SPA 1013. Lecture: 0.8 credit (12 contact hours).

Components: Lecture
Attributes: Foreign Language, Cultural Studies
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, selectarse, changing and verbs with irregular yo form, 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 1013. 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: SPA 1014. 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 for to know and practice answering questions of to whom or for whom a thing 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 gusta; 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 1023(0.8) Course ID: 006229
Spanish for Restaurant Settings
Features dialogues for ordering in a restaurant and describing food, for explaining where you are and for talking about familiar people and places; introduces the preterit of stem-changing verbs, comparatives and superlatives, indirect object pronouns, and direct object pronouns; explores the geography, culture, history, and political issues of Spanish-speaking countries with focus on Spain. Pre-requisite: SPA 1022. Lecture: 0.8 credit (12 contact hours).

Components: Lecture
SPA 1024(0.8) Course ID: 006230
Spanish for Celebrations
Highlights conversations of celebrations and gratitude and discussing different stages of life; presents the preterit of irregular preterits; discusses pronouns as prepositions; explores the geography, culture, history, and political issues of Spanish-speaking countries with focus on Spain. Pre-requisite: SPA 1023. Lecture: 0.8 credit (12 contact hours).

Components: Lecture
SPA 1025(0.8) Course ID: 006231
Spanish for Health Care
Presents dialog to talk about medical conditions; contrasts the imperfect and preterit past tense; illustrate's personal construction with se; explores the geography, culture, history, and political issues of Spanish-speaking countries with focus on Costa Rica. Pre-requisite: SPA 1024. Lecture: 0.8 credit (12 contact hours).

Components: Lecture
STA Statistics
STA 111(3) Course ID: 007218
Sport Statistics
Introduces students to concepts within the sports world where math and statistics skills are applied. Includes analysis of sports formulas, processes, and calculations. Applies 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 005. Lecture: 3.0 credits (45 contact hours).
Introduction to principles of statistics with emphasis on conceptual understanding. Students will articulate the results of statistical description of sample data (including bivariate), the implications 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:** QR - Quantitative Reasoning, University Course (University of Kentucky)

**STA 2201(1)**
**Course ID: 007406**
**Descriptive Statistics**
Examine 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**
Examine theoretics 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:**
- **Lecture**

**SUR 100(12)**
**Course ID: 000246**
**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, obstetrics with attendant specialty equipment, abdominal incisions, wound closures, and standard precaution skills in each clinical assignment. Includes biomedicial sciences of electricity, physics, and robotics as they pertain to surgical technology. Pre-requisite: Admission to Surgical Technology program, current CPR certification for Healthcare Professionals. Co-requisite: SUR 100 or (SUR 109 and AHS 115 or consent. Lecture: 9 credits (135 contact hours).

**Components:**
- **Lecture**

**SUR 125(2 - 3)**
**Course ID: 000249**
**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). Prerequisite Or Co-requisite: SUR 130. Clinical: 2.0 - 3.0 credits (120 - 180 contact hours).

**Components:**
- **Clinical**

**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. Present information related to medications 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 (AHS 130 or BIO 225 or BIO 227 or BIO 118). Current CPR certification for Healthcare Professionals. All prerequisites must be achieved with a grade of C or greater. Co-requisite: SUR 130. Pre-requisite Or Co-requisite: SUR 101. Lab: 1.0 credit (45 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. Prerequisite: 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
Surgical Technology Skills Practicum II

Provides opportunity for application of techniques learned 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 110)] and SUR 125 and SUR 130. Co-requisite: SUR 200. Clinical: 6.0 - 7.0 credits (360-420 contact hours).

Components: Clinical
Attributes: Course Also Offered in Modules, Technical

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 OR-Co-requisite: Minimum grade of “C” in SUR 200 and SUR 201. Practicum: 2.0 credits (120 contact hours).

Components: Practicum
Attributes: Technical

SUR 280(5) Course ID:004246
Department Consent RequiredSurgical 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/or prevention; Emphasizes 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, cardiology, wound healing, nutrition peripherally and electrolyte balance, and techniques in maintaining homeostasis. Pre-requisite: Program admission and student must be 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 certified Surgical Technologist or an RN with operating room experience OR consent. Co-requisite: SUR 280 & SUR 285. 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 case 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. 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. Emphasizes 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 285, SUR 295. Practicum: 1 credit (90 contact hours).

Components: Practicum
Attributes: Technical

SUR 211(2) Course ID:016845
Surgical Skills I
Provides opportunity for application of techniques 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. Includes orthorhinolaryngologic, plastic and reconstructive, and oral and maxillofacial surgical procedures. Practicum: 2.0 credits (120 contact hours).

Components: Practicum

SUR 212(4 - 5) Course ID:016846
Surgical Skills II
Provides opportunity for application of techniques 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. Includes genitourinary, orthopedic, neurosurgical, cardiovascular, peripheral vascular, and ophthalmic surgical procedures. Pre-requisite: SUR 211. Co-requisite: SUR 280. Practicum: 4.0-5.0 credits (240-300 contact hours).

Components: Practicum

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: SB - Social Behavior Science, 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 sustainability planning, design, and construction across disciplines. Pre-requisite: Current KCTCS placement scores for College level reading and writing. Lecture: 3 credits (45 contact hours).

Components: Lecture
Attributes: SB - Social Behavior Science, Other

SUS 201(3) Course ID:016181
Sustainable Societies
Examines sustainable concepts, values, and institutional contexts as they are manifested in societalscapes 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: SB - Social Behavior Science, Other

SWK Social Work

SWK 124(3) Course ID:000564
Introduction to Social Services
Introduces social welfare concepts and philosophies. Examines the profession of social work and its philosophical, values, and professional ethics. Explores the role social work plays in social welfare, including public and private service delivery systems. (Recommended for 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:000587
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:000584
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 FY 110 or consent of instructor. Lecture: 3 credits (45 contact hours).

Components: Lecture, Course Equivalents: HMS 211
Attributes: Technical
SWK 260(3)  
Crisis Intervention  
Course ID:005586  

SWK 269(3)  
Juvenile Delinquency  
Course ID:000304  
The history, nature, and extent of juvenile delinquency are studied using an examination of trends and methods of treatment in contemporary society. Lecture: 3 credits (45 contact hours).

SWK 275(3)  
The Family  
Course ID:000736  
Covers the nature and structure of family systems and examination of major family issues. Includes discussion of patterns of family interaction with attention paid to resources designed to meet family needs. Lecture: 3 credits (45 contact hours).

TEC 200(3)  
Technical Communication  
Course ID:002073  
Focuses on written and oral communications in a technical environment, including a review of grammar, usage, mechanics, and punctuation. Emphasizes preparing business communications such as letters and application materials, creating technical reports and sets of instructions, creating proposals or presentation materials, and developing appropriate technical communication styles for various audiences. Covers professional use of office, social media, websites, and other electronic resources. Pre-requisite: Placement in college level writing or Consent of Instructor. Lecture: 3 credits (45 contact hours).

TEC 201(1)  
Technical Communication Basics  
Course ID:016244  
Covers basic principles of technical communication, including definition of technical communication, audience analysis, and adaptation, technical communication style, research strategies, creation of visual aids, appropriate use of social media, websites, and other electronic resources. Includes a review of grammar, usage, mechanics, and punctuation. Pre-requisites: Placement in college level writing or Consent of Instructor. Lecture: 1 credit (15 contact hours).

THA 101(3)  
Introduction to Theatre: Principles and Practice  
Course ID:000025  
Cultivates students judgment, perception, and creative response to theatre, emphasizing what and how theatre communicates through examining both processes and products of theatre.

THA 126(3)  
Acting I: Fundamentals of Acting  
Course ID:000774  
Explores a broad spectrum of skills in the creative process of acting ensemble. Includes improvisation, movement exercises, sensory work, theatre games and stage combat exercises to heighten physical awareness, release personal blocks, and discover the experience of being truthful with fellow actors. Continues with students moving on to individual work to establish physical techniques they will use when working on a production. Provides an exploration of physical and emotional awareness and development of more creative use of their imaginations. Lecture: 1.0 credit hour (15 contact hours). Lab: 2.0 credit hours (90 contact hours).

THA 127(3)  
Acting Techniques  
Course ID:002264  
Uses movement exercises, sensory work, theatre games and stage combat exercises to heighten physical awareness, release personal blocks, and discover the experience of being truthful with fellow actors. Continues with students moving on to individual work to establish physical techniques they will use when working on a production. Provides an exploration of physical and emotional awareness and development of more creative use of their imaginations. Lecture: 1.0 credit hour (15 contact hours). Lab: 2.0 credit hours (90 contact hours).

THA 141(3)  
Costuming & Make-up for the Stage  
Course ID:006781  
Develops an understanding of the basic elements of costume and make-up design and application. Lecture: 2.0 credits (30 contact hours). Lab: 1.0 credit (45 contact hours).

THA 150(3)  
Fundamentals of Production  
Course ID:002265  
Includes a comprehensive study of the basic organizational structure, processes and techniques involved in theatre design, technology and management. Lecture: 3.0 credits (45 contact hours).

Course Descriptions
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course ID</th>
<th>Attributes</th>
<th>Components</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 230(3)</td>
<td>015598</td>
<td>Technical</td>
<td>Lecture</td>
<td>Unarmed Stage Combat</td>
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<td>Provides a study of unarmed combat for the stage from both the classic and contemporary approaches to staging violence. Techniques for punches, slaps, kicks, falls, and rolls will be covered. Lecture: 3.5 credits (45 contact hours).</td>
</tr>
<tr>
<td>THA 250(3)</td>
<td>006782</td>
<td>Technical</td>
<td>Lecture</td>
<td>Stage Electrics</td>
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<td>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: 0.5 credit (90 contact hours).</td>
</tr>
<tr>
<td>THA 260(3)</td>
<td>000717</td>
<td>Technical</td>
<td>Lecture</td>
<td>Stagecraft</td>
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<td>Provides a study of theory, principles and techniques of scenic design and construction. Includes assignment and practical applications. Lecture: 2.0 credit hours (30 contact hours). Lab: 1.0 credit hour (75 contact hours).</td>
</tr>
<tr>
<td>THA 293(3)</td>
<td>000111</td>
<td>Technical</td>
<td>Lecture</td>
<td>American Theatre</td>
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<td>Surveys American theatre history, giving particular emphasis to the late twentieth 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).</td>
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<tr>
<td>VCA 102(3)</td>
<td>002108</td>
<td>Technical</td>
<td>Lecture</td>
<td>Fundamentals of Drawing</td>
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<td>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 &quot;C&quot; or better. Lecture/Lab 3.0 credits (90 contact hours).</td>
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<tr>
<td>VCA 105(3)</td>
<td>016768</td>
<td>Technical</td>
<td>Lecture</td>
<td>Drawing Concepts</td>
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<td>Develops drawing skills and illustration concepts as they apply to graphic design. Emphasizes how to create form in space and to draw in proper perspective for reproduction purposes. Students must receive a final grade of &quot;C&quot; or better to advance in all Visual Communication courses. Lecture/Lab 3.0 credits (90 contact hours).</td>
</tr>
<tr>
<td>VCA 108(3)</td>
<td>002110</td>
<td>Technical</td>
<td>Lecture</td>
<td>Creative Typographical Design</td>
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<td>Explores the use of type as a major element of design to solve visual communication problems. Includes the use of layout markers to creatively manipulate type forms and produce interesting, attractive type-only designs. Lecture: 3 credits (45 contact hours).</td>
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<tr>
<td>VCA 120(3)</td>
<td>002116</td>
<td>Technical</td>
<td>Lecture</td>
<td>Digital Photography I</td>
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<td>Introduces the skills and techniques to capture and process digital photographs. Emphasizes basic digital camera operations and lighting techniques. Includes proper techniques to import and organize photographs. Introduces basic Photoshop skills to manipulate and enhance digital photographs. Includes discussions on appropriate resolutions and file formats. Students must receive a letter grade of &quot;C&quot; or better. Lecture/Lab 3.0 credits (90 contact hours).</td>
</tr>
<tr>
<td>VCA 131(3)</td>
<td>016774</td>
<td>Technical</td>
<td>Lecture</td>
<td>Digital Photography II</td>
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<td>Explores advanced skills and techniques to capture digital photographs using various camera functions and lenses. Includes proper scanning techniques and file formats. Explores advanced skills in Adobe Photoshop tonal manipulation photographs for interesting compositions. Introduces RAW shooting and Camera RAW in Photoshop. Explores proper presentation skills for professional photography displays. Students must receive a final grade of &quot;C&quot; or better to advance in all Visual Communication courses. Pre-requisite: VCA 120 and VCC 166. Lecture/Lab: 3.0 credits (90 contact hours).</td>
</tr>
<tr>
<td>VCA 132(3)</td>
<td>000201</td>
<td>Technical</td>
<td>Lecture</td>
<td>Illustration For Advertising</td>
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<td>Develops skills in visualisation 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), editors, advertising, and books. Uses a variety of media from traditional media to digital media to create professional illustrations as elements of advertising.</td>
</tr>
</tbody>
</table>
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. Pre-requisite Or Co-requisite: VCA160 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 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: VCA160 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. Includes basic graphic design, and expands on the use of the Internet. Lecture: 5.0 credits (75 contact hours); Laboratory: 2.0 credits (30 contact hours).
Components: Lecture
Attributes: 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 200(3) Course ID:002123
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
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. Lab: 2.0 credits (90 contact hours).
Components: Lecture
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 151 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 adequate 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: 2.0 credits (30 contact hours). Lab: 2.0 credits (90 contact hours).
Components: Lecture
Attributes: Technical

VCA 261(4) Course ID:000209
Commercial Photography IV
Continues Commercial Photography III. Emphasizes color photography and 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
Attributes: Technical

VCA 270(4) Course ID:000214
Advertising Design III
Stress on 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 (60 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
Expands 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 contacthours/30:1 ratio).
Components: Laboratory, Lecture
Attributes: Technical

VCA 280(3) Course ID:002126
Instructor Consent Required
Professional Portfolio Development
Introduce students to proper assembly of a professional portfolio and present their 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 RequiredFolio Seminar
Prepares advanced design and photography students to complete a professional portfolio. Explores job interview techniques to help students understand their responsibilities and present their skills 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 (Folfram): 3 credits (150 contact hours/50:1 ratio)
Components: Laboratory
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: 2 credits (60 contact hours/30:1 ratio)
Components: Laboratory
Attributes: Technical

VCC Visual Communications Core
VCC 100(3) Course ID:004455
Introduction to Visual Communication
Introduces the concepts, vocabulary, and processes used in relation to visual communication. Includes various disciplines such as advertising and design, multimedia, and printing. Identifies career paths and specific job skills within the visual communications field. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

VCC 105(3) Course ID:004458
Fundamentals of Typography
Explores the use of type as a major element of design. Students become skilled in selecting appropriate typefaces and fonts for a variety of media. Provides experience in using type as a creative tool to produce interesting, type-only designs. Introduces the elements and principles of design. Students must receive a letter grade of "C" or better. Lecture: 3.0 credits (45 contact hours).
Components: Lecture
Attributes: Technical

VCC 106(3) Course ID:016769
Typography
Explores the use of type as a major element of design. Students become skilled in selecting appropriate typefaces and fonts for a variety of media. Provides experience in using type as a creative tool to produce interesting, type-only designs. Applies elements and principles of design. Students must receive a final grade of "C" or better to advance in all Visual Communication courses. Lecture/Lab:
VCC 110(3) Course ID:002117
Design Concepts
Explores in detail the elements and principles of design to develop skills in producing creative ideas and designs for various media forms. Apply concepts in the process of design that includes legal issues, media strategy, and consumer behavior. Students must complete with a final grade of “C” or better to advance in all Visual Communication courses. 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
Computer Graphics I
Introduces students to computer applications that are specific to the visual communication industry. Developmental skills using software applications for page layout, illustration and digital imaging. Students must complete with a final grade of “C” or better to advance in all Visual Communication courses. 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 graphics. 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 uses 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: 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 signage industry. Provides knowledge in the operation of wide format printers and vinyl cutters/plotters to create special graphics used for outdoor and indoor 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
Production Design I
Introduces concepts, vocabulary, and processes used in relation to the design and production of graphics for various media and promotional materials. Provides students with knowledge and training of various production equipment along with software applications used to design graphics. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 110 & VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 216(3) Course ID:006860
Production Design II
Introduces students to the technologies of pad printing and screen printing. Provides students with knowledge and training of various equipment and procedures to properly prepare graphics for various printing technologies. Provides students with training in software applications used to design and prepare graphics or accuracy of substrates and promotional items. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite Or Co-requisite: VCC 110 & VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 218(3) Course ID:006861
Production Design III
Provides basic knowledge of the steps and procedures used to prepare, troubleshoot, and correct files for digital printing. Provides students with the basic skills to produce and utilize PDF files. Provides knowledge in the importance of proper imposition and page-layout of various publications. Provides knowledge and training of various finishing and binding techniques used in the industry. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 110 & 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. Introduces 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 230(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 avairy 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 233(3) Course ID:016770
Graphic Design I
Explores the use of elements and principles of design in the creative ideation process. Uses the creative brief process to research, design, and create corporate identities, packaging, promotional items, and advertising campaigns. Introduce concepts, theories, terminology, and design of corporate logos, packaging, and advertising. Introduces legal requirements within the industry. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 110 & VCC 215. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 243(3) Course ID:016771
Graphic Design II
Explores advanced techniques in the creative ideation process to design professional corporate identities, packaging, promotional items, and advertising campaigns. Emphasizes the use of graphics standards for corporate branding. Defines specifications for the design of packaging and product labels. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 235. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 253(3) Course ID:016772
Emerging Media Design
Explores fundamental principles of design, function, and usability of new media technology, including games, mobile applications, web-based media and other digital media platforms. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 110 & VCC 125. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical

VCC 260(3) Course ID:001509
Instructor Consent Required
Computer Graphics II
Provides advanced skills in computer graphics using Adobe InDesign, Photoshop, and Illustrator. Creation of a variety of complex and multi-page documents will be the focus of this course. Students will gain knowledge working with PDF files, color separations, preflighting and imposition for printing. Students must receive a final grade of “C” or better to advance in all Visual Communication courses. Pre-requisite: VCC 110 & 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 graphics. Applies advanced principles, concepts, and techniques for graphic design and digital photography. Creation and manipulation of graphics for complex and designs will be the focus of this course. Students must receive a letter grade of “C” or better. Pre-requisite: VCC 166. Lecture/Lab: 3.0 credits (90 contact hours).
Components: Lecture Attributes: Technical
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 210 and VET 130. Co-requisite: VET 210 and VET 220. Lecture/Lab: 5.0 credits (135 contact hours).

Components: Lecture Attributes: Technical

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: 2 credits (60 contact hours). Pre-requisite: VMI 200. Components: Laboratory, Lecture Attributes: Technical

VMI 210(4) Course ID:005200
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 and 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 software designed to introduce radiological computer post-processing. Mastery of basic functions necessary 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 analyses. 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, VMI 210.

Components: Laboratory, Lecture Attributes: Technical

VMI 220(3) Course ID:000815
Introduction to Women’s and Gender Studies in the Social Sciences
Introduces women’s and gender studies from a social science perspective, using a cross-cultural and interdisciplinary approach. Emphasizes social science explanations for sex-typed behavior, social perceptions of women and men, and the roles of women in social and cultural life. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Cultural Studies, SB - Social Behavior Science

VMI 230(4) Course ID:000921
Introduction to Women’s and Gender Studies in the Arts and Humanities
Introduces women’s and gender studies from a humanities perspective, using a cross-cultural and interdisciplinary approach including art and literature. Examines issues and problems of women in contemporary society through the lens of race, gender, class, and socio-political spheres. Lecture: 3 credits (45 contact hours).

Components: Lecture Attributes: Cultural Studies, AH - Arts and Humanities
WLD 140(2)  Course ID:004582
Gas Metal Arc Welding
Identification, inspection, and maintenance of GTA welding 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 practices 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. 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 transfer 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 151(2)  Course ID:004603
Basic Welding A
Introduction to welding, cutting processes, and related equipment. Basic setup, operation, and related safety are applied. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory, Lecture
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, Lecture
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 such as welding specific codes 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 an understanding of the fabrication process through computer modeling systems and creation of prints or through practice fabricating from a blueprint. Allows students to read and fabricate from print, control distortion during fabrication, and follow proper welding sequence. Provides the option to generate detailed prints, create digital files, and generate work detailing the proper welding sequences. Utilizes 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
Instructor 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 welding 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 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. Filletwelds 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 229(3)  Course ID:004593
Shielded Metal Arc Welding Pipe Lab B
Uses mild steel electrodes in the 6G position including proper pipe preparations, electrodes, safety precautions, and welding sequences. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 225 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 235(3)  Course ID:004594
Gas tungsten arc welding lab A
Teaches the method of operation and application of the gas tungsten arc welding system for welding of non-ferrous pipe in 2G and 5G positions. Lab: 3 credits (90 contact hours/30:1 ratio). Pre-requisite: WLD 133 or Consent of Instructor.
Components: Laboratory
Attributes: Technical

WLD 237(3)  Course ID:004595
Gas tungsten arc welding 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: WLD133 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: WLD130 & 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 a student with a working knowledge of materials used in welding. This class includes materials identification and classifications. Metallicurgy 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 pipe 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 systems, and automated GTAW 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

WLD 298(1 - 6)  Course ID: 004443
Instructor Consent Required
Welding Practicum
Provides on-the-job work experience related to the student’s educational objectives. Students participating in the Practicum do not receive compensation. Laboratory: 1-6 credits (30-180 contact hours/30:1 ratio). Pre-requisite: Consent of Instructor.
Components: Practicum
Attributes: Technical

WMT Wood Manufacturing

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 common 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.
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 casework'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 frame construction 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
Attributes: Technical

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 custom 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.
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.
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.
Components: Lecture

WPP Workplace Principles

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

WPP 2001(1)  Course ID: 016787
Soft Skills
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. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

WPP 2002(1)  Course ID: 016788
Job Search
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. Lecture: 1.0 credits (15 contact hours).
Components: Lecture

WPP 2003(1)  Course ID: 016789
Employment Preparation
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: 1.0 credits (15 contact hours).
Components: Lecture

ZOO Applied Experiences in Zoo Technology
Provides experience working in a fully accredited zoo and exposure to zookeeping with many facets of animal husbandry. Practicum: 3 - 6 credits (180-360 contact hours).
Components: Practicum
Attributes: Technical