

This section of the catalog is arranged in alphanumeric order. In general, the following list may be used to find the courses offered within each technology:

ACC	Accounting
AET	Alternative Energy
ANT	Anthropology
ART	Art
ATS	Associate of Technical Studies
BAN	Banking and Finance
BIO	Biological Sciences (Biology, A & P, etc.)
BUS	Business
CAD	Computer Aided Design
CET	Construction Engineering Technology
CHM	Chemistry
CIS	Computer and Information Systems
CJT	Criminal Justice
DBP	Database Processing
ECD	Early Childhood
ECO	Economics
EDP	Paraprofessional
EDU	Education
EET	Electrical Engineering Technologies
EMS	Emergency Medical Services
ENG	Communications (Composition, Speech, Literature)
ETC	Electrical Trades Construction
FRA	Forensic Accounting
GEO	Geography
GSD	General Studies
HIS	History
HPF	Beginning Western/English Horsemanship
HST	Human Services
HUM	Humanities
IET	Industrial Engineering Tech
IND	Industry
INT	Industrial Technology
ITR	Industrial Training
JAT	IBEW
MEA	Medical Assisting
MET	Mechanical Engineering Technologies
MGT	Management
MKT	Marketing
MTH	Mathematics
MUS	Music
NRS	Associate Degree Nursing
OAS	Office Administrative Services
PAR	Paralegal
PET	Plastics Engineering Technology
PHI	Philosophy, Ethics, Logic, Religions
PHY	Physics
PLC	Programmable Logic Controllers
PNE	Practical Nursing Program
PSY	Psychology
QCT	Quality Control Technology
REA	Real Estate
RTI	Related Trades Instruction
SPN	Spanish
SCM	Supply Chain Management
SSC	Social Sciences (Sociology, Political Science, etc.)
STA	Statistics
TRN	Transportation
VCT	Visual Communications
WLD	Welding Technology

The College reserves the right to change courses as needed. Course description and prerequisites are effective for the academic year(s) of this catalog.

The parentheses at the end of each course description indicate the lecture and lab hours respectively. Example: (3+1) indicates a course with 3 lecture hours and 1 lab hour.

Developmental classes have numbers below 100, and are graded Satisfactory/Unsatisfactory. These courses DO NOT meet course requirements for graduation.

ACC090 Introduction to Accounting 3 Cr. Hrs.

This course is designed for students who have had no previous accounting instruction or for those desiring an introductory course before beginning the accounting sequence. This course covers accounting terminology, financial statement concepts, intensive drills on debits/credits, and a brief overview of the accounting cycle.
(3+0)

ACC111 Financial Accounting 3 Cr. Hrs.

The course includes a study of the accounting cycle beginning with the business transaction and ending with the preparation of financial statements along with other period end procedures for both sole proprietors as well as corporations. Other topics include: receivables, inventory, depreciation, liabilities, investments, and stock. Transfer Assurance Guide (TAG) approved effective spring 2017 (OBU010 - Introduction to Financial Accounting).
(3+0)

ACC112 Managerial Accounting 3 Cr. Hrs.

This course begins with the Statement of Cash Flows and then focuses on managerial topics. These areas of study include: job order and process costing, activity based costing, cost behavior and cost-volume-profit analysis, budgeting, variance analysis, evaluation for decentralized operations, differential analysis, and product pricing, and capital investment analysis. Transfer Assurance Guide (TAG) approved effective spring 2017 (OBU011 - Introduction to Managerial Accounting).
(3+0)

Prerequisite: ACC111 with a "C" or better

ACC120 Payroll Accounting 3 Cr. Hrs.

This course includes the various phases of the Social Security Act, unemployment compensation, and federal withholding tax, with considerable emphasis on the study of timekeeping systems and systems of accounting used in keeping payroll and wage records. Students complete the necessary federal and state tax reports and apply payroll accounting concepts to microcomputer applications.
(3+0)

Co-requisite: ACC090 or OAS103 or ACC111

ACC140 Individual Income Tax Accounting 3 Cr. Hrs.

Major emphasis is on individual income tax laws and regulations. The course is designed to have both a personal and vocational value, covering tax return preparation, tax planning, and research.
(3+0)

ACC211 Intermediate Accounting I 3 Cr. Hrs.
This course is a review and expansion of concepts learned in accounting principles. Topics studied are the accounting cycle, financial statements, revenue recognition, cash, receivables, and inventories.
(3+0)
Prerequisite: ACC112 with grade of "C" or better

ACC212 Intermediate Accounting II 3 Cr. Hrs.
This course is a continuation of Intermediate Accounting I. Subject matter includes: debt and equity financing, noncurrent assets, long term investments, income tax allocation, employee compensation, and additional disclosures.
(3+0)
Prerequisite: ACC211

ACC221 Cost Accounting I 3 Cr. Hrs.
This course teaches determination of product costs using different cost systems: primarily job order costing and process costing. Additional topics include: cost estimation, cost-volume-profit analysis, activity-based budgeting, standard costing, operational performance measures, flexible budgeting, and management of overhead activity costs.
(3+0)
Prerequisite: ACC112 with a grade of "C" or better

ACC222 Cost Accounting II 3 Cr. Hrs.
This course is a continuation of Cost Accounting I. Topics studied are activity-based costing and management, responsibility accounting, investment centers, transfer pricing, relevant costs and benefits in decision making, cost analysis for pricing decisions, capital expenditure decisions, absorption costing, variable costing, and allocation of support activity costs and joint costs.
(3+0)
Prerequisite: ACC221

ACC230 Auditing 3 Cr. Hrs.
This is a study of theories, procedures, and practices employed in audits. The course includes studies on auditor's reports, internal control procedures, tests, and generally accepted auditing standards used in the profession.
(3+0)
Prerequisite: ACC112

ACC240 Business Income Tax Accounting 3 Cr. Hrs.
This course teaches fundamentals of federal taxation in relation to business forms and rules. Studies include preparation of partnership, subchapter "S", and corporation returns with related income tax forms.
(3+0)

ACC260 Accounting on Computers 3 Cr. Hrs.
This course is a combination of ACC261 QuickBooks, ACC271 Intermediate QuickBooks, and ACC272 Advanced QuickBooks and allows the student to extensively study the QuickBooks software. Information will be processed in most of the areas of accounting in business. Many of the topics covered in financial and managerial accounting courses will be converted into a computerized accounting system. The course employs the case study method of teaching and learning and emphasis is placed upon hands-on practice in class and on assignments.
(3+0)
Prerequisite: ACC102 or ACC111

ACC291 Accounting Internship 3 Cr. Hrs.
This course is a job-related accounting experience in which the student works for a department within the college, a business, or an industrial organization. The student is chosen for this course on the basis of academic progress or job experience. Enrollment only with instructor permission.
(1+20)

AET100 Intro to Alternative Energies 3 Cr. Hrs.
In this course the student will learn the units of energy, how it is measured, and what our current usage is. Students will determine their current energy usage. They will then be introduced to several alternative energy sources including solar, wind, biomass, hydrogen, fuel cells, and others. As these topics are introduced, students will gain an understanding of these energy sources, applications, and the ability to determine their potential for sustainable energy. The course ends with the development of a plan to create a sustainable energy program for them. These topics will be learned through text, presentations, various exercises, and hands on labs.
(3+0)
Prerequisites: MTH080

AET110 Energy Audit 3 Cr. Hrs.
In this course the student will learn to conduct an effective and informative energy audit of various facilities for client or individual use. The student will learn sources, and extent, of energy usage in various facilities including residential, commercial, and industrial. Along with energy users, the operations, processes, and management of facilities will also be looked at. This material will be covered through various exercises, lecture and lab segments.
(3+0)
Co-requisites: AET100 and IND120 or EET121

AET120 Wind Power 4 Cr. Hrs.
In this course the student will learn how energy can be captured from wind and converted into electrical energy for commercial or residential use. The student will learn the various wind sources and energy potential of wind in a given area. The types, components, construction, and basic installation of various wind turbines will be studied. They will also learn different techniques and equipment used for monitoring the energy produced from the turbines. This material will be covered through both lecture and lab segments.
(3+2)
Prerequisites: AET100 and IND120 or EET121

AET130 Solar Thermal 4 Cr. Hrs.

In this course the student will learn how energy can be captured from the sun and converted into heat energy for air or water in a residential setting. The student will learn about the solar energy balance of the planet and the thermal comfort potential of solar radiation. Solar insolation and what determines its rate will be covered. The types, components, construction, and basic installation of various solar thermal configurations will be discussed. They will also learn different techniques and equipment used for monitoring the energy produced from solar collectors. This material will be covered through both lecture and lab segments. AET110 Energy Audit is recommended prior to or in addition to this class.

(3+2)

Prerequisites: AET100 and IND120 or EET121

AET140 Geothermal 4 Cr. Hrs.

In this course the student will learn the basic concepts of geothermal energy production. The course will introduce the concept and applications of acquiring energy from the Earth's core through steam powered generators for large scale electricity generation. This will be followed by the study of commercial and residential heat pumps. The student will learn how heat transfer with the ground is utilized to reduce energy consumption in both heating and cooling. The various types of heat pumps and types of wells will be discussed. This material will be covered through both lecture and lab segments. AET110 Energy Audit is recommended prior to or in addition to this class.

(3+2)

Prerequisite: AET100

AET200 Sustainable Building Design 3 Cr. Hrs.

In this course the student will learn how to evaluate a site for the most efficient use of energy. The student will evaluate the building site for available energy sources. The student will evaluate current and new building constructions for energy efficiency and utilization of current energy sources. The student will utilize applicable data and software to determine improvements to existing construction or to design new energy efficient sustainable building structures.

(3+0)

Prerequisite: AET110

AET220 Solar Photovoltaics 4 Cr. Hrs.

This course is a continuation, and more advanced study of Solar Energy. In this course the student will review how energy can be captured from the sun and converted into electrical energy for commercial or residential use. The student will learn the process of solar photovoltaic materials. The materials, types, components, construction, and basic installation of various photovoltaic cells will be discussed. They will also learn different techniques and equipment used for monitoring the energy produced from photovoltaic cells. Finally, new technologies in this area will be discussed. This material will be covered through both lecture and lab segments.

(3+2)

Prerequisites: AET100 and IND120 or EET121

AET230 Hydrogen and Fuel Cell Technology 4 Cr. Hrs.

In this course the student will learn what hydrogen is and its potential use as an energy carrier. The production, transportation, storage, and economics of hydrogen will be discussed. Basic thermodynamics and electrochemical cell construction will be studied. With this the student will then learn the basic fuel cell construction. Variations and materials used in fuel cell construction will be covered along with various applications for fuel cells. This material will be covered through both lecture and lab segments.

(3+2)

Prerequisites: AET100 and CHM201

AET240 Biofuels 4 Cr. Hrs.

In this course the student will learn different sources of biomass and the relative energy potential of these fuel sources. The student will learn the processes that are required to convert biomass to fuels such as biodiesel, ethanol, and others. The course also will look at energy potential from directly burning biomass as an energy source such as wood and grains. The determination of energy per mass will be covered to use for comparison of different materials. This material will be covered through both lecture and lab segments.

Prerequisites: AET100 and CHM201

AET290 Alternative Energy Capstone 4 Cr. Hrs.

In this course the student will have the opportunity to apply the knowledge gained through the AET program to relevant scenarios. Specific content may vary with each offering and will be related to the specific Alternative Energy program and electives chosen through the program.

(4+0)

Prerequisites: AET110, and at least one other course with AET prefix

ART103 Beginning Drawing 3 Cr. Hrs.

A basic drawing class facilitating students' abilities to see objects rationally, developing expressive drawing skills using various approaches and a wide variety of graphic media. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH001 - Basic Drawing).

(0+6)

ART210 Oil/Acrylic Painting 3 Cr. Hrs.

An introductory painting class emphasizing building stretcher frames, preparing painting surfaces, using oil/acrylic media, using color, and framing.

Transfer Assurance Guide (TAG) approved effective fall 2005 (OAH048 - Painting)

(0+6)

ART220 Beginning Sculpture 3 Cr. Hrs.

A basic level studio sculpture course facilitating students' ability to see and create three dimensional works of art. In this introductory class, clay, placticine, found objects, and soapstone are used in creating manipulative, subtractive, and additive method sculptures, following examination of historical works and the guiding principles of design behind creation of sculpture. Transfer Assurance Guide (TAG) approved effective fall 2011 (OAH047 - Sculpture)

(0+6)

ATS101 Portfolio Development 3 Cr. Hrs.

This course is designed for the student interested in developing a portfolio for submission and review for college credit. The student will work with his/her advisor in the development of the portfolio.

(3+0) On demand with approval of the appropriate Dean.

BAN110 Bank Management 3 Cr. Hrs.

A study of the commercial banking industry and the interrelationships between the various types of financial institutions. Special emphasis is given to branch banking, bank financial statements, methods of evaluating bank performance, lending policies, and the management of deposit liabilities and loan assets. The regulatory environment receives significant emphasis throughout.

(3+0)

BAN210 Credit Management 3 Cr. Hrs.

An examination of the concept of credit with particular emphasis given to the process of credit management for both consumers and businesses. Also explored are the processes of granting and reviewing credit, collection practices, as well as the examination of financial statements leading to the credit decision. Dun and Bradstreet's business services, as well as those of the major consumer credit organizations, receive in-depth treatment.

(3+0)

BAN220 Investment Management 3 Cr. Hrs.

A study of the types of investment vehicles available to the individual investor or business investment officer. The major emphasis of study is on various types of stocks and bonds, but convertibles, options, futures, commodities, and mutual funds are also studied. In addition, several special concepts receive emphasis, such as strategies associated with margin accounts and short-selling. Valuation of the firm and related financial analysis also receive appropriate treatment. Algebra proficiency is recommended.

(3+0)

BIO100 The World of Science 3 Cr. Hrs.

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)

BIO101 Principles of Biology 4 Cr. Hrs.

An introduction to principles and concepts of life, including topics on cell biology, genetics, diversity of life, and ecology. Laboratory work reinforces lecture.

(3+2)

Prerequisites: MTH079 or MTH080 and ENG080

BIO115 Ecology 4 Cr. Hrs.

An introduction to the field of ecology, including the organization, interrelationships and dynamic of populations, communities and ecosystems. A major emphasis on the relationship of humans to the environment. Lab includes field trips and the study of local aquatic and terrestrial communities.

(3+2)

Prerequisites: High school biology, BIO101, or consent of instructor.

BIO131 Nutrition 3 Cr. Hrs.

A study of nutrition and its role in promoting good health throughout the life span. Includes the study of proper nutrients and the various functions of the nutrients in the body's metabolism. Transfer Assurance Guide (TAG) approved effective summer 2007 (OHL016 - Basic Nutrition).

(3+0)

BIO150 The Human Body 4 Cr. Hrs.

An integrated course in the normal structure and function of the human body. It forms a basis for the later understanding of dysfunctional conditions. Each body system is presented individually, then the interrelationships between body systems are studied.

(4+0)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better

BIO180 Principles of Genetics 4 Cr. Hrs.

The fundamentals of classical genetics and the basic principles of human genetics are reviewed. Topics covered include plant and animal genetics, cancer genetics, genetic engineering, genetics in human medicine and criminology, and ethical issues raised by DNA technology such as eugenics.

(3+2)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better

BIO201 General Biology I 4 Cr. Hrs.

The course is designed for students pursuing various disciplines of science, especially biology and allied health-related majors. The first course in a two-semester sequence. Successful completion of this course is a pre-requisite to BIO 202 (General Biology II). Major topics covered include: the scientific method; basic chemistry, especially as it relates to biochemistry; cell structure and function, including the cell cycle and photosynthesis; genetics, including DNA structure and function; and evolution and natural selection. Transfer Assurance Guide (TAG) approved effective summer 2009 (OSC003 - General Biology I).

(3+3)

Prerequisites: BIO 101, or high school biology and chemistry with a grade of "C" or better.

BIO202 General Biology II 4 Cr. Hrs.

The course is designed for students pursuing various disciplines of science, especially biology and allied health-related majors. Major topics include biological classification; animal, plant, fungi and microbial diversity and evolution; plant and animal systems and their form and function; ecosystems and ecology; and animal behavior. Transfer Assurance Guide (TAG) approved effective summer 2010 (OSC004 - General Biology II).

(3+3)

Prerequisite: BIO201 with a grade of "C" or better or instructors permission

BIO231 Anatomy & Physiology I 4 Cr. Hrs.

Anatomical and physiological aspects of cells and tissues and the integumentary, skeletal, muscular, and nervous systems of the human body. Lab emphasizes human anatomy and physiology and includes cat dissection.

(3+3)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better, or equivalent; strongly recommend CHM101

BIO232 Anatomy & Physiology II 4 Cr. Hrs.

A continuation of BIO231, which focuses on anatomical and physiological aspects of the endocrine, digestive, respiratory, circulatory, cardiovascular, lymphatic, urinary, and reproductive systems of the human body. Lab emphasizes human anatomy and physiology and includes cat dissection.

(3+3)

Prerequisite: BIO231 with a grade of "C" or better, or instructor's permission

BIO234 Human Disease 3 Cr. Hrs.

A study of alterations in homeostasis, alterations in cellular function as well as pathophysiology of common disorders of the human nervous, muscular, skeletal, endocrine, cardiovascular, respiratory, excretory, digestive, and reproductive systems. Special emphasis will be placed on the relationship between the normal physiology and the physiological basis of the disease process. Case studies are used to interpret clinical information, diagnostic tests, signs and symptoms relating to mechanisms of disease. Intended for students in or aspiring to various health professions including nursing.

(3+0)

Prerequisite: BIO232 with a grade of "C" or better

BIO257 Microbiology 4 Cr. Hrs.

A study of anatomy, physiology, taxonomy, identification, growth, and control of micro-organisms, including bacteria, viruses, algae, fungi, and selected human parasites. Additional topics include bacterial metabolism, microbial genetics, immune responses, host defense mechanisms, and the spread of infectious diseases. Laboratory includes culture staining and identification of micro-organisms.

(3+3)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better

BUS101 Introduction to Business 3 Cr. Hrs.

This course is a survey of business, introducing the major components of a business including production or service, marketing, finance, management, accounting and human resources. The course also examines the economic, social, technological, competitive and regulatory environment of business both domestically and internationally.

(3+0)

BUS160 International/Global Business 3 Cr. Hrs.

This course focuses on the economics, social and cultural considerations of doing business overseas. The globalization of markets and the growth of overseas business ventures is explored. The need to develop varied techniques for managing people from other cultural backgrounds, the means of minimizing risks in financial transactions, and development of systems for coordinating and controlling operations will be stressed. Techniques to overcome international business barriers are covered. Upon completion, students should be able to demonstrate an understanding of the economic, social and cultural considerations of doing business worldwide.

(3+0)

BUS211 Business Communications 3 Cr. Hrs.

This course introduces business communication principles and establishes written communication standards in preparation for the real-world workplace. Students analyze a variety of writing situations, design the form and content of communications, and write in appropriate styles that range from informal to business formal. Effective oral communication is emphasized, individually and as teams, utilizing appropriate technology, strategy, and delivery. Transfer Assurance Guide (TAG) approved effective summer 2012 (OBU005-Business Communications).

(3+0)

Prerequisites: ENG111 and CIS112 or CIS114

BUS221 Business Law 3 Cr. Hrs.

This course is a study of the U.S. legal system and dispute resolution. Major units of study include: sources of law, torts and crimes, contract and sales law, personal property law, employment law, consumer credit/bankruptcy law, and a study of business organizations. In addition, units on ethics, cyber law, e-contracts, intellectual property law, and alternative dispute resolutions are presented. Cases and media presentations are used to highlight important concepts. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU004 - Legal and Social Environment of Business).

(3+0)

BUS223 Employment Law, Safety & Security 3 Cr. Hrs.

In this course we will address the need to understand and comply with employment law, the benefits of employee assistance programs, and compliance with occupational safety, health, and security programs within the workplace. Topics covered in the course include legal compliance, workplace violence, safety, security, emergency response plans, employee assistance programs, employee wellness programs, and chemical use and dependency.

(3+0)

BUS250 Labor Relations 3 Cr. Hrs.

This is a study of unions and their relationship with management. Major topics include negotiating and administering labor contracts, wages, benefits, and working conditions, as well as their impact on contract negotiations.

(3+0)

BUS260 International Trade 3 Cr. Hrs.

This course is a study in how to do business internationally. Topics include international terms, credits, export/import paperwork, and currency exchange. International marketing, distribution, and financing are emphasized, as well as cultural effects and local customs.

(3+0)

CAD111 CAD I 4 Cr. Hrs.

A course in the fundamentals of Computer-Aided Design, utilizing state-of-the-art microcomputer hardware and AutoCAD software. Covers fundamental Window system commands and AutoCAD application commands. Gives the student the opportunity to become proficient, in a hands-on environment, in developing fundamental 2D drawings and utilizing an industrial quality CAD system.

(3+3)

CAD112 CAD II**4 Cr. Hrs.**

A continuation of CADI. The student progresses to more advanced commands and design features of the AutoCAD software. The student utilizes plotting equipment for finished projects. The goal is to become proficient in the operation of a CAD system to develop complex assemblies to learn the interrelationship of detailed and purchased parts and how it all comes together in a final set of working drawings. Transfer Assurance Guide (TAG) approved effective summer 2008 (OET012 - CAD).

(3+3)

Prerequisite: CAD111 with a "C" or better

Recommended: IND103 and MET110

CAD213 CAD III**4 Cr. Hrs.**

Students will develop and plot advanced 3D models, 2D detail drawings and 3D assembly drawings as used in the modern industry today. Students will also learn how to link their 3D models to develop design tables and bill of materials. This course is an advanced course in mastering the commands utilizing SolidWorks 3D feature-based parametric solid modeling design tool software.

(3+3)

Recommend: MET110

CET100 Construction Methods & Materials 3 Cr. Hrs.

In this course the student will become familiar with construction drawings and techniques. Common building materials and methods will be explored with respect to sustainability and common construction practice.

(2+2)

CET115 Project Management**3 Cr. Hrs.**

In this course the student will learn a plan for project management that expands on initiating, planning, executing, monitoring and controlling, and closing projects. The course focuses on professional presentation and communication to navigate projects from conception to completion.

(3+0)

Prerequisite: CIS090 or equivalent

CET120 Construction Material Testing 3 Cr. Hrs.

This course provides an introduction to fundamental materials used in the construction industry including aggregates, asphalt and asphalt concrete, Portland cement and Portland cement concrete, iron, steel, masonry, and wood. Students will study testing standards as published from ASTM and ACI. Laboratory exercises will perform materials testing according to job site standards.

(2+2)

Co-requisite: MTH109

CET200 Surveying**3 Cr. Hrs.**

Students learn the proper use of basic surveying equipment with an emphasis on coordinating theory and drawings into physical experience. This course will use conventional measuring instruments and compare the results to trigonometric predictions.

(2+2)

Prerequisite: MTH112

CET240 Soils**3 Cr. Hrs.**

In this course the student will learn the relationship between soil conditions and building design. Students will study industry standards and experiment to confirm the standard requirements. Laboratory tests will include sieve and hydrometer tests, compaction analysis, and permeability analysis. Lecture will introduce the theory to support laboratory findings and implementation of design specifications.

(2+2)

Prerequisites: MET234 & MET235

CHM100 The World of Science**3 Cr. Hrs.**

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)

CHM101 Principles of Chemistry**4 Cr. Hrs.**

This course provides students with an introduction to the fundamental chemistry underlying a variety of technologies and careers. Topics covered include various aspects of conducting measurements, chemical nomenclature and equations, molecular bonding, atomic structure, uses of radioactivity and analytical methodologies. In addition, the behavior of gases, solutions, acid and bases will be explored. The student will also learn how to classify chemical reactions, as well as determine quantities of reagents needed for and products resulting from such reactions. Laboratory reinforces and supplements lectures.

(3+3)

CHM110 Science & Technology of Sustainability**4 Cr. Hrs.**

CHM110 takes the approach of examining past practices; evaluating current technical developments, and exploring promising new technologies in a critical fashion. It is offered that the student will develop and hone the logical capacity to determine how chemical science and engineering principles might have impact on various sustainability issues and evaluate likely applications and results. Topical areas include: energy (e.g., alternative fuels); clean water and the principles of green chemistry. Laboratory work, along with occasional visiting speakers and field trips, will reinforce the basic principles and emphasize development of analytical thinking, laboratory techniques and sound understanding of environmental principles. Students will conduct laboratory exercises in which chemistry intersects a number of matters. Cited examples are clarification of water, detection of lead and characterization of solids in smoke. These areas of inquiry arise from sustainability issues related to clean water, children chewing on lead-based paint chips and by-products of combustion.

(3+3)

CHM138 Principles of Forensics**4 Cr. Hrs.**

Forensics is the application of the natural sciences to all phases of criminal investigation. The study of basic chemistry and biology are now an important aspect of modern forensic science. Current topics in forensics such as DNA investigation, hair analysis, blood, grass and soil, body fluids, fingerprint analysis, drug analysis, arson, accelerants, explosives, toolmarks and firearms.

(3+2)

CHM201 General Chemistry I**5 Cr. Hrs.**

This is the first part of a two-semester program for technically-oriented students needing a solid foundation in general chemistry. Topics covered include an in-depth treatment of measurement, atomic and molecular structures, ionic behavior in solutions, and inorganic chemical nomenclature. Also, the types of chemical reactions (including acid-base and oxidation reduction) are reviewed, along with stoichiometric principles, the behavior of gases and thermochemistry. Additional topics covered include electronic structure, periodic law, chemical bonding and molecular geometry. Lab work reinforces basic principles, supplements lectures and emphasizes analytical techniques. Transfer Assurance Guide (TAG) approved effective summer fall 2009 (OSC008 - General Chemistry I).

(3+3+1 Recitation)

Prerequisites: MTH090 or equivalent and CHM101 or High School Chemistry in past 5 yrs.

CHM202 General Chemistry II**5 Cr. Hrs.**

A continuation of CHM201, this is the second part of a two-semester general chemistry program. Topics covered include a detailed treatment of states of matter, intermolecular forces, and the properties of solutions. Chemical kinetics, chemical equilibrium (including those of acid-base systems, complex ions and coordination compounds) and chemical thermodynamics are covered as well. Students are also introduced to electrochemistry, nuclear chemistry, and the chemistry of selected elements and materials (including polymers and organic substances). Lab work reinforces basic principles, supplements lectures, and emphasizes analytical techniques Transfer Assurance Guide (TAG) approved effective spring 2011 (OSC009 General Chemistry II).

(3+3+1 Recitation Hour)

Prerequisites: CHM201 and MTH109 with a grade of "C" or better or instructor's permission

CHM256 Principles of Biochemistry**3 Cr. Hrs.**

An introductory course that deals with inorganic and organic biomolecules. Emphasizes the synthetic and degradative reactions of carbohydrates, lipids, nucleic acids, and proteins. Examines the roles of water, buffers, enzymes, vitamins, minerals, and organic salts in cellular metabolism. Laboratory reinforces and supplements lectures.

(2+2)

Prerequisite: CHM101 or equivalent

CIS090 Introduction to Computers**1 Cr. Hr.**

This course is a beginner's introduction to computers (PC's). The text covers most of the fundamental concepts associated with computers including terminology, hardware and software issues, and introduces the student to some elementary skills via some of the well-known software applications. Students will practice basic computer skills using word processing and spreadsheets, as well as explore the Internet. No prior computer knowledge is necessary for this course.

(0+2)

Course Placement Test is available

CIS104 Desktop Management**1 Cr. Hr.**

This is a course in which the students learn to understand and operate the personal computer using the Microsoft Windows Environment. They will also learn how to communicate with others using Microsoft Outlook. The basic features for the latest operating system and Outlook will be covered.

(0+2)

Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests

CIS108 Internet Scripting**4 Cr. Hrs.**

This course is designed to teach programming to a student using a current Internet scripting language. The course will teach the student traditional programming concepts such as variable usage, program flow statements and designing loops. The class will focus on using the scripting language to solve programming problems using Internet applications.

(3+3)

CIS109 Database Management**4 Cr. Hrs.**

This course is designed to familiarize students with the concepts underlying client/server relational databases. This class will teach students the basics of using the SQL query language. It will also teach more advanced SQL concepts such as query optimization and using SQL in other high level programming languages. This class will teach the student how to manage and maintain a server based database system. This will include tasks such as creating, backing up, repairing, optimizing, securing, localizing and internationalizing databases.

(3+3)

Co-requisite: CIS191

CIS111 Visual Basic Programming**4 Cr. Hrs.**

This is a computer programming course involving applications utilizing a Graphics User Interface (GUI) and serving the needs of users in an event driven environment. The course moves from fundamental input/output programs to applications accessing a database for the purpose of adding, deleting, and/or updating records. The course also covers user report processing needs and applications involving the Internet. Object oriented techniques are introduced and important programming concepts are emphasized. Students will be required to complete several laboratory assignments during the semester.

(3+3)

CIS112 Microsoft Word**3 Cr. Hrs.**

This course teaches basic and advanced commands in Microsoft Word software to create, format, edit, and save documents including letters, tables, reports, and merged documents. Other topics covered include desktop publishing features, web pages, styles and templates, master documents, online forms, workgroups, and information integration with other office programs.

(2+2)

Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests

CIS113 Microsoft Excel 3 Cr. Hrs.
 This course emphasizes beginning to advanced features of Microsoft Excel. Some of the topics presented include handling multiple worksheets, as well as creating and using formulas, macros, range names, data lists, data protection, data validation, pivot tables, and linking and embedding.
 (2+2)
 Prerequisites: CIS090 and OAS090 or satisfactory score on Course Placement Tests

CIS114 Microsoft Applications 3 Cr. Hrs.
 This course is a basic course in which the student learns to operate the personal computer using four components of Microsoft Office software: Microsoft Word, Excel, Access, and PowerPoint. All the basic program functions will be covered for each package, as well as many advanced functions. A basic knowledge of the keyboard is helpful. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU003 - Computer Applications).
 (2+2)
 Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests

CIS117 Microsoft Publisher 1 Cr. Hr.
 This course will emphasize the basics of creating professional layouts, including flyers, newsletters, announcements, menus, etc. The student will learn the basics of desktop publishing using Microsoft Publisher.
 (1+1)
 Prerequisite: CIS112 or CIS114

CIS118 Access 1 Cr. Hr.
 This is a course in which students will use MS Access software to learn the basic concepts of database management. Creating databases, entering data, preparing a query, preparing graphs, and creating forms and reports are all practiced in a lab setting.
 (0+2)
 Prerequisite: CIS090

CIS119 PowerPoint 1 Cr. Hr.
 This is a course designed for the beginner in using PowerPoint, a presentation graphics program. Slide creation; use of graphics, charts, tables, and color to enhance slides; and methods of automation, use of sound, and collaboration techniques will be areas of study. Hands on experience and the ability to demonstrate usage of PowerPoint will be provided.
 (0+2)
 Prerequisite: CIS090

CIS121 Intermediate Word 1 Cr. Hr.
 A continuation of CIS114 emphasizing advanced features of Microsoft Word including creating charts, formatting text into columns, formatting with styles, merging documents, sorting, creating tables, and linking and embedding.
 (0+2)
 Prerequisite: CIS114 with a grade of "C" or better

CIS122 Intermediate Excel 1 Cr. Hr.
 A continuation of CIS114 emphasizing advanced features of Microsoft Excel including handling multiple worksheets, as well as creating and using formulas, macros, range names, data lists, data protection, data validation, pivot tables, and linking and embedding.
 (0+2)
 Prerequisite: CIS114 with a grade of "C" or better

CIS129 Web Page Development 3 Cr. Hrs.
 The student will learn the concepts of web page design and layout, along with the writing of HTML, XHTML, and CSS code. In preparing web pages for the internet, current ADA standards, web page validation, and mobile devices will be studied.
 (2+2)
 Prerequisite: CIS090 or equivalent

CIS150 Programming C++ 4 Cr. Hrs.
 This is an introduction to structured programming using the ANSI C/C++ programming environment. Use of the environment tools, logic structures, and primary library functions of the language is emphasized. Additional subjects covered include variable types and declarations, math and logical operators, parameter passing, arrays and string handling and pointers.
 (3+3)

CIS155 Linux Networking I 4 Cr. Hrs.
 This course covers data communications and operating system technology as implemented in a Linux environment. Subjects covered include the history, theory, administration, and installation of Linux and its associated software. This class will focus on the administration of Linux workstations. This class makes extensive use of lab projects to reinforce essential concepts.
 (3+3)
 Co-requisite: CIS190 or CIS191

CIS161 C# 4 Cr. Hrs.
 This course is an introductory programming course taught using Microsoft's C# language. The course makes extensive use of the .NET framework which is common in most of the Microsoft programming languages. Students will create both console and GUI programs in this course. Variables, decisions, loops, arrays, classes, inheritance, event-handling, exceptions, file input/output and database connectivity are some of the topics covered. This course includes hands on laboratory assignments.
 (3+3)

CIS165 Java Programming 4 Cr. Hrs.
 This is an introductory programming course which utilizes the Java Programming Language and emphasizes object-oriented programming concepts. As a general purpose programming language Java can be utilized in traditional programming environments. It can support applications developed for a variety of computer platforms and other devices such as smart phones or tablets. This course includes hands on laboratory assignments requiring students to complete and submit programming projects.
 (3+3)

CIS191 Computer Operations 3 Cr. Hrs.
 This course is an intensive study of operating systems and PC hardware. Topics include study of the theory and tasks commonly assigned to system software, basic disk and program commands, configuration and installation commands and techniques, as well as management of resources and security. Hardware issues are also addressed covering the theory, installation and maintenance of common personal computer hardware such as CPU's, memory, hard drives and peripheral devices. This course helps prepare the student for the CompTIA A+ Certification Exams. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT016-Linux).
 (2+3)

CIS192 Microsoft Workstation Technology 3 Cr. Hrs.
 This course teaches the basic and advanced concepts needed to manage a Microsoft Desktop Operating system in both a networked and standalone environment. This course makes extensive use of lab projects to reinforce essential concepts.
 (2+3)
 Co-requisite: CIS191

CIS193 Microsoft Server Technology 3 Cr. Hrs.
 This course teaches the basic and advanced concepts needed to manage a Microsoft Server Operating system in both a networked and standalone environment. This course makes extensive use of lab projects to reinforce essential concepts. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT013-MS Windows Server 2003 Environment).
 (2+3)
 Co-requisite: CIS191

CIS194 IT Security Fundamentals 3 Cr. Hrs.
 This course is an introduction to security as it applies to computers, local area networks and the Internet. This class covers both methods of attack and the prevention of those attacks. The course provides an introduction to cryptography. The course covers the creation and implementation of a comprehensive security policy. This course helps prepare the student for the CompTIA Security+ Certification Exams. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT015-Comp TIA Security).
 (2+3)
 Co-requisite: CIS191

CIS195 Networking Essentials 3 Cr Hrs.
 This is a survey course designed to introduce students to basic network concepts and terminology. Both theoretical and practical material is introduced in this class. This course covers learning objectives tested in the CompTIA Network+ exam. This course includes hands on laboratory assignments. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT002-Networking/Comp TIA Network).
 (2+3)

CIS201 Workplace Technologies 3 Cr. Hrs.
 This is a hands-on course addressing technology's role in the work place. Projects will focus on processes and tools that are available to students to enhance technological office procedures. It will introduce various technologies and DigiTools necessary in the business environment. DigiTools will include, but not limited to, Wacom Graphire Tablet, Tablet PC, scanners, speech recognition, and podcasting. Various productivity software packages will also be included. Digital reputation management will be discussed.
 (3+0)
 Prerequisite: CIS104 or CIS112 or CIS113 or CIS114

CIS202 Mobile Application Programming 3 Cr. Hrs
 This course will provide students with an introduction to mobile application development. By the end of the course the student will be able to install and work with Android development tools. The student will be able to create an effective and attractive visual interface. The student will accomplish these outcomes by creating and debugging several mobile applications. Students need a solid foundation in Java programming skills to be successful in this class.
 (2+3)
 Pre-Requisite: CIS193

CIS255 Linux Networking II 4 Cr. Hrs.
 This course covers data communications and network services as implemented in a Linux environment. Subjects covered include firewalls, DNS, DHCP, file sharing, printer sharing, as well as email and web services. This class will focus on the administration of Linux workstations. This class makes extensive use of lab projects to reinforce essential concepts.
 (3+3)
 Prerequisite: CIS155

CIS265 Java Programming II 3 Cr. Hrs.
 This is an advanced programming course which utilizes the Java Programming Language and emphasizes object-oriented programming concepts. The course will introduce students to advanced topics such as interfaces, generic types, database connectivity, working with multiple threads and localizing programs so that they can be useful in a global market. This course includes hands on laboratory assignments requiring students to complete and submit programming projects.
 (2+3)
 Prerequisite: CIS165

CIS284 Microsoft Infrastructure Technology 3 Cr. Hrs.
 This course teaches the basic and advanced concepts needed to manage a Microsoft Infrastructure Services such as DNS, DHCP and Remote Access Services. This course makes extensive use of lab projects to reinforce essential concepts.
 (2+3)
 Co-requisite: CIS193

CIS285 Microsoft Directory Services Technology 3 Cr. Hrs.
 This course teaches the basic and advanced concepts needed to manage a Microsoft Directory Services environment. This course makes extensive use of lab projects to reinforce essential concepts.
 (2+3)
 Co-requisite: CIS193

CIS286 Windows Server Administration 3 Cr. Hrs.
 This course is the second in a series of three courses designed to teach the administration skills necessary to install and maintain a Windows Server infrastructure. It focuses on name resolution, user and group management within an Active Directory environment, management using Group Policy, remote access technology as well as server installation and maintenance using images and patch management. This class currently covers Windows Server 2012R2 and covers the same learning objectives as used in Microsoft's Administering Windows Server 2012 course and their 70-411 certification exam.
 (2+3)
 Pre-Requisite: CIS193

CIS287 Advanced Windows Server 3 Cr. Hrs.
 This course is the third in a series of three courses designed to teach the administration skills necessary to install and maintain a Windows Server infrastructure. It focuses on advanced networking services, Active Directory Domain Services, Active Directory Rights Management, Active Directory Federation Services, Network Load Balancing, Failover Clustering, disaster recovery, and information provisioning using Dynamic Access Control. This class currently covers Windows Server 2012R2 and covers the same learning objectives as used in Microsoft's Configuring Advanced Windows Server 2012 Services course and their 70-412 certification exam.
 (2+3)
 Pre-Requisite: CIS193

CIS290 Information Technology Intern. 1-4 Cr. Hrs.
This is a job-related computer experience in which the student works for a department within the college, a business, or an industrial organization. The student is chosen for this course on the basis of academic progress or job experience. Enrollment only with instructor permission.
(1+30)

CJT130 Principles of Criminal Justice 3 Cr. Hrs.
Students will become familiar with the criminal justice system by exploring theories of criminology, examining the development of criminal and procedural law, understanding the roles of law enforcement, court and correctional personnel, and by investigating critical issues surrounding criminal justice including multi-cultural and gender issues.
(3+0)

CJT132 Criminal Justice Administration 3 Cr. Hrs.
Students will be examining the role of management versus leaders in the American criminal justice system focusing on the organization of bureaucratic systems, their basic principles, and the interrelationships between the major players. Students will also become familiar with organizational theory, leadership skills, disciplinary action and union issues.
(3+0)

CJT134 Criminal Law 3 Cr. Hrs.
This course is designed as a study of the development and implementation of criminal law. Emphasis will be placed on exploring elements of criminal statutes, understanding Ohio's criminal statutes, investigating affirmative defenses and sentencing practices. Students will analyze the law based on their own personal opinions and beliefs by critically examining and discussing certain laws, procedures, court cases, and case outcomes.
(3+0)

CJT136 Juvenile Delinquency Principle 3 Cr. Hrs.
This course examines the problems of today's "youth in trouble," with an emphasis placed on prevention, causes and methods of approach and disposition of cases.
(3+0)
Prerequisite: CJT130

CJT140 Constitutional Law 3 Cr. Hrs.
This course is a study of contemporary constitutional issues. Discussed are critical issues in criminal justice including detention, arrest, search and seizure, interrogations and confessions, self-incrimination, due process and right to counsel. Also included are constitutional aspects of criminal and civil liabilities of justice personnel, and constitutional and civil rights in the workplace.
(3+0)
Prerequisite: CJT130

CJT220 Law Enforcement in American Society 3 Cr. Hrs.
Overview of the police role in modern American society; emphasis on problems and issues confronting police and solutions within an organizational framework.
(3+0) F - odd years
Prerequisite: CJT130

CJT230 Corrections 3 Cr. Hrs.
A survey of the general field of corrections, including the institutions and resources which are used. A historical overview of corrections is explored.
(3+0)
Prerequisite: CJT130

CJT240 Criminal Evidence & Procedure 3 Cr. Hrs.
An overview of criminal procedure and law including constitutional provisions, rules of evidence, trial and pre-trial procedures, arrest, search and seizure, admissibility and confessions.
(3+0)
Prerequisites: CJT130 and CJT134

CJT242 Probation & Parole 3 Cr. Hrs.
This course will explore the philosophies and guidelines utilized in both the juvenile and adult probation setting. The dilemma of surveillance involving custody/control factors versus supervision and treatment will be examined. A strong emphasis will be placed on developing citizen agency relationships in utilizing citizen volunteer programs to help rehabilitate offenders.
(3+0)
Prerequisites: CJT130 and CJT230

CJT244 Criminal Investigation 4 Cr. Hrs.
A study of investigative procedures; initial contact by the investigator, interviewing, case development, follow-up investigation, handling of leads, hot or cold information, in custody interviews and procedures. Crime scene labs will be incorporated into this class.
(3+2)
Prerequisites: CJT130 and CJT134

CJT246 Technical Skills for Officers 3 Cr. Hrs.
This course will focus on developing technical skills necessary for the performance of jobs in the Criminal Justice field. Topics covered will include Report Writing, Sketching, Interrogation, and Testifying in Court.
(3+0)
Prerequisite: Admission to Law Enforcement Academy

CJT252 Seminar in Criminal Justice 3 Cr. Hrs.
This course exams current critical issues in criminal justice. Topics to be considered for discussion and analysis include: terrorism, capital punishment, restorative justice, ethics, race and class issues, drugs, the decision making process, issues in policing and the future of crime and justice.
(3+0)
Prerequisites: CJT130 and CJT134

CJT281 Vehicle Patrol/Traffic Enforcement 4 Cr. Hrs.
Police academy cadets will become familiar with O.P.O.T.C. requirements for proper patrol techniques including identifying traffic offenses and correct tactical procedures for stopping and approaching vehicles.
(3+3)
Prerequisite: Admission to Law Enforcement Academy

CJT282 Firearms/Driving 4 Cr. Hrs.
Police academy cadets will become proficient in O.P.O.T.C. firearms techniques including identification of firearms and nomenclatures, secure handling of firearms, and will become certified in the firing of firearms. Students will also become adept in defensive and pursuit driving techniques and vehicle maneuverability.

(2+6)

Prerequisite: Admission to Law Enforcement Academy

CJT283 Defensive Tactics/Physical Fit 3 Cr. Hrs.
Police academy cadets will become experienced with several levels of defensive tactics including hand to hand and baton techniques as well as weapon retention. Students will also become physically ready to pass the O.P.O.T.C. physical fitness standards.

(1+6)

Prerequisite: Admission to Law Enforcement Academy

CJT284 Human Conditions 4 Cr. Hrs.
Police academy cadets will become certified in first aid and CPR techniques. Students will also identify cultural differences and how to effectively interact and communicate in diverse settings. Cadets will also become knowledgeable in preventing and controlling civil disorders.

(3+3)

Prerequisite: Admission to Law Enforcement Academy

CJT289 Special Topics CJ Professional 1 Cr. Hrs.
This course will examine special topics within criminal justice including sociological, criminological and philosophical discussions of criminal justice. Topics within the course will challenge students to examine the underlying theory and assumptions behind many of their current beliefs.

(1+0)

Prerequisites: CJT132, CJT136, CJT230, and CJT240

Co-requisites: CJT242, CJT244, and HST214

CJT290 Criminal Justice Practicum 4 Cr. Hrs.
A basic exposure to a particular criminal justice agency through observation and limited participation. This course will provide an understanding of how this agency fits into the entire criminal justice system and local community.

(3+8)

Prerequisites: CJT132, CJT136, CJT230, and CJT240

Co-requisites: CJT242 and CJT244

(2+2)

DBP110 ICDL Computer Technologies 1 Cr. Hr.
This course provides a thorough understanding of information and communication technologies (ICT). Students who successfully complete this course will have a solid foundation in core desktop computer applications including word processing, spreadsheets, database and presentation software. Students will also be exposed to foundational topics including Windows operating system, computer operations and internet usage. This is an online course that includes demonstrations and hands on exercises. Successful completion of the course will prepare students for the ICDL certification tests. ICDL (International Computer Driving License) is the US arm of the ECDL Foundation and is an internationally recognized computer certification.

(0+2)

DBP130 IT Customer Service and Communication 2 Cr. Hrs.

IT professionals need the skills to communicate with other IT personnel as well as end users. Students will be taught to assist clients through effective electronic and verbal communication skills with a focus on the differences in communicating with each group. Students will also focus on professionalism in the workplace. There is an emphasis on email and phone etiquette, business manners, attention to detail in written and oral communication, presentation to specific audiences, value of listening to others, and conflict management. Students will also focus on the best ways to promote themselves in the employment market.

(2+2)

DBP150 Database Basics 3 Cr. Hrs.

This course is designed to move the student beyond the confines of PC based databases. The students will learn the basics of relational database systems including topics such as indexes and normalization. The focus of the course will then move to enterprise database management systems and include discussion of distributed computing and data warehousing. Finally, they will learn the fundamentals of querying using Structured Query Language (SQL).

(2+2)

DBP205 Discrete Structures 3 Cr. Hrs.

In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete structures such as Boolean logic, proof techniques, graphs, recurrence relations and functions will be covered. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Topics in this course will be reinforced with the assistance of Visual Logics software.

(2+2)

Prerequisite: DBP110

DBP210 Computer Programming I 3 Cr. Hrs.

In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete math such as sets, logic and proofs will be learned. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Finally, the students will move to the Visual Basic language to transfer their skills into a language to develop a variety of applications.

(2+2)

Prerequisite: ITR291

DBP220 Database Reporting 3 Cr. Hrs.

In this course the student will learn how to effectively pull information from a variety of database systems. The student will learn how to directly pull data from a database using a reporting tool and how to use SQL as an intermediate step in reporting to more effectively work with large stores of data. A heavy focus will be placed on the popular *Crystal Reports* (Pro, Server & Dashboard) software application.

(2+2)

Prerequisite: DBP150

DBP225 Computer Programming II 3 Cr. Hrs.

In this course the students will add to their knowledge of programming by focusing further on object oriented programming using the C# language. They will also learn how the .NET framework provides a structure for programs. Finally, they will be introduced to the widely used, class-based, object-oriented language Java. With these languages, students will learn about standalone applications as well as automating processes. Not only will students learn to write original code, they will be exposed to methods of debugging existing code.

(2+2)

Prerequisite: DBP210

ECD150 Infant & Toddler Development and Care 2 Cr. Hrs.

An understanding of the important role of adults in controlling, intervening and interpreting the environment so that infants and toddlers receive protective care, stimulation, and relaxation necessary to enhance physical, social, emotional, cognitive, and language development.

(2+0)

ECD 190 Fundamentals of Early Childhood 3 Cr. Hrs.

This course provides an overview of early learning environments and developmental characteristics for children age 0-8. An emphasis will be placed on the history of early childhood education, theories and program models which influence program and curriculum development today. A weekly required field experience places the student in an early childhood program observing the development of young children. The student will learn appropriate observation methods and use a variety of tools to document children's development.

(2 + 3)

ECD201 Pre-Kindergarten Curriculum & Methods 3 Cr. Hrs.

This course focuses on the role of the teacher in connecting content, teaching and learning for preschool children when building curriculum based on best practices. Ohio's PreK Early Learning Standards will be used as students compare and contrast a variety of curriculum models. Students will apply understandings of how children learn to create healthy, respectful, supportive, and challenging learning environments for all children. Participation in a preschool classroom, seven hours each week, will give students an opportunity to develop, implement and reflect on lesson plans that they selected and prepared to meet the needs of individual children and the group.

(2+7)

Prerequisites: EDU100, EDU150, and ECD190

Co-requisite: EDU120

ECD270 Special Topics in Early Childhood 3 Cr. Hrs.

An independent study course permitting the student to explore issues affecting children and families. May be required by ECD faculty to assist students in meeting requirements for the Ohio Department of Education Pre-Kindergarten Associate License.

(3+0)

Prerequisite: Determined by ECD Coordinator's recommendation

ECD280 Child Care Field Experience 3 Cr. Hrs.

A 60-hour field experience appropriate to student's focused interest area. May be required by ECD faculty to assist students in meeting requirements for the Ohio Department of Education Pre-Kindergarten Associate License.

(1+4)

Prerequisite: Determined by ECD Coordinator's recommendation

ECD290 Pre-Kindergarten Practicum 3 Cr. Hrs.

This is the capstone course of the Pre-Kindergarten associate degree program. Planning and carrying out specific teaching experiences requires M-F participation in a center based early childhood learning program. Principles are assimilated through practical experiences with an established group of 3-5 year old children and a mentor teacher. To be recommended for the ODE Pre-Kindergarten Associate License students must achieve a grade of B or higher, pass OAE Subtest 36 and 37 and demonstrate that the degree program can be completed within 6 months of completing ECD290.

(1+14)

Prerequisites: ECD201, EDU140, EDU210, EDU230, EDU240, EDU270, MTH170, Completed training in First Aid, CPR, Common Childhood Illness Recognition, Child Abuse Recognition per ODJFS requirements; Practicum application and requirements filed with ECD coordinator by October 15; Student must demonstrate that the PreK Associate Degree can be completed within 6 months of completing practicum.

Co-requisite: EDU250

ECO211 Macroeconomics 3 Cr. Hrs.

Macroeconomics is a study of the U.S. economy emphasizing supply and demand, total production, total employment, and the general price level. Issues of inflation, recession, international trade, and federal budget deficits are also investigated. Economic solutions through fiscal policy and monetary policy are included. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS005 - Macroeconomics).

(3+0)

ECO212 Microeconomics 3 Cr. Hrs.

Microeconomics is a study of the U.S. economy emphasizing supply and demand, the individual firm, competition, and the industry. Issues of revenue, expense, profit, loss, and break-even are also investigated. Decisions such as price determination and production output are included. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS004 - Microeconomics).

(3+0)

ECO257 Global Economics 3 Cr. Hrs.

This course covers the economic analysis of international trade and foreign investment, including theories of international trade, balance of payments, exchange rates and international monetary arrangements, adjustments of payments disequilibrium, and government policies on trade and aid. Upon completion, students should be able to demonstrate an understanding of the international economic environment.

(3+0)

EDP 160 Introduction to Paraprofessional Education 4 Cr. Hrs.

This foundational course introduces the role and responsibilities of the paraprofessional. A field experience occurs in an educational setting serving special needs populations from preschool to grade 12. Students interact as a member of a multidisciplinary team, observe and support instructional activities under the direction of a licensed teacher, and operate within the recommended standards for health, safety, and nutrition.

(3 + 2)

EDP290 Paraprofessional Internship 2 Cr. Hrs.

This experience requires the student to be available for a continuous experience in a school system for not less than 14 hours per week. Assignments will be coordinated through local schools so that the student has the opportunity to apply knowledge and develop skills appropriate to the role of the educational paraprofessional.

(0+14)

Prerequisites: EDU140, EDU270; MTH170; Completed training in First Aid, CPR, Common Childhood Illness Recognition, Child Abuse Recognition; Internship application filed with education department faculty by October 15.

Co-requisite: EDU 250

EDU100 Introduction to Teaching 3 Cr. Hrs.

This introductory course explores the purposes, organizations, and outcomes of schooling from the perspectives of the field of social foundations of education. Candidates undertake critical inquiry into teaching as a profession. Licensure requirements, teachers' legal responsibilities, and the accountability of public schools are also explored. Students must be available to make several school visits and access the internet to research relevant topics. Transfer Assurance Guide (TAG) approved effective spring 2017 (OED007 - Introduction to Education).

(3+0)

EDU120 Guidance & Classroom Management 3 Cr. Hrs.

Classroom management is a major concern of all educators from the preschool classroom through secondary education. This course explores various guidance theories providing a variety of techniques to be used in the development of a personal philosophy that can be put into practice in the classroom.

(3+0)

Prerequisite: PSY110

EDU 140 Strategies for Teaching Reading 3 Cr. Hrs.

Essential teaching methods and techniques of literacy instruction prepare the student for working with young readers as well as those with reading difficulties. Emphasis is placed on the understanding of phonics and its role in reading and writing instruction. Day time availability is required for a short term tutoring experience.

(3 + 0)

Prerequisites: EDU 100

EDU150 Child Development I 3 Cr. Hrs.

This course focuses on applying knowledge of the characteristics and needs of young children, prenatal to age eight, for the creation of healthy, respectful, supportive, challenging, and effective learning environments. Multiple and interrelated influences on the development and learning of young children will be examined.

(3+0)

EDU210 Creative Arts Curriculum 3 Cr. Hrs.

This course is designed to teach theory and practice supporting play to develop children's creative expression in music, drama, art, and movement. Principles and elements of the arts are introduced as the student advances own understanding of the arts and their contribution to child development and learning.

(3+0)

Prerequisite: EDU100

EDU220 Special Education 3 Cr. Hrs.

This is a survey course to prepare all educators to teach diverse learners, including those with exceptionalities. It covers developmental characteristics, assessment methods, intervention strategies, and ethical principles for students in education and community settings. Transfer Assurance Guide (TAG) approved effective fall 2007 (OED004 - Individuals with Exceptionalities).

(3+0)

Prerequisites: EDU100

EDU230 Family, School & Community 3 Cr. Hrs.

This class prepares the teacher to work with students and their families. There is in-depth information focusing on the diversity of families and strategies for building partnerships with families. Emphasis will be placed on communication that results in collaboration and advocacy skills for strengthening families within communities. Transfer Assurance Guide (TAG) approved effective spring 2013 (OED006 - Families, Communities, Schools).

(3+0)

Prerequisite: EDU100

EDU240 Educational Psychology 3 Cr. Hrs.

This course deals with the major theories of human development, motivation and learning. Planning of instruction, teaching strategies, assessment and classroom management are examined. Authentic pedagogical practices are used to gain an understanding of the teaching and learning process. Transfer Assurance Guide (TAG) approved effective fall 2005 (OED003 - Educational Psychology).

(3+0)

Pre-requisites: PSY 110

EDU250 Education Seminar 2 Cr. Hrs.

This end of program course meets once a week placing ECD290 and EDP290 students together for discussions of practical daily classroom issues as well as professional development needs. Advocacy opportunities related to children and families will be emphasized. Students will organize materials and documentation useful for licensure, employment and transfer to baccalaureate programs.

(2 + 0)

Pre-requisites: Permission of Education Department

Co-requisites: EDP 290 or ECD 290, EDU 260

EDU260 Instructional Technology 3 Cr. Hrs.

This is a hands-on course addressing technology's role in education at all grade levels. The focus is on processes and tools that are available to teachers to enhance classroom organization, instruction, and assessment. Students will research pedagogical issues regarding appropriate use of computers with young children and in the classroom.

(2+2)

Prerequisites: EDU100, OAS090, CIS090

EDU 270 Cultural & Linguistic Diversity 3 Cr. Hrs.

This course will prepare students to support learners from diverse backgrounds in an educational setting. Emphasis will be on culturally responsive and relevant teaching to English language learners. A field experience consisting of 105 hours will be tailored to the student's program of study.

(2 + 7)

Pre-requisites: EDU 100, EDU 150, EDU 120, EDU 230, EDU 260, PSY 110

Co-Requisites: EDU 220, EDU 240

EET121 DC Circuits 3 Cr. Hrs.

In this course the student will learn the fundamental principles of electricity with emphasis on DC (direct current) circuits. The concepts of Ohm's Law, the Power Formula, and Kirchoff's Laws will be applied to series, parallel, and series-parallel circuits. Electrical quantities will be defined and the behavior of resistors, inductors, and capacitors under DC conditions will be studied. Complex circuits will be analyzed using the theorems of superposition, and Thevenin and Norton equivalent circuits. The relationship between electricity and magnetism will also be introduced. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012. (OET001 - DC Circuits).

(2+2)

Prerequisite: MTH090

EET122 AC Circuits 3 Cr. Hrs.

In this course the student will continue to learn the fundamental principles of electricity with emphasis on AC (alternating current) circuits. The concepts of Ohm's Law, the Power Formula, and Kirchoff's Laws will be expanded to include steady-state AC circuits. The behavior of filter circuits and transformers will be studied along with the theorems of Superposition, and Thevenin and Norton equivalencies applied to AC networks. Complex numbers and phasors will be used to represent sinusoidal AC quantities. The course concludes with an introduction to electric power systems, power factor analysis, and poly-phase systems. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET003 - AC Circuits).

(2+2)

Prerequisite: EET121

EET132 Discrete Structures 3 Cr. Hrs.

In this course the student will be introduced to the discrete structures used in computer science for software development including mathematical proof techniques, Boolean logic, graphs, trees, recurrence relations, and functions. Topics will be learned through text, presentations, and various exercises.

(2+2)

Prerequisites: MTH109 and EET240

EET221 Digital Circuits 4 Cr. Hrs.

In this course the student will be introduced to the fundamentals of digital logic that forms the basis of digital electronic systems. Topics include number systems and codes, logic gates, Boolean algebra, and logic simplification using key theorems. Elementary digital circuits will be explored including: encoders, adders, multiplexers, flip-flops, counters, shift registers, and memory devices. Integrated circuit (IC) technologies and applications will also be discussed. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET002 - Digital Circuits).

(3+3)

Prerequisite: MTH090

EET231 Microprocessors 4 Cr. Hrs.

In this course the student will gain a fundamental understanding of the microprocessor and microcontroller. Microprocessor architecture and hardware including bus structures, memory, and input/output (I/O) will be studied. Operation of the microprocessor/controller will be programmed by the student using hardware specific Assembly language. Real-world applications using the microprocessor and microcontroller will also be discussed. These topics will be learned through text, presentations, various exercises, and hands-on labs.

(3+2)

Prerequisite: EET221

EET240 Engineering Programming 3 Cr. Hrs.

This course is the study of the popular Visual Basic 6.0 programming language. The focus will be on the student learning statement language and visual programming. Projects and learning activities will include Engineering and Industrial Maintenance applications.

(2+2)

Prerequisite: MTH090

EET272 Networking I 3 Cr. Hrs.

This is an introductory course in data networking focusing on cabling, Ethernet protocols, switching and routing. Discussion topics include the OSI model, Ethernet, TCP/IP, network hardware, data cabling, IPv4 and IPv6 addressing, designing TCP/IP networks, and troubleshooting. The course is mix of classroom learning and hands-on laboratory using real networking equipment.

(2+2)

Prerequisite: MTH090

EET277 Industrial Electronics 3 Cr. Hrs.

This course is a study of the electronic devices used in modern day industrial machinery. Solid state switching devices will be discussed, that includes transistors, SCRs and Triacs, as well as the firing devices used in current controlled circuits. Power supply circuits and basic amplifier circuits using Operational Amplifiers will also be discussed. Students will focus on operation, application and troubleshooting of the various electronic devices. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET005 - Electronics).

(2+2)

Prerequisite: IND120

130

EET282 Networking II 3 Cr. Hrs.

This is an intermediate level networking course meant to be a second course in data networking. Discussion topics include, but are not limited to, spanning tree, configuring and installing routers, understanding IP routing, wide area networking implementation and technology, IPv4 and IPv6 routing protocols, network management and troubleshooting. The course is a mix of classroom learning and hands-on laboratory using real networking equipment.

(2+2)

Prerequisite: EET272

EET289 Systems Integration 3 Cr. Hrs.

This course is a capstone for the Manufacturing Maintenance, Industrial Electrical, PLC Certificate and Maintenance Technician/Mechatronics Programs. Upon the completion of the requirements for the previously mentioned programs the learner will display his/her newly developed skills by designing an industrially related system, (electrical and pneumatic), install the appropriate electrical and mechanical devices and troubleshoot the system to 100% of the design specifications.

(2+2)

Prerequisites: PLC200 and IND134

EMS102 EMT Basic I 4 Cr. Hrs.

This course provides an overview of the Emergency Medical Services system and the roles and responsibilities of the Basic EMT. Topics include basic medical emergency management, patient assessment and triage, multi-system trauma management, patient stabilization and transportation. This course, along with successful completion of EMT Basic II, follows state and national guidelines for certification as a Basic EMT. The course requires hands-on laboratory and clinical experiences.

(3+2)

EMS103 EMT Basic II 3 Cr. Hrs.

This course provides training on special needs patients, including geriatric and pediatric patients as well as EMS Special Operations. Assessment based management of patients will be discussed. Laboratory experiences and clinical rotations are a required component of this course. Students must successfully complete EMT Basic I in order to enroll in this course.

(2 + 2)

Prerequisite: EMS 102

EMS202 EMT Advanced I 5 Cr. Hrs.

This course emphasizes the roles and responsibilities of the EMT-I and includes medical/legal considerations, basic pharmacology, medication administration, airway management, and advanced assessment techniques. The laboratory component includes procedures in IV therapy, shock management, cardiac management and EKG interpretation. This course, along with successful completion of EMT Intermediate II, follows state and national guidelines for certification as an EMT-I. Students must submit verification of current Ohio EMT-Basic certification.

(4+2)

Prerequisite: EMS103 and Current Ohio EMT-Basic Certification

EMS203 EMT Advanced II 3 Cr. Hrs.

This course provides the Intermediate EMT advanced training on emergency care of special needs patients, including geriatric and pediatric patients as well as a review of EMS Operations. Laboratory experiences and clinical rotations are a required component of this course. Students must successfully complete EMT Intermediate I in order to enroll in this course.

(2 + 2)

Prerequisite: EMS 202

ENG095 Integrated College Reading & Writing 4 Cr. Hrs.

ENG095 blends the strategies necessary for successful reading in college courses with the writing processes which will lead to clear and effective communication. The course will emphasize skills for efficient, independent learning from textbooks and other college reading materials, with the emphasis on vocabulary development. It reviews the steps for composing college-level paragraphs and essays, including a review of common grammatical structures used in formal academic writing.

(4+0)

Prerequisite: Satisfactory score on Course Placement Test

ENG099 Writing Skills Workshop 2 Cr. Hrs.

ENG 099 introduces basic strategies for effective written communication with an emphasis on grammar, punctuation, and syntax. It scaffolds topics and supplements knowledge of genre assignments from its required co-requisite course, ENG 111, in a hands-on, collaborative writing workshop meant to support and transition students to success in college level writing tasks in an accelerated environment.

(2+0)

Composition I 3 Cr. Hrs.

An expository composition course emphasizing the expectations of college-level writing, including thesis development, support, and coherence. Students will gain experience using a variety of rhetorical modes. In addition to a number of full-length essays, a short documented paper, based on research materials and using parenthetical references, is required.

(3+0)

Prerequisite: ENG095, or concurrent in ENG099, or satisfactory score on Course Placement Test

ENG112 Composition II 3 Cr. Hrs.

Building on the skills learned in Composition I, this course further develops the student's writing and research experience, with an emphasis on analytical writing in response to critical reading and class discussion. Using MLA parenthetical documentation techniques, the student will write several short essays and a research paper.

(3+0)

Prerequisite: ENG111 with grade of "C" or better

ENG113 Speech 3 Cr. Hrs.

This course provides experience in public speaking. Organization of ideas, improvement of critical thinking skills, and the use of visual aids are important parts of the course. Student speeches are analyzed and critiqued for effectiveness. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM004 - Basic Public Speaking/Oral Communication).

(3+0)

ENG210 Technical Communications 3 Cr. Hrs.
This course develops written and oral communication skills needed in technical fields, focusing on producing documents, effectively conducting group discussions, and giving presentations. It includes formal individual and group technical reports as well as shorter documents common to technical fields, emphasizing clear, concise, and logical communication strategies, format and visual aids.
(3+0)
Prerequisite: ENG112 or instructor permission

ENG214 Discussion & Conference Method 3 Cr. Hrs.
Focuses on the elements of communication and small group theory as employed in a group discussion situation with emphasis on the individual's responsibility in the discussion setting. Focuses on the development of the leadership abilities within the group, including analysis of group interaction in the decision-making process for task-oriented groups. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM003 - Small Group Communication).
(3+0)

ENG217 Introduction to Creative Writing 3 Cr. Hrs.
A multi-genre writing course which explores poetry, fiction and drama. Students will write and workshop original works and learn the basics of craft for each area, including: imagery, meter/form, character, metaphor, dialogue, story, setting, and voice. Reading selections emphasize contemporary and historical writers, and students develop a writing portfolio of revised creative works across three genres.
(3+0)
Prerequisite: ENG111 with "C" or better

ENG223 Interpretation of Literature 3 Cr. Hrs.
Introduces the elements of critical reading of literature, specifically fiction, poetry, and drama. Topics such as structure, character, point of view, style, theme, tone, and symbolism first are defined, then applied to selected pieces of literature. Examines the importance of historical, cultural, and literary contexts for understanding literature. **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG230 Children's Literature 3 Cr. Hrs.
Reading and evaluation of nonfiction and fiction, folklore, myth, poetry, and illustrated books for children and adolescents from critical and multi-cultural points of view. **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG240 Introduction to Poetry 3 Cr. Hrs.
Introduces the elements of critical reading of poetry, including poetic language, imagery, and forms. Focuses on poems as expressions of important themes of human experience and as products of their historical and cultural contexts. **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG241 Introduction to Fiction 3 Cr. Hrs.
Focuses on a critical reading of fiction, particularly short stories, examining formal elements, including plot, character, setting, point of view, and theme. Introduces various critical perspectives for the interpretation of fiction, including the importance of historical, cultural, and literary contexts for understanding fiction. **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG250 American Literature 3 Cr. Hrs.
Through the Mid-19th Century
Surveys American literary works ranging from recorded Native American oral traditions through the literature of the Civil War period. Places works in historical and cultural contexts, focusing on the development of major themes and movements in American literature. Transfer Assurance Guide (TAG) approved effective fall 2005 (OAH250 - American Literature I). **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG251 American Literature 3 Cr. Hrs.
Since Mid-19th Century
Surveys American literary works from the late nineteenth century through the contemporary period. Places works in historical and cultural contexts, focusing on the development of major themes and movements in American literature. Transfer Assurance Guide (TAG) approved effective summer 2009 (OAH054 - American Literature II). **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG260 British Literature 3 Cr. Hrs.
Through the 18th Century
This course focuses on British literature from the Old English period through the Restoration and eighteenth century examining writers and representative literary texts, including poetry, drama, and prose fiction and non-fiction, as they reflect cultural and historical contexts. Transfer Assurance Guide (TAG) approved effective spring 2009 (OAH055 - British Literature I). **Writing intensive.**
(3+0)
Prerequisite: ENG111

ENG261 British Literature 3 Cr. Hrs.
19th Century to Present
This course focuses on British literature from the Romantic period through the twentieth century, examining writers and representative literary texts, including poetry, drama, and prose fiction and non-fiction, as they reflect cultural and historical contexts. Transfer Assurance Guide (TAG) approved effective spring 2009 (OAH056 - British Literature II). **Writing intensive.**
(3+0)
Prerequisite: ENG111

FRA100 Fraud Detection & Deterrence 3 Cr. Hrs.
The opportunity to commit and conceal fraud exists only when there are assets susceptible to misappropriation and a lack of internal controls to prevent or detect fraud. This course will focus on the high-risk fraud environments wherein assets are more vulnerable to misappropriation and fraud environments heightened by either a lack of, or non-functioning of, internal controls. Various fraud investigative methods and the process for communicating an expert report will play an essential role in these studies.
(3+0)

FRA200 Fraud Examination**3 Cr. Hrs.**

A study covering occupational fraud and abuse including asset misappropriation, corruption, and fraudulent statements. The course provides an understanding of fraud examination methodology, and sets forth the schemes used by executives, managers, and the employees to commit fraud against their organizations. It provides an analysis of various kinds of frauds and includes cases that illustrate and help the student understand each type of fraud. Based on extensive empirical research in forensic accounting, the course aids the student in identifying exposure to loss and appropriate prevention, detection, and investigation approaches.

(3+0)

Prerequisite: ACC111

FRA210 Legal Elements of Fraud**3 Cr. Hrs.**

There are four general elements under common law, all of which must be present for fraud to exist: (1) a material false statement, (2) intent, (3) reliance on the false statement by the victim, and (4) damages. This course takes an in-depth look at each of these components in relation to crimes that fall under the umbrella of fraud. It also emphasizes federal legislation related to fraud examinations including coverage of laws that preserve the rights of individuals suspected of committing fraud and laws that govern civil prosecutions, the admittance of evidence, and the testimony of expert witnesses.

(3+0)

Prerequisite: ACC111

FRA220 Corporate Internal Control & Governance**3 Cr. Hrs.**

Under the Sarbanes-Oxley Act of 2002, CEOs and CFOs must now sign on the dotted line, personally attesting to the accuracy of financial statements and to the fact that their companies have proper internal controls to prevent and detect fraud. This course helps in understanding complex compliance requirements, identify types of fraud, implement awareness and prevention training, and establish a robust fraud detection, investigation, and prevention program. More importantly, it will examine how companies can effectively establish an ongoing culture of compliance.

(3+0)

Prerequisite: ACC111

GEO110 World Geography**3 Cr. Hrs.**

This course conveys the nature, challenges, and component interrelatedness of the discipline of geography. The geographic method of inquiry is used to describe, explain, and analyze our environment. The principal goal of the course is to give the student a global perspective from which he or she can view the uniqueness of the discipline. Thus the student is introduced to the tools, vocabulary, and the spatial orientation used by the geographer. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS008 - Geography).

(3+0)

GEO210 Geography - U.S. & Canada**3 Cr. Hrs.**

A study of the human geography of the U.S. and Canada, covering the geographic influence on the demographic, economic, political, and cultural themes of these neighboring countries, which share a common geography and history in many respects. Major focus is on human patterns and the interaction among these patterns as well as the actual physical environment.

(3+0)

GSD100 Success Seminar**3 Cr. Hrs.**

In this course students will learn to evaluate themselves as learners, and improve their learning habits and attitudes. Students will develop strategies for maximizing effectiveness in college, work, and community settings.

(1+0)

Required course for students who test into either developmental math or English courses. It is required for students on Academic Probation or those returning from Academic Suspension. This course is open to any student and could be used as 1 credit General Studies elective.

GSD120 Career and Life Planning**3 Cr. Hrs.**

This class assists the student in examining the components of career choice. The focus is on career awareness, personal awareness, and educational awareness as they relate to the process of career choice. Planning skills and self-assessment instruments will help identify tentative career options. Decision-making strategies, resume writing, interviewing skills, and job search techniques will be reviewed.

(3+0)

HIS101 U.S. History Pre-1876**3 Cr. Hrs.**

A study of the social, political, and economic development of the United States through the Post Civil War period. Several critical periods in early American History are examined: colonization, settlement, rebellions, revolutions, constitution making, Jeffersonian and Jacksonian democracy, slavery, the westward movement, the Indian problems, and the Civil War. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS043 - U.S. American History I and OHS010 - U.S. American History Sequence, Course 1 of 2). **Writing intensive.**

(3+0)

Co-requisite: ENG111

HIS102 U.S. History Post-1876**3 Cr. Hrs.**

United States from the Reconstruction period to the present. Topics include reconstruction, impact of industrialization, agricultural revolution, populism, rise of monopoly capital in the "progressive" era, the age of imperialism, WWI, Great Depression, WWII, the New Deal, the Welfare State, the Vietnam War and the popular protests, the civil rights movement, the rejection of the welfare state and rise of Neo-Conservatism. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS044 - U.S. American History II and OHS010 - U.S. American History Sequence, Course 2 of 2). **Writing intensive.**

(3+0)

Co-requisite: ENG111

HIS203 U.S. Since 1945**3 Cr. Hrs.**

A contemporary history of the United States which provides a balanced account of foreign affairs, domestic politics, and social and cultural change. Presents change from U.S. global hegemony to a truly global economy as the backdrop for the replacement of the liberal-welfare state with the neo-conservative state. Relates this important transition to the form and content of popular protest since 1945. Topics include the New Deal, the Cold War, confronting the Third World, struggles for equality, and mass media effects on popular culture. **Writing intensive.**

(3+0)

Co-requisite: ENG111

HIS210 The Modern World 3 Cr. Hrs.
 Joins a study of the history of the modern world with students' understanding of their place in the contemporary world. Competing histories of the modern world's origins are followed by a comparative study of western and non-western societies and the forces giving rise to modernism, reaction, revolution, and postmodern tendencies from the 13th century to the present times. **Writing intensive.**
 (3+0)
 Co-requisite: ENG111

HIS290 Historic Preservation Internship 3 Cr. Hrs.
 The Co-Op/Internship is an experience in which the student works in a position consistent with the program major. The student is expected to integrate skills learned in program courses with job responsibilities, while applying work experience to class activities. Primary work duties are documented through a work log, incident summary, focused report, and a site visit.
 (1+20)
 Prerequisite: Permission of Instructor

HPF106 Beginning Western/English Horsemanship 1 Cr. Hr.
 This course is designed for the novice or beginner who has had little or no exposure to horses or riding. Students will learn horses and riding from the "ground-up" in which the very basics of horsemanship is taught. The instructor tries to match each student's abilities with a specific horse while keeping in mind everyone's safety is of the highest concern. All classes are conducted at Sanderson Stables, located on the corner of Union and Washington Streets, Cygnet, Ohio 43413; phone 419-655-2253. Sanderson Stables owns and maintains horses, tack, and grounds specifically for appropriate instruction. This course can also be taken as many times as the student desires. This course is many times used to fulfill the physical education requirement at the university level
 (1+0)

HPF107 Intermediate Rider 1 Cr. Hr.
 This course is designed for Intermediate level riders who have mastered the HPF106 level skills and thus builds on those skills. The instructor tries to match each student's abilities with a specific horse while keeping in mind everyone's safety is the highest concern. The focus of this course is on handling the horse on the ground and in the saddle, as well as practicing the jog, lope and lead departures.
 (1+0)

HPF108 Advanced Rider 1 Cr. Hr.
 This course is designed for advanced level rider who has mastered the HPF107 level skills and thus builds on those skills. The focus of this course is on tack room procedures, as well as advanced riding methods, trail riding, trotting, buggies, carts and using a driving harness.
 (1+0)

HST101 Principles of Human Services 3 Cr. Hrs.
 This course explores educational considerations for teachers including the policies, theories, practices, skills, and knowledge of home, school, and community partnerships. Students will examine: the multiple influences on the whole child; accessibility of community services and supports; ethical, practical, and culturally competent decisions to foster family engagement; knowledge and skills needed to address family structure, socio-cultural and linguistic backgrounds, identities and customs, and advocacy for children and families.
 Prerequisites: EDU100
 (3+0)

HST105 Cultural Competence with Diverse Populations 3 Cr. Hrs.
 This course identifies the special needs and issues involved in providing human services to diverse populations. Diversity includes but is not limited to race, ethnicity, gender, religion, sexual orientation, disability, age and socioeconomic status. The focus is on the inequalities affecting these groups, culturally relevant intervention strategies used at the micro, mezzo and macro levels of practice and advocacy strategies used in the pursuit of social, economic and environmental justice.
 (3+0)
 Prerequisite: HST 101 and PSY 110

HST108 Principles of Developmental Disability 3 Cr. Hrs.
 A principles course in the field of Mental Retardation and Developmental Disabilities and the historical and legal perspectives within the field. Course includes service delivery models, current trends, prevention issues, causes, conditions and characteristics.
 (3+0)

HST112 Group Work in Human Services 3 Cr. Hrs.
 This course is an introduction to basic knowledge, techniques, and skills used by Human Service workers in facilitating groups. Group dynamics, theory, leadership skills and techniques used in facilitating groups will be examined and applied to a variety of task and treatment groups utilized in Human Service settings with various target populations.
 (3+0) S

HST208 Interviewing Techniques 3 Cr. Hrs.
 This course is focused on helping students understand and develop basic interviewing skills used in working with clients in human service settings. Emphasis is placed on developing collaborative relationships with clients, understanding the role of nonverbal communication, use of appropriate verbal responses, conducting assessments, developing service plans and evaluation strategies used to measure progress. A segment of the course is devoted to developing crisis intervention skills and techniques.
 (3+0)
 Prerequisites: PSY110, HST101, and HST105

HST210 Human Services Methods 6 Cr. Hrs.
 A practical, in-house lab experience meant to prepare students for their actual experience in a human service agency. Seminar format provides for discussion and integration of experiences with academic courses. Open only to Human Services Technology majors who have completed 18 credit hours of Human Services technical courses with a grade of "C" or better. Labs for this course will consist of supervised labs/lab hours to be arranged in-house along with field lab hours. Supervised by Master Level Social Worker, State Licensed.
 (4+4)
 Prerequisites: HST101, HST105, PSY210, and HST112
 Co-requisite: HST208

- HST212 Principles of Addiction 3 Cr. Hrs.**
Presents substance abuse and addictive problems from an addictions model approach. A historical, cultural, and social context is presented as well as an overview of the theories of addiction. Other major topics: recognizing early signs and symptoms of substance abuse, differences in counseling strategies with substance abusers, and other derivative problems. This is a foundation course with a scientific base. Family systems are reviewed.
(3+0)
- HST214 Human Services Case Management 3 Cr. Hrs.**
Provides the experience and knowledge of the human service worker providing case management functions. Areas of concentration include service provisions when working with special populations. The provisions include, but are not limited to, client identification, individual assessment and diagnosis, determining service needs of the client, service planning and resource identification, linking the client to appropriate services, service implementation, how to monitor service delivery, how to advocate, and evaluation of service delivery. Special emphasis is on specific target populations, and services available.
(3+0)
Prerequisites: HST208 & HST210 or Instructor Permission
- HST222 Ethics in the Helping Profession 3 Cr. Hrs.**
The practice of counseling and related helping professions is regulated both by law and by professional standards of practice or codes of ethics, which provide only general guidelines. This course will look at historical and contemporary theories of relevant ethical theories and provide exposure to real-life ethical issues from a multi disciplinary approach.
(3+0)
Prerequisite: HST101
- HST240 Social Problems 3 Cr. Hrs.**
An examination of the major social problems existing in western society and how various conditions within society come to be defined as social problems. Topics include such areas as poverty, racism, sexism, unemployment, AIDS, and abusive behaviors (physical, psychological, sexual abuse, and neglect). Analysis of each of these problems along with the social welfare system's responses and the role of the human services worker. Transfer Assurance Guide (TAG) approved effective fall 2007 (OSS025 - Social Problems).
(3+0)
- HST242 Marriage and Family 3 Cr. Hrs.**
A comprehensive look at relationships in which the content includes: marriage, cohabitation, singles, family dynamics (parenting, adoption, etc.), historical and cultural differences in both traditional and contemporary settings; life span development, divorce, domestic violence, death and dying issues. Theoretical frame works as well as practical application of those theories will be covered. Transfer Assurance Guide (TAG) approved effective fall 2007 (OSS023 - Marriage and Family).
(3+0)
- HST280 Special Problems in I Human Services 1-6 Cr. Hrs.**
Permission of Human Services instructor required. Content, methodology, and purpose to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.
Prerequisite: Permission of Instructor

- HST282 Special Problems Human Services III-6 Cr. Hrs.**
An independent study which focuses on a topic or individual selected problems in Human Services. Subject to approval and supervision of an assigned Human Services instructor. Content, methodology, and purpose to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.
Prerequisite: Permission of Instructor
- HST290 Practicum I 6 Cr. Hrs.**
Practical experience in a human services agency. Two-hour seminar provides for discussion and integration of experiences with academic courses. Open only to Human Services Technology majors who have completed a minimum of 45 credit hours of work and have completed 24 credit hours of Human Services technical courses with a grade of "C" or better.
(2+16)
Prerequisites: HST208 and HST210
Co-requisite: HST214
- HUM209 Humanities & Cultures: Ancient & Medieval Worlds 3 Cr. Hrs.**
Surveys Western and non-Western humanities of the ancient and medieval worlds. Examines creative expression, such as art, literature, and philosophy, as evidence of the evolution of ideas that serve as the roots of modern cultures. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS041 - Western/World Civilization I and OHS009 - Western/World Civilization Sequence, Course 1 of 2). **Writing intensive.**
(3+0)
Co-requisite: ENG111
- HUM210 Humanities & Cultures: Renaissance to Present 3 Cr. Hrs.**
Examines various Western and non-Western creative traditions, including art, literature, and philosophy, during and after the Renaissance. Focuses on the interaction of ideas and traditions in the modern world. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS042 - Western/World Civilization II and OHS009 - Western/World Civilization Sequence, Course 2 of 2). **Writing intensive.**
(3+0)
Co-requisite: ENG111
- HUM221 Music Appreciation 3 Cr. Hrs.**
The study of vocal and instrumental music from the standard repertoire primarily through listening. Previous music training is not required, but regular listening is part of the course. **Writing intensive.**
(3+0)
Co-requisite: ENG111
- HUM230 Art Appreciation 3 Cr. Hrs.**
Theories and philosophies of art history and aesthetics covering prehistoric art to modern art. Students will learn to analyze and respond actively to art, using appropriate artistic concepts and vocabulary. **Writing intensive.**
(3+0)
Co-requisite: ENG111

IND100 Precision Measurement 3 Cr. Hrs.

This course provides the student with theory and skills needed to perform dimensional inspections. Students will learn to study a part print, select, and use the proper measuring tool(s). Concepts introduced include precision, discrimination, accuracy, and calibration. Expands previously learned print reading skills to include Geometric Dimensioning and Tolerancing.

(2+2)

IND103 Applied Geometry & Trigonometry 3 Cr. Hrs.

Geometry includes definitions and descriptions of geometric terms, axioms, theorems, propositions dealing with straight lines, triangles, polygons, and circles, as well as perpendicular and parallel relationships. Trigonometry includes definitions of basic trigonometric functions, use of trigonometric tables, solutions of right triangle and oblique triangle problems, use of sine, cosine, tangent and their reciprocals in the solutions of unknown angles, logarithms, and practical shop problems.

(2+2)

Prerequisite: MTH080

IND105 Industrial Safety 2 Cr. Hrs.

This is a course in hazard recognition based on OSHA recommended standards. Although students learn to identify potential hazards in the workplace, they will also develop a greater awareness of hazards in their environment. Students will also certify in CPR through the American Heart Association.

(2+0)

IND107 Print Reading and Sketching 3 Cr. Hrs.

Print Reading and Sketching is designed to give a basic overview of the following: abbreviations, terminology, different line types, view identification, dimensioning practices, dimensioning calculations, tolerance calculations, and sketching including geometric construction, orthographic projection, isometric, section and auxiliary views.

(2+2)

IND110 Industrial Computing I 3 Cr. Hrs.

This course is a study of the application of computer systems as found in an industrial environment. The focus of this class will be on operating systems, networking and computer hardware. This class will be taught at an applied level for the Skilled Trades Person, Technician, and Engineer.

(2+2)

IND120 Industrial Electricity I 3 Cr. Hrs.

This is an introductory electricity course for skilled trade's personnel. The course is a study of DC and AC electricity principles, with a practical approach to applications in an industrial environment. The learner will obtain a knowledgeable understanding of the key symbols and abbreviations associated with the electrical trade, acquire a comprehensive understanding of basic electrical terminology, apply Ohm's Law to a number of relevant electrical applications, and synthesize a number of components into a working system involving series, parallel, and series parallel circuits.

(2+2)

Prerequisite: MTH050

IND121 Industrial Electricity II 3 Cr. Hrs.

This course is an advanced study of Industrial Electricity providing comprehensive coverage of the control devices used in contemporary industrial electrical systems. The focus of this course is to provide the architecture for acquiring the knowledge and skills required in an advanced manufacturing environment. The course continues with electrical and motor theory, building on circuit fundamentals and reinforcing these with practical hands-on labs designed to reinforce the concepts and provide control systems design experience. These topics will be learned through text, presentations, various exercises, and hands-on labs.

(2+2)

Prerequisite: IND120 or instructor permission

IND122 Industrial Wiring (NEC) 3 Cr. Hrs.

The primary purpose of this course is to acquaint the learner with a ready source of information relevant to the NEC (National Electric Code), IEC (International Electrotechnical Commission), AISI (American Iron and Steel Institute), NFPA, (National Fire Protection Association), ANSI (American National Standards Institute), UL (Underwriters Laboratories, Inc.), OSHA (Occupational Safety and Health Act), and various Local Codes. This information will focus primarily on the electrical design and engineering of most site work including, but not limited to, industrial, commercial, and residential occupancies.

(2+2)

Prerequisite: IND120

IND130 Rigging and Erecting 2 Cr. Hrs.

This course incorporates the basic laws of physics to moving, setting-up, and securing machinery. Leverage and mechanical advantage, and the care and selection of equipment are taken in consideration while calculating load weights based on various shapes and types of material. Upon completion learners will be able to calculate sling angle tension and how to apply relevant information to different rigging hitches while determining the correct size of rigging tools needed for the job. Learners will apply lecture material to lab applications including mobile crane safety, inspection, hand signals, and proper load chart usage.

(2+0)

IND131 Industrial Pipefitting 3 Cr. Hrs.

A study of the specifications, application, installation, and maintenance of various kinds of pipe, fittings, valves, pumps, and hand tools. The analysis of job requirements in terms of materials, time utilization and sequence of operation is discussed.

(2+2)

Prerequisite: MTH050

IND132 Bench Work 2 Cr. Hrs.

This is the first basic machine shop course in which students learn the use of hand tools. Students are required to select appropriate tools and identify machining processes with emphasis on safety, tooling, precision, and accuracy. Topics include: materials, mechanical fasteners, measurement, tolerance, fit, layout, hand tools, power tools, drilling, grinding, sharpening, hardening, deburring, filing, polishing, layout work on the bench, use of hand taps, and cutting threads with a die.

(2+0)

136

IND134 Industrial Fluid Power I 3 Cr. Hrs.

Fluid power is an efficient way to move energy without mechanical belts, chains, or levers. The physics of fluids, components, and troubleshooting and design applications for hydraulic and pneumatic systems are covered in this class.

(2+3)

Prerequisite: IND120

IND140 Principles of Machining 3 Cr. Hrs.

The focus of this course is to provide the student with a basic foundation in the skills needed to perform basic machining methods. The student will develop key techniques that will aid in proper selection, identification, and application of machines and machining methods. Hands-on laboratory work with the lathes, mills, drills, grinders, fixture utilization, feeds and speeds, is emphasized. Special emphasis will be placed on safety, precision, accuracy, and teamwork in completion of assigned lab projects. The student will be required to interpret basic blueprints and manufacture parts to print specifications.

(2+3)

Co-requisite: MET110

IND141 Metallurgy & Heat Treatment 2 Cr. Hrs.

A basic course covering the nature and behavior of metals, crystalline structure, theory of alloys, principles of heat treatment, properties of metals and alloys and testing applications. The Rockwell and Brinell hardness testers will be used.

(2+0)

Prerequisite: MTH080

IND220 Electrical Prints & Troubleshooting 3 Cr. Hrs.

This course is a study of the systematic elimination of the various parts of a system or process to locate a malfunctioning part. The learner will obtain a knowledgeable understanding of the key symbols and abbreviations associated with the electrical trade, acquire a comprehensive understanding of the various devices associated with an electrical circuit, synthesize a number of electrical components associated with a viable sequence of operation, recognize a malfunctioning circuit through proper meter application, and apply informed terminology while troubleshooting and restoring a malfunctioning system to its original intention promptly but safely.

(2+2)

Co-requisite: IND121

IND221 Instrumentation & Controls I 3 Cr. Hrs.

This course is a study of the operation and troubleshooting of Industrial Instrumentation systems. The focus will be on analog monitoring and controlled devices, connected to stand alone and PLC based controller systems. The concepts of temperature, pressure, level and flow will be discussed, as well as the transmitters that connect the analog sensor signals to the analog I/O.

(2+2)

Prerequisite: PLC200

IND223 Motors & Motor Controls 3 Cr. Hrs.

This course is an advanced study and laboratory for learners who have an understanding of electrical circuits, controls and desire practical hands-on experience of various motor and control devices. Coursework involves hands-on laboratory experience utilizing 120vac, 208/240 VAC as well as text study. Practical application of principles learned will be emphasized. Special topics in electricity will be introduced to the learners according to class interests. Topics of study will include ladder diagrams and their control of alternating and direct current motors. Motor starter sizing, circuit/overload protection, electrical motor branch wiring will also be introduced. The Variable Frequency Drive as a motor controller will also be introduced as well as the application of the programmable logic controller in motor control circuits. The learner will also be responsible for any outside assignments as well as the successful completion of all required laboratory demonstrations. These topics will be learned through text, presentations, various exercises, and hands on labs.

(2+2)

Prerequisite: IND121

IND232 Machine Repair 3 Cr. Hrs.

Basic fundamentals of methods and means to rebuild a production machine such as realignment of columns of tables, scraping of ways, replacing spindles, gears, bearings, gibs, etc.

(2+2)

Prerequisite: IND132

IND234 Industrial Fluid Power II 3 Cr. Hrs.

In this class, the student will use electro-pneumatic and electro-hydraulic components controlled by a programmable logic controller (PLC). The student will be able to construct, write, and troubleshoot a complete electro-pneumatic or electro-hydraulic circuit controlled by a PLC. The students will build, design, and troubleshoot machines using pneumatics, hydraulics, and electrical components.

(2+2)

Prerequisite: IND134

IND240 Machining Processes II 3 Cr. Hrs.

This class is intended to better the student's skills learned in IND140. This class is focused on the student applying their ability to use machine shop equipment to machine projects that apply to the machining, tooling and print reading technologies. Students will focus on machining industrial parts from well documented and professional prints, as well as from documented sketches created on a factory floor on their own. Projects should be more advanced than projects developed in IND140. Students will be assessed by their accuracy, efficiency and finished product using their abilities.

(2+2)

Prerequisite: IND140

IND241 Tooling & Fixtures – Lubricants & Coolants 3 Cr. Hrs.

Tooling, Jigs & Fixtures, Dies, Lubricants and Coolants are an integral part of modern machine practices. This course will provide the student with a basic foundation in Tooling, Jigs & Fixtures, and Die application and theory. Tool selection, tool application, tooling speeds and feeds will be emphasized. Jig & Fixture application will introduce the student to the use of Jigs & Fixtures in machining practices, datums of Jigs & Fixtures, and choice of Jigs & Fixtures for specific applications. Basic Die theory and design will be studied. The function, use, and types of lubricants and coolants will be covered in depth.

(2+2)

Prerequisite: IND140

IND250 Capstone Project (CNC Operations) 3 Cr. Hrs.
This course will focus on a comprehensive project that will require the student to utilize the knowledge and skill learned throughout the program, in order to prepare to work in a CNC production environment. This experiential learning will focus on an actual project setup by a company that would potentially hire students from this program. Students will interact with the instructor and possibly in a small group setting with other students in the class, yet be assessed independently. The end result will be the student setting up and maintaining a CNC machining process in a plant floor environment.
(2+3)

INT101 Metrics for Welding 1-4 Credits
This course is designed to help the skilled trades person understand the metric system, its prefixes, lengths, volumes, and weights; and, how to convert these units from the English metric system and/or vice versa.
(1+0)

INT102 Welding Safety 1-4 Credits
This course covers safety and health topics for workers involved in construction, general fabrication, and maintenance. The focus of the class will be on exposing potential hazards and safety or health problems associated with welding; showing that with properly instituted precautionary measures, welding is a safe occupation.
(1+0)

INT103 Welding Processes I 3 Credits
This course is a study of the major welding processes. The focus of the class will be on learning the principles and practices of these processes in the classroom and laboratory.
(2+2)

INT104 Intro to Ironworking 1-4 Credits
This course is an introduction to ironworking and its place in the construction industry. The focus of the class will be on revealing the nature of work, working conditions, employment, training, wage, and advancement opportunities.
(1+0)

INT105 Pre-Casting Basics 3 Cr. Hrs.
This course is designed to cover the essentials of precast concrete products and their use in the construction industry. It is designed for skilled trades, construction workers, and those who perform maintenance and repair work, as well as those who install precast concrete work in new construction.
(2+2)

INT106 Reinforcing Basics 3 Cr. Hrs.
This course is designed to cover the essentials of the proper utilization of reinforcement bars and welded mesh for concrete construction of highways, bridges, office and other large buildings, and power transmission towers. The class is designed for skilled trades, construction, and maintenance personnel who build, maintain, and perform repairs on the above mentioned or similar structures.
(2+2)

INT120 HVACR I 3 Cr. Hrs.
An introductory Heating, Ventilation, Air Conditioning and Refrigeration course for skilled trades personnel. The course is a study of basic thermo-dynamic principles, with a practical approach to applications in a residential, commercial and industrial environment. The course will cover basic heating and cooling concepts, refrigerant properties, psychometrics, terminology, safety, troubleshooting and applications of basic mechanical heating and cooling components and their electric / mechanical control.
(2+2)
Prerequisite: IND120 or EET121

INT200 Welding Processes II 2 Cr Hrs.
This course is an advanced study of SMAW and its applications in construction, maintenance, repair, and general fabrication. The focus of the class will be on advanced SMAW practices and techniques which conform to standards, codes, and specifications.
(2+0)

INT201 Rigging 3 Cr. Hrs
This course is a study of rigging safety for the skilled trades' persons, maintenance personnel, and/or construction workers. The focus of the class will be on introducing the different types of rigging equipment and how to properly use them.
(2+2)

INT202 Shielded Metal Arc Welding 2 Cr. Hrs
This course is designed to develop basic knowledge and skills in the shielded metal arc welding process. The focus will be on welding terms and definitions, how to join common metals, joint and weld classifications, welding positions, power sources selection, and flat and horizontal welding techniques and practices.
(2+0)

INT203 Shielded Metal Arc Welding 2 Cr. Hrs.
This course is an advanced study of shielded metal arc welding practices and procedures. The focus will be on advanced topics in SMAW and weld quality.
(1+2)

INT204 Structural Welding 3 Cr. Hrs.
This course is the study of the basics of welding structures. The focus will be on the strength of the weld on the structure and how to best anchor and support beams and cross members on building structures.
(2+2)

INT210 FCAW & GMAW Welding 5 Cr. Hrs.
This course is an advanced study of gas metal arc welding, and flux core arc welding practices and procedures. The focus will

INT212 Welding Fabrication 6 Cr. Hrs .
A study of the layout and fabrication of an industrial product. The student will complete welding projects, applying layout procedures, joint design, and use of fixtures. The course is relative to actual industrial fabrication standards, with an emphasis on quality.
(5+2)

138

INT213 Ornamental Welding I**4 Cr. Hrs.**

This course is a study of the various types of fabrication equipment when working with iron and steel. This equipment is then applied in a process to fabricate curtain and window walls. Basic layout concepts are studied, as well as how to effectively apply sealants and glazes. Students will also learn how to test the systems that are fabricated.

(4+2)

INT214 Ornamental Welding**4 Cr. Hrs.**

This course is an advanced study of ornamental welding. Students will learn how to install store fronts, entrance ways, swinging doors, sliding doors, hollow metal doors and balanced doors. Students will also study how to install service doors, sloped walls, stairs and handrails, toilet partitions and vanity supports.

(3+2)

INT215 Welding Certification**3 Cr. Hrs.**

This course is a study of the inspection, testing, and codes of welding in a construction environment. Students will apply the AWS welding symbols in the FCAW, GMAW, and GTAW. A focus of the course will be on testing procedures and how these can be converted to a certification for a particular welding process.

(2+2)

INT220 HVACR II**3 Cr. Hrs.**

An intermediate study of the HVAC field. Studies will include commercial and industrial designs and equipment, Load Calculations and System Sizing. Concepts of equipment control will be introduced featuring Low Voltage, High Voltage methodologies.

(2+2)

Prerequisite: INT120

INT221 HVAC III Heating Systems**3 Cr. Hrs.**

Learning outcomes to be developed in this course focus on the heating aspect of climate control. Topics to be covered would include "forced air" heating applications including natural gas, propane, fuel oil, electric resistance and heat-pump systems and their controls. Other heating topics would include Hydronics applications; i.e. residential, commercial and institutional boiler systems and their controls. Heat-pump technology will feature both "air-to-air" and geothermal technologies.

(2+2)

Prerequisite: INT220

INT222 HVACR IV Advanced HVAC Control**3 Cr. Hrs**

Learning outcomes to be developed in this course will focus on the various controls now being applied to HVAC-R systems. Electro-mechanical, pneumatic and Direct Digital Control (DDC) will be featured during this coursework with particular attention to DDC applications. The Programmable Logic Controller and its networking capabilities and user interface will be explored. Other topics explored will be the integration of fire/life safety systems with modern environmental equipment as well as system controlled environmental quality.

(2+2)

Prerequisite: INT221

INT223 HVACR V Advanced Topics**3 Cr. Hrs.**

Learning outcomes to be developed in this course will focus on some of the advanced and alternative energy efficient designs affecting climate control systems. Other topics to be covered may include energy auditing and energy management, energy procurement and energy cost accounting and advanced building architectural blue print interpretation.

(2+2)

Prerequisite: INT222

INT230 High Pressure Welding**3 Cr. Hrs.**

The high pressure pipe welding course is designed to prepare the student for welding qualification and certification in accordance with the ANSI/ASME Boiler and Pressure Vessel Code, Section IX. Through classroom and hands-on skill training the student will be afforded the opportunity to develop the knowledge and skill necessary to weld high pressure pipe, utilizing the shielded metal arc welding (SMAW) process in all four welding positions. Uphill welding progression will be utilized for the vertical welding.

(2+2)

ITR118 SPC Basics**1 Cr. Hr.**

This course provides an introduction to basic Statistical Process Control (SPC) concepts and how the SPC tools can be used for problem solving in a work environment. The basics of data collection, charting and analysis will be reviewed as well as basic problem solving techniques (critical thinking, brainstorming, flowcharts and fishbone diagrams). Students will also learn how to identify and interpret basic SPC charts (pareto, histogram, scatter plot, run and pseudo control). Students will walk through a basic problem and use the SPC tools to find solutions.

(1+0)

ITR119 Intro to GIBBS CAM**1 Cr. Hr.**

This is an introductory class on the use and application of GibbsCAM software. The focus will be on safety in programming, GibbsCAM interface, CAD elements, view, creating geometry, tool creation and description, tooling, machine operation (Mill, Lathe, EDC, etc.), rendering and post processing. Plenty of hands on with computer, CNC mills and lathe. This is a 16 hour course.

(1+0)

ITR121 GIBBS CAM- Intermediate**1 Cr. Hr.**

An advanced study of GibbsCAM software, including: advanced mill, introductory 3D, coordinate systems, geometry creation in 3D, multi-axis basics, solid surface, solid modeling, surface modeling, core and cavities, 3D machining, lace cutting, tool path projections and importing (models, drawing, and geometry).

(1+0)

ITR132 Elec. Safe Work Practices**1 Cr. Hr.**

This 16-20 hour seminar is focused toward plant maintenance personnel that are responsible for maintaining and troubleshooting electrical equipment in a production or process environment. Basic electrical terms will be discussed along with an emphasis on wiring and troubleshooting. Trainees will wire simple control circuits and troubleshoot faulted equipment, by using techniques and equipment covered in the seminar. Components covered include Start/Stop stations, Limit Switches, Solenoids, Pilot Lights, Relays, Motor Starters and Control Transformers. An emphasis will be on interpreting an electrical print.

(1+0)

ITR135 Principles and Theory of Mathematics 4 Cr. Hrs.

This course is designed to provide the student with a focus on computational skills, basic algebra concepts, and beginning trigonometry as applied to electrical and industrial problems. Examples cover operations with whole numbers, fractions, decimals, ratios, proportions, and integers. Basic algebraic rules and techniques are included with focus on linear equations, graphing, and angles. Students will proceed at an individualized pace through the various operations, but complete at least entry level algebra and trigonometry concepts as applied in simulated career examples in which electricians measure and produce 60 degree and 120 degree angle bends for rigid and thinwall conduit installations. Iron workers will demonstrate simulated angular displacement of the welding head for overhead and underwater welds.

(3+2)

ITR146 Industrial Hydraulics 2 Cr. Hrs.

This is a beginning course on basic hydraulic systems in an industrial environment. The focus of the class will be on component identification, operation, blueprint reading, maintenance, and troubleshooting. The students will connect circuits according to print specifications and make the circuits functional. Students will also learn root cause analysis troubleshooting in a hydraulics circuit. The maintenance number for this course is: 2049. This is a 40 contact hour course.

(2+0)

ITR147 FANUC Vision System 2 Cr. Hrs.

This is a beginning course on vision systems used in an industrial setting. The focus of the class will be on the functionality and repair of a Fanuc robotic vision system. The course covers the functionality and layout of each vision component, how to set robot guidance, how to setup and troubleshoot the 4 vision tools namely locators, calipers, histograms, and blobs. The trainees will also setup a project and calibrate a 3D laser and a 2D camer. The maintenance number for this course is:3092. This is a 40 contact hour course.

(2+0)

ITR148 FANUC RJ3iB Elec Service 2 Cr. Hrs.

This is a basic course on the functionality and repair of a Fanuc robotic system. The course covers the functionality and layout of each individual component, how the controller powers up, power distribution and signal tracing for AC and DC circuits. The trainees will also learn how to locate and identify all fuses and indicators, as well as the mapping and troubleshooting of inputs and outputs. The maintenance number for this course is: 3401. This is a 40 contact hour course.

(2+0)

JAT100 Electrical Career Orientation 2 Cr. Hrs.

This course includes orientation to the electrical career, apprenticeship, and the relationship between the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW). Topics include workplace safety and hazards, building wire, insulation properties, and commonly used electrical materials. Application of math computations is emphasized.

(2+0)

JAT102 National Electrical Code I 2 Cr. Hrs.

This course includes introduction to the National Electrical Code (NEC) and interpretation of articles of the NEC requirements for wiring applications. Wire properties, conductor insulation, and wiring devices are emphasized. NEC requirements for installation of wiring devices are studied, including boxes, receptacles, switches, and fittings.

(2+0)

JAT104 Conduit Fabrication I 2 Cr. Hrs.

This course will focus on conduit fabrication. Emphasis is on using basic trigonometric functions, types of conduit, bending techniques, and conduit threading techniques. Hand bending at 90 degrees and bending kicks and offsets are included.

(1+2)

JAT106 Conduit Fabrication II 2 Cr. Hrs.

This course is a continuation of Conduit Fabrication I. Emphasis is on advanced types of bending, including three and four-bend saddles, push-through bending at 90 degrees, bending kicks, and offsets. Mechanical, electric, and hydraulic benders are used along with hand bending.

(1+2)

JAT108 DC Theory I 4 Cr. Hrs.

This course includes the principles of electricity and energy sources. There is an introduction to switches, conductors, and circuits. Voltage, wattage, resistance, electrical circuits, and Ohm's Law are included. Series circuits, parallel circuits, and combination circuits are studied. There is a focus on potential hazards and the use of test instruments.

(3+2)

JAT110 AC Theory I 3 Cr. Hrs.

This course includes the principles of electricity and energy sources and the basic characteristics of alternating current circuits. There is an introduction to AC resistive circuits, inductance, frequency, reactance, and vectors. RL circuits, voltage, impedance, current, and capacitance are included. Series and parallel capacitors are studied. There is a focus on potential hazards and working safely with capacitors.

(2+2)

JAT112 Test Instruments 1 Cr. Hr.

This course is a study of the general use of test instruments for electrical applications. There is an introduction to test instrument abbreviations and symbols, and the use of test instruments on receptacles, meters, and switches. There is also a focus on line splitters, troubleshooting hidden diodes, and generators.

(1+1)

JAT114 Transformers I 1 Cr. Hr.

This course is a study of transformer principles and operations. Topics emphasized are magnetism, polarity, step-up transformers, step-down transformers, and using windings to vary voltages. Delta-Delta and Delta-Wye transformers are included.

(1+1)

140

JAT116 Electrical Safety I**2 Cr. Hrs.**

This course will focus on electrical safety and safety-related work practices. Hazard awareness and a culture of safety are emphasized. OSHA requirements are studied, as well as the history, evolution, and scope of NFPA 70E. Lockout, tagging, and control of hazardous energy are stressed.

(2+0)

JAT118 Blueprints I**1 Cr. Hr.**

This course will study of the fundamentals of blueprint drawing and making sketches. Emphasis is placed on understanding architectural views, common scales, elevation, and schedules. The use of electrical and mechanical symbols is included, as well as residential blueprints.

(1+0)

JAT120 Codeology – NEC**3 Cr. Hrs.**

This course will study of the National Electrical Code (NEC) and how to access information in the code book. Locating code information and understanding keywords and phrases are emphasized. Students will be able to access code rules regarding a variety of topics such as wiring, appliances, motors, heating systems, and communication systems.

(3+0)

JAT122 National Electrical Code II**2 Cr. Hrs.**

This course is a continuation of National Electrical Code I and includes National Electrical Code (NEC) requirements for wiring applications. The sizing of wire and ampacity are emphasized. A study of branch circuits, feeders, switches, and conduit is included. NEC requirements for wiring methods are studied, along with various boxes and fittings.

(2+0)

JAT124 AC Theory II**3 Cr. Hrs.**

This course is a continuation of AC Theory I. There is a focus on inductors in series and in parallel connections, as well as voltage, impedance, and current in series RC and RLC circuits. Parallel RL circuits and parallel RC circuits are studied with emphasis on voltage, impedance, and current. Students are expected to apply AC theory to solve real world problems.

(2+2)

JAT126 National Electrical Code III**2 Cr. Hrs.**

This course is a continuation of National Electrical Code II and includes National Electrical Code (NEC) requirements for overcurrent protection. Types of Overcurrent Protection Devices (OCPD) are studied, including circuit breakers and fuses. A study of OCPD ampacity sizing, conductor tap rules, and ground-fault protection of equipment is included. Students are expected to apply overcurrent protection methods to solve real world problems.

(1+2)

JAT128 Fire Alarms**1 Cr. Hr.**

This course will study of the installation, programming, and troubleshooting of fire alarm systems. Emphasis is on wiring methods, initiating devices, and notification appliances. There is also a focus on system interfaces, emergency control systems, and voice/alarm communications systems. Supervising stations with single and multiple station alarms are included.

(1+0)

JAT130 Fiber Optics**2 Cr. Hrs.**

This course includes introduction to fiber optic communications and wiring installations. The principles of fiber optics, terminology, transmission systems, and components are emphasized. Topics include optical fiber, fiber-optic cable, connectors, and splices. Applications focus on the design of fiber-optic networks, installation, and testing with implementation at the job site.

(1+2)

JAT170 DC Theory II**3 Cr. Hrs.**

This course is a continuation of DC Theory I. There is a focus on the Principle of Superposition to circuit calculations and Kirchhoff's Laws of voltage, current, single voltage source, and two voltage sources. Thevenin's Theorems and Norton's Theorems are studied, along with magnetism and electromagnetism. There is also an emphasis on DC Generators and Motors and using DC theory to solve real world problems.

(2+2)

JAT172 Distributed Generation**1 Cr. Hr.**

This course will study of information technology sites and applications of Uninterruptible Power Supplies (UPS). Emphasis is on components, installation, and servicing of power systems. There is also a focus is on fuel cell maintenance and troubleshooting.

(1+0)

JAT174 Health Care Systems I**1 Cr. Hr.**

This course will study of wiring in health-related facilities according to general NEC requirements. Emphasis is on patient care protection, wiring in patient care locations, and protection in critical care areas. There is also a focus on nurse call system installation and troubleshooting. Applications include essential electrical systems for hospitals, nursing homes, limited care, and other health care facilities.

(1+0)

JAT175 Health Care Systems II**1 Cr. Hr.**

This course is a continuation of Health Care Systems I, wiring in health-related facilities. Emphasis is on requirements for isolated power systems. Applications include inhalation anesthetizing locations, diagnostic imaging equipment, pools and tubs, and operational facilities.

(1+0)

JAT176 Photovoltaics I**1 Cr. Hr.**

This course is an introduction to photovoltaic systems and the fundamentals of photovoltaic devices. Topics include solar radiation, site surveys and planning, photovoltaic modules and arrays, and inverters. Emphasis also focuses on electrical integration and utility interconnection.

(1+0)

JAT178 Hazardous Locations I**1 Cr. Hr.**

This course will study of hazardous locations in the electrical industry and the types of hazards present. Emphasis is on the background of electrical hazard identification and the classification of hazardous areas. Understanding the requirements for electrical installation in Class I, II, and III locations is a major focus. Students are expected to locate hazardous locations and types of hazards on the job.

(1+0)

JAT180 Motors II 2 Cr. Hrs.

This course is a continuation of Motors I with emphasis on advanced motor systems. Topics include synchronous motors, braking, and multispeed motors. Emphasis also focuses on adjustable-speed drives, clutches, and motor alignment. Students are expected to apply skills to solve real world motor problems. (1+2)

JAT182 Structured Cabling 1 Cr. Hr.

This course introduces the need for structured cabling and TIA/EIA standards. Emphasis is on cabling system performance and safety codes. Topics include unshielded twisted pathways, telecommunications grounding and bonding, and configuring structured cabling systems. Residential telecommunications and UTP cabling systems are also covered. (1+0)

JAT184 Installer/Tech CCTV I 2 Cr. Hrs.

This course introduces surveillance video practices and technology. Emphasis is on video imaging, including image splitting, reversal, and annotation. The use of printers, low light level cameras, and thermal infrared is included. There is also a focus on control room console design, testing, and application solutions. (1+2)

JAT186 Installer/Tech LAN I 2 Cr. Hrs.

This course introduces the basics of networking technologies. Emphasis is on Ethernet basics, the need for security, viruses and monitoring software, and network operating systems. Topics include switches, routers, and storage. There is also a focus on addresses, tools, utilities, protocols, and remote network access. (1+2)

JAT200 Grounding and Bonding I 1 Cr. Hr.

This course covers circuit basics and overcurrent protection. Topics include grounding electrodes and requirements for grounded conductors. There is also a focus on grounding equipment and grounding receptacles. (1+0)

JAT202 Blueprints II 1 Cr. Hr.

This course is a continuation of the first blueprints course. Emphasis is on analyzing drawings and laying out residential circuits. Students also learn to understand job costs, interpret specifications, and effectively use blueprints in wiring systems. (1+0)

JAT204 Electrical Safety II 2 Cr. Hrs.

This course is a continuation of the first electrical safety course. Emphasis is on the control of hazardous energy by understanding the calculation of short circuits, arc flash hazards, and methods to reduce risks. Precautions are studied, including protective equipment and maintenance safety. (1+2)

JAT206 Transformers II 1 Cr. Hr.

This course is a continuation of Transformers I. Emphasis is on real world transformer connections, harmonics, power generation, and power distribution. Reactors, isolation transformers, and autotransformers are also covered. (1+0)

JAT208 Blueprints III 1 Cr. Hr.

This course is a continuation of Blueprints II. Emphasis is on analyzing drawings and laying out industrial circuits. Students will review the understanding of specifications in wiring systems and apply prior knowledge regarding residential wiring schemes to the industrial setting, including more advanced prints and a variety of industrial applications. There is emphasis on applications at industrial job sites. (1+0)

JAT210 Code Calculations I 1 Cr. Hr.

This course is a study of code calculation related to the installation of cable tray systems. Emphasis is on electrical equipment and special equipment which requires surface metallic raceways for wiring. Ampacity of conductors in cable trays is a major focus. Topics covered include electric welders and commercial loads in accordance with the NEC. (1+0)

JAT212 Motor Control I 3 Cr. Hrs.

This course is an introduction to magnetic motor controls and the devices that control and protect motors. Topics include manual pilot devices, automatic pilot devices, and magnetic control relays. Emphasis also focuses on control transformers, basic motor starters, and control timers. Students are expected to apply skills to solve real world motor control problems. (2+2)

JAT214 Motors I 2 Cr. Hrs.

This course is an introduction to DC and AC motors and protection of the motors. Topics include wiring and troubleshooting motors of various types. Emphasis also focuses on motor circuits and motor circuit protection. Students are expected to apply skills to solve real world motor control problems. (1+2)

JAT216 Grounding and Bonding II 2 Cr. Hrs.

This course is a continuation of Grounding and Bonding I. Emphasis is on grounding of electrical systems and requirements for separately driven systems. Topics include special occupancies and equipment, limited-energy systems, ground-fault circuit interrupters (GFCI), and test instruments. Grounding rules for medium and high voltage systems are also covered. (1+2)

JAT218 National Electrical Code IV 2 Cr. Hrs.

This course is a continuation of National Electrical Code III and includes National Electrical Code (NEC) requirements for overcurrent protection of swimming pools, fountains, and similar installations. Types of Overcurrent Protection Devices (OCPD) for water-borne devices are the primary focus. A study of remote-control, signaling, and power-limited circuit protection is included. Students are expected to apply overcurrent protection methods to solve real world problems. (1+2)

JAT220 Motor Control II 2 Cr. Hr.

This course is a continuation of Motor Control I with emphasis on solid state devices used to control motors. Emphasis is on electronic control devices, including relays, starters, programmable timers, and AC motor speed control. Students are expected to apply control principles to real work situations with motors. (1+2)

JAT222 Rigging, Hoisting, and Signaling 1 Cr. Hr.

This course will focus on the principles of properly rigging devices for lifting various loads. Emphasis is on tying knots, rigging equipment, and properly hoisting loads. Topics include the use of slings, chains, and block and tackle hoists, as well as proper hand signals. Students are expected to apply rigging and hoisting principles to real work situations.

(1+0)

JAT224 Code Calculations 1 Cr. Hr.

This course is a continuation of Code Calculations I. Emphasis is on conductor ampacity, ampacity calculations, box size calculations, box fill calculations, raceway fill calculations, electrical load calculations, and range and appliance calculations. Topics covered include parameters of multifamily dwellings, and commercial loads in accordance with the NEC.

(1+0)

JAT270 Transformers III 1 Cr. Hr.

This course is a continuation of Transformers II. Emphasis is on special transformers and special connections. Topics covered include electrical safety, buck-boost transformers, three-phase buck-boost transformers, and installation. Maintenance and troubleshooting of transformers are also included.

(1+0)

JAT272 Motor Control III 1 Cr. Hr.

This course is a continuation of Motor Control II with emphasis on advanced devices used to control motors. Emphasis is on variable frequency drives, programmable logic controllers, and troubleshooting control systems. Students are expected to apply control principles to real work situations with motors.

(1+0)

JAT274 Instrumentation 2 Cr. Hrs.

This course will study of instrumentation, including installation, monitoring, calibration, maintenance, and troubleshooting. Fundamentals of pressure, flow, level, and temperature are studied. There is emphasis on pneumatics, control valve actuators, instrument tubing, and control systems.

(1+2)

JAT276 Programmable Logic Controllers 2 Cr. Hrs.

This course will study of programmable logic controllers. Emphasis is on input devices, output actuators, programming, timers, and counters. The application of arithmetic instructions, move instructions, BCD conversion, and comparison instructions are included. There is also a focus on data handling and manipulation, PLC sequencer functions, analog sensors, control systems, intermittent and continuous process control, and industrial networks. Students also use PLC Standard IEC Structured Text Language and PLC Standard IEC Sequential Function Charts.

(1+2)

JAT278 Electrical Project Supervision 1 Cr. Hr.

This course will study of the supervisor's role in leading electrical projects. Emphasis is on team building, communications, job site documentation, employee relations, and safety fundamentals. Topics include managing the contract, understanding the estimate, and management of tools and materials. There is also a focus on effective planning and scheduling to manage a project.

(1+0)

MEA101 Medical Assisting Clinical I 3 Cr. Hrs.

This course is designed to provide the basic knowledge for assisting physicians or medical office staff with medical exam room preparation, routine patient examination preparation, as well as assisting with basic clinical procedures. The basic concepts of ethical practice and decision making will be introduced

(1+4)

Co-requisites: BIO150 and MEA105, MEA108

MEA105 Laboratory Techniques 3 Cr. Hrs.

This course introduces basic principles of laboratory safety, infection control; biological and chemical hygiene associated with CLIA waived testing techniques. Topics covered include the proper collection and processing of blood and non-blood specimens for therapeutic treatment, diagnostic procedures, or analysis. Identifying normal versus abnormal laboratory values, the purpose of common tests, and proper documentation procedures as well as common clinical complications associated with such practices will also be reviewed.

(2+2)

Prerequisite: HS Biology with a "C" or better or BIO 101 with a "C" or better

MEA108 Administrative Medical Office 3 Cr. Hrs.

This course will provide a basic understanding of the administrative duties and responsibilities that pertain to the medical office. Students are introduced to the basic operation and maintenance of office equipment, inventory and supply. Application of computer usage within the health care setting, including simulated data entry for patients' medical and financial records, appointment scheduling, and other office transactions. Emphasis placed upon the professional role and communication with patients and members of the health care team.

(2+2)

Co-requisite: OAS101 or CIS114, ENG111

MEA110 Pharmacology for a Allied Health Professional 3 Cr. Hrs.

The most common medications used and prescribed in a physician's office are studied. The actions, side effects, contraindications, and administration implications are emphasized. Content related to writing prescriptions, storing of meds, handling of narcotics and searching of pharmaceutical references is included.

(3+0)

Prerequisite: MTH079 or MTH080

Co-requisite: BIO150

MEA200 Medical Assisting Administrative Externship 4 Cr. Hrs.

This course provides opportunities to observe, perform, and discuss various administrative competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals.

(3+6)

Prerequisite: MEA201, OAS111, MEA283

MEA201 Medical Assisting Clinical II 3 Cr. Hrs.

Clinical II is a continuation of Clinical I. Following the Clinical II experience students will be able to administer enteral and parenteral medication (excluding IV), accurately document medication administration, explain and perform ECGs, explain and perform basic respiratory diagnostic testing, demonstrate use of oxygen therapy equipment, respond to emergency situations in a physician office setting, describe an ethical decision making process relating to issues throughout the human lifespan, and discuss professionalism and interview skills as related to a job search

(1+4)

Prerequisites: MEA101, MEA105

Co-requisites: MEA110, MEA205

MEA202 Medical Assisting Clinical Externship/CMA Review 4 Cr. Hrs.

This course provides opportunities to observe, perform, and discuss various clinical competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals. This course will also review the following basic principles of psychology as they apply to the medical assistant: developmental stages of the life cycle, hereditary, cultural and environmental influences on behavior, mental health and applied psychology. In addition, this course addresses the preparation for the Certified Medical Assisting Exam, including a review of all three components of the CMA exam. This course presents an explanation of how the exam is scored and provides opportunities to take practice exams.

(3+6)

Prerequisites: MEA 201

Corequisites: MEA 200

MEA205 Disease Conditions 3 Cr. Hrs.

This course presents the basic concepts of diseases, their courses and function disturbances as they relate to body systems. This course includes the precipitating risk factors and appropriate methods of patient education regarding various disease processes.

(3+0)

Prerequisite: BIO150

MEA207 Phlebotomy Externship 6 Cr. Hrs.

This course provides the opportunity to discuss and perform phlebotomy procedures under supervision. The learning experiences will be obtained in selected laboratories, physician offices, clinics or hospitals.

(3+9)

Prerequisites: MEA105, MEA108, and BIO150 or BIO232

MEA229 Diagnostic and Procedural Coding 4 Cr. Hrs.

This course gives the student an introduction to the diagnostic and procedural coding processes for health insurance reimbursement purposes using the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) systems. Students develop an understanding of the format and organization of coding system manuals, and the conventions that guide their use. Students will use their knowledge of medical terminology, anatomy and physiology, disease conditions, and pharmacology to correctly assign diagnostic and procedural codes from documentation that link diagnoses to procedures performed.

(4+0)

Prerequisite: OAS180 and BIO 150 or BIO 232

Co-Requisite: MEA 205 and MEA 110

MEA283 Computerized Medical Insurance 3 Cr. Hrs.

This is a course that will cover the fundamentals of using medical office management software which includes: inputting patient data, processing insurance claims and payments, scheduling appointments, and printing medical reports. The computer skills gained will enable students to cross over to the workplace and use medical software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).

(3+0)

Co-rerequisite: OAS/MEA229

MET099 Engineering Math 3.5 Cr. Hrs.

The objective of this course is to increase students preparedness in basic algebra and trigonometry skills used in engineering. These concepts will be reviewed, refreshed, and mastered through application to engineering problems. This course is designed for students who have had some algebra and need a review of specific mathematical topics to prepare them for the engineering technologies course sequence.

(3+1)

Prerequisite: MTH080 or H.S. Algebra II with "C" or better

MET100 Intro to Engineering Technology 2-3 Cr. Hrs.

This course introduces the field of engineering to the student who is interested in engineering technologies. It explores multiple disciplines and careers available. Additionally, the student will solidify knowledge of basic mathematics, measurement systems, and computer skills necessary to succeed in an engineering environment.

(2 or 3+0)

Prerequisite: MTH050

MET107 Engineering Graphics & Sketching 3 Cr. Hrs.

Engineering Graphics and Sketching includes the introduction of various different types of Engineering drawings. Also the construction of various sketches of 3D parts using proper Orthographic Projection, Geometric Construction, Auxiliary Views, and Section Views will also be completed.

(3+0)

MET121 Manufacturing Processes 3 Cr. Hrs.

The focus of this course is to provide the student with an introduction to the theory of the common major manufacturing processes. The major manufacturing processes (methods used to convert raw materials into finished products) are described and compared. Emphasis is placed on how each process works and its relative advantages and disadvantages. Students will have the opportunity to observe processes via field trips as such opportunities are available. Transfer Assurance Guide (TAG) approved effective summer 2008 (OET110 - Manufacturing Processes).

(3+0)

MET134 Engineering Materials 3 Cr. Hrs.

This course combines major elements of ferrous and non-ferrous metallurgy with polymeric materials, organics and refractories. Student learns basic physical and chemical properties of common engineering materials and their design considerations. Transfer Assurance Guide (TAG) approved effective spring 2013 (OET013 - Engineering Materials).

(3+0)

144

MET222 Programming Computer Numerical Control 3 Cr. Hrs.

The student will view a blueprint of a mechanical part to determine the datum, the order of operations and appropriate fixtures to make the part in a CNC machine. G & M code programs will be written and loaded to the CNC mill or lathe which will create the machined surfaces of the part. Conversational programming will be demonstrated. A familiarity with geometry, trigonometry, computers, and CAD is helpful.

(2+3)

Prerequisites: IND140, or instructor permission

MET223 CAM I 4 Cr. Hrs.

This course is a study in the basic fundamentals of Computer-Aided-Manufacturing-Machining (CAM). The student will become proficient in the use of manipulating CAM software in a hands-on environment. Datums, tool selection, speeds, feeds, and part identification will be emphasized.

(3+3)

Prerequisites: MET222 or instructor permission

MET234 Strength of Materials 3 Cr. Hrs.

Learn how to analyze the mechanical and thermal loads on structures, beams, and columns, and how to calculate stress, strain, and deflection. Application of formulas and design considerations are stressed. Transfer Assurance Guide (TAG) approved effective spring 2008 (OET008 - Strength of Materials).

(3+0)

Prerequisites: MET235 and PHY251

MET235 Statics 3 Cr. Hrs.

A study of resolution of forces on rigid bodies using conditions of equilibrium and vector analysis. Includes the analysis of trusses, friction, and moments of inertia. Transfer Assurance Guide (TAG) approved effective spring 2008 (OET007 - Statics).

(2+2)

Prerequisite: PHY251

MET255 Fluid Mechanics 3 Cr. Hrs.

Fluid power is an efficient way to move energy without mechanical belts, chains, or levers. The physics of fluids, components, troubleshooting, and design applications for hydraulic and pneumatic systems are covered in this class. This class will introduce the student to both hydraulic and pneumatic components. This course will simulate an industrial environment; following all safety procedures will be required. Everyone will wear safety glasses while working in the lab! Failure to comply will result in not being able to work in lab and therefore lowering your lab grade(s). Transfer Assurance Guide (TAG) approved effective spring 2009 (OET009 - Fluid Mechanics).

(2+2)

Prerequisite: PHY251

MET260 CAM II 3 Cr. Hrs.

CAM II is a continuation of CAM I. This is an advanced course that introduces the student to Advanced milling, Solids, Surfaces, and 3D cutter-pathing. Lathe and 4th and 5th axis programming will be introduced as time allows. 3D drawings, solids and surfaces will be created by the student. Toolpaths and NC files will be created to the 3D drawings, solids and surfaces. The tool paths created will be used to create a part on a CNC machining center.

(2+2)

Prerequisite: MET223

MET262 CAD/CAM Project 4 Cr. Hrs.

This is a capstone class that requires the student to design, fabricate and test a working machine component. Solid Modeling and CAM technology will be the focus, with supporting CMM technology. The students will be required to apply the technology they learned in individual technology classes.

(3+2)

Prerequisites: CAD213, MET223, and QCT141

MET265 Machine Design 3 Cr. Hrs.

This course is designed to assist students with the basic approach to machine design through the analysis of static and dynamic stresses. The course will focus on the strength of materials and how they relate to machine design. Design projects will be included.

(3+0)

Prerequisite: PHY251

MET290 Engineering Technology Co-op/Internship 1-4 Cr. Hrs.

The Co-op/Internship is a job-related experience in which the student works in a position consistent with the program major. The student is expected to integrate skills learned in the educational program with job responsibilities, while applying work experience to classroom activities. Primary work duties are documented through a work log, incident summary, and a focused report. Enrollment only with permission of the instructor.

MGT110 Management 3 Cr. Hrs.

This course focuses on the principles of coordinating an organization's objectives. Major emphasis is devoted to the four management functions: planning, organizing, leading, and controlling. Issues such as decision making, communication, motivation, leadership, diversity, social responsibility and ethics, and global management are addressed.

(3+0)

MGT120 Supervision 3 Cr. Hrs.

This course focuses on the supervisor/employee relationship. Primary topics include motivation, goal setting, performance appraisal, and management of a team of employees.

(3+0)

MGT121 Entrepreneurship I 3 Cr. Hrs.

This course provides an overview of Entrepreneurship. It introduces students to a rewarding and challenging career as an entrepreneur and small business owner. This course discusses innovative approaches in starting, acquiring, succeeding and franchising. The course provides a foundation for small business and an overview of business concepts such as theories of entrepreneurship, types and characteristics of entrepreneurship, the business life cycle, entrepreneurial economics, accounting and financial management, legal issues, marketing research and planning human resource management, ethics and social responsibility, product and service research development and acquisition and the use of technology.

(3+0)

MGT210 Human Resource Management 3 Cr. Hrs.

This course is a study of personnel management. Major topics include planning, job design, recruitment, employee selection, training, performance appraisal, and contract administration. Safety and government regulations are included.

(3+0)

MGT221 Entrepreneurship 3 Cr. Hrs.

This course is a study of opportunities and challenges facing entrepreneurs in a dynamic marketplace. Topics include recognizing and exploiting viable business opportunities, writing a business plan, managing inventory, cash management, employee management (including hiring, training, and evaluation), marketing, and using technology. Emphasis is placed on self-employment and the issues of efficiently and effectively running a business.

(3+0)

MGT230 Retail Management 3 Cr. Hrs.

This course focuses on strategic and tactical issues for retailers, both large and small, domestic and international, selling both merchandise and services. Emphasis is placed on financial considerations and implementation through merchandise and store management.

(3+0)

MGT280 Business Climate Analysis 3 Cr. Hrs.

This course includes research, analysis, and summary of the business climate in a specific region. Students will assess regional, cultural, political, commercial, and financial issues. They will also investigate availability of labor, manufacturing, transportation, and technological resources. Students work on a team to collect information and develop a report which answers the question, "How To Do Business?" in that region. The finished product will be presented by a team of students.

(3+0)

Prerequisites: ACC111, ECO212, ENG112, MKT110, and MGT110 or BAN110

Co-requisite: MGT230

MGT281 Global Business Climate Analysis 3 Cr. Hrs.

This course includes research, analysis, and summary of the business climate in a specific region. Students will assess regional, cultural, political, commercial, and financial issues. They will also investigate availability of manufacturing, transportation, labor, and technological resources. Students are required to travel to the international region and develop a Business Climate Summary. The finished product will be developed and presented by a team of students.

(3+0)

MGT290 Business Management Internship 1-3 Cr. Hrs.

This is a management experience related to the student's program of study. The student is accepted on the basis of academic progress and available work site. Enrollment only with instructor permission.

(1+20)

MKT110 Marketing 3 Cr. Hrs.

Marketing is an introductory course that exposes the student to the "marketing mix" (product, price, promotion, distribution). Topics include the global environment and social and ethical responsibilities; using technology and information to build customer relationships; target markets and customer behavior; product decisions; distribution decisions; promotion decisions; and pricing decisions. The topics are looked at from the profit and nonprofit viewpoint. Global as well as domestic strategies are examined. The student is introduced to the above topics through lecture, textbook readings, electronic media presentations, classroom discussions, and a team marketing project. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU006 - Principles of Marketing Management).

(3+0)

Co-requisite: ECO212

MKT210 Advertising 3 Cr. Hrs.

This course is a comprehensive analysis of the world of advertising and sales promotion. An understanding of the various modes of communications used in an advertising campaign and the importance of integration for advertising success will be stressed.

(3+0)

MKT230 Salesmanship 3 Cr. Hrs.

This course focuses on many aspects of personal selling including both customer and buyer relationships, communication skills, prospecting, sales presentations, and sales management.

(3+0)

MTH050 Basic Mathematics 4 Cr. Hrs.

Designed to improve basic computational skills, as well as introduce the student to computational techniques related to their degree and preliminary algebraic concepts. The material will cover operations with whole numbers, fractions, decimals, ratio and proportions, percentages, integers, and application problems.

(4+0)

MTH078 Beginning Algebra I 3 Cr. Hrs.

This is the first part of a two-course sequence designed for students with no previous algebra experience or low confidence in their ability to succeed in an algebra class. The course introduces the properties, rules and basic techniques of algebra as well as translation between English and the language of algebra. Topics include integers and operations, variables and algebraic expressions, linear equations, graphing, and systems of equations. MTH078 and MTH079 cover the same material as MTH080, but at slower pace.

(3+0)

Prerequisite: MTH050, high school equivalent, or satisfactory score on Course Placement Test.

MTH079 Beginning Algebra II 3 Cr. Hrs.

This is the second part of a two-course sequence designed for students with no previous algebra experience. New topics include exponents and polynomials, factoring, solving quadratic equations and applications, and rational expressions.

(3+0)

Pre-requisite: MTH 050, high school equivalent, or satisfactory score on Course Placement Test.

MTH080 Review of Beginning Algebra 4 Cr. Hrs.
This is an intensive first course in algebra. It is recommended only for students who are confident in their math skills or need a review of basic algebraic techniques before taking MTH090. The course introduces the properties, rules and basic techniques of algebra as well as translation between English and the language of algebra. Topics include linear equations, polynomials, factoring, graphing, systems of equations, and rational expressions. (4+0)
Pre-requisite: MTH050, high school equivalent, or satisfactory score on Course Placement Test.

MTH090 Intermediate Algebra 3 Cr. Hrs.
Intended for those students who have passed a previous algebra class. Designed to review topics introduced in MTH080 but at an accelerated pace and with more depth and rigor. Introduces many new topics including functions, several types of inequalities, radical expressions and equations, rational exponents, complex numbers, and quadratic equations including completing the square and the quadratic formula. (3+0)
Prerequisite: MTH079 or MTH080, high school equivalent, or satisfactory score on Course Placement Test.

MTH099 Engineering Math 3.5 Cr. Hrs.
The objective of this course is to increase students preparedness in basic algebra and trigonometry skills used in engineering. These concepts will be reviewed, refreshed, and mastered through application to engineering problems. This course is designed for students who have had some algebra and need a review of specific mathematical topics to prepare them for the engineering technologies course sequence. (3+1)
Prerequisite: MTH080 or H.S. Algebra II with "C" or better

MTH105 Quantitative Reasoning 3 Cr. Hrs.
The Quantitative Reasoning course is an alternative college-level mathematics pathway for students whose majors are neither calculus-based nor statistics-based. Course content is driven by the mathematical competencies of numeracy (logic; critical thinking and problem solving; rates, ratios, proportions, and percentages; personal finance), mathematical modeling (functions, linear and exponential models, logarithms), and probability and statistics (sampling strategies and bias, descriptive statistics, graphic displays of data, probabilities, risk assessment). Emphasis is placed on interpreting calculations and conveying results to others. (3+0)

MTH109 College Algebra 3 Cr. Hrs.
Students successfully completing this class will be able to solve quadratic equations by factoring, completing the square, and using the quadratic formula. They will also be familiar with complex numbers and solving rational equations. College Algebra topics include: polynomial, rational, exponential, and logarithmic functions and graphs. Equations and inequalities are covered including solutions of systems of equations. Application problems build skills in problem solving. (Ohio Transfer Module TMM001 approved). (3+0)
Prerequisite: MTH090 or satisfactory score on the Course Placement Test

MTH112 Trigonometry 3 Cr. Hrs.
This course is designed to follow MTH109 and replaces MTH110. Topics include both right triangle and circle definitions, solving all types of triangles, trigonometric identities and equations, selected vector and complex number problems, and the polar coordinate system. (Ohio Transfer Module TMM003 approved) (3+0)
Co-requisite: MTH109 or satisfactory score on the Course Placement Test.

MTH151 Mathematics Review for Calculus 1 Cr. Hr.
This course is a review of algebra, trigonometry, and graphing calculator skills necessary for success in the Calculus sequence. Students completed MTH109 and MTH112 previously or a pre-calculus sequence in high school but have been away from the material for a time will have a chance to refresh their skills to make learning new material in Calculus easier. In addition students who are uncertain of the level of their preparation will benefit from taking this course before they attempt Calculus. Topics include an extensive review of algebraic manipulation skills, solving degree 1 and 2 equations, rational equations, exponential and logarithmic equations, functions and their graphs, composition and decomposition of functions, trigonometric functions and equations. (1+0)
Prerequisite: MTH109 and MTH112, high school equivalent pre-Calculus preparation, or permission of the instructor

MTH170 Survey of Mathematics 3 Cr. Hrs.
This course presents a variety of mathematical ideas and concepts to give students an idea of the breadth and vitality of mathematics. Among others, topics will include geometry, number theory, statistics and probability. Although some manipulative techniques will be reviewed, this course is not intended for improvement of algebra skills or other specific content. Instead the emphasis is on understanding how fundamental concepts of mathematics work together as a unified whole. This course is specific to education majors preparing for early childhood or middle grade teaching. (3+0) F
Prerequisite: MTH080, high school equivalent, or satisfactory score on Course Placement Test

MTH213 Calculus I 5 Cr. Hrs.
Designed for those students who have mastered algebra and trigonometry and who are planning to pursue a four-year degree program. Topics include a review of functions, limits, derivatives of algebraic and transcendental functions, applications of derivative, and an introduction to integrals. Transfer Assurance Guide (TAG) approved effective fall 2005 (OMT005 - Calculus I and OMT017 - Calculus I and II Sequence, Course 1 of 2). (Ohio Transfer Module TMM005 approved) (5+0)
Prerequisites: MTH112 or MTH122, or satisfactory score on the Course Placement Test

MTH214 Calculus II 5 Cr. Hrs.

This course is designed for those students who have completed MTH213. Topics include techniques of integration, applications of integrals, sequences and series, introduction to differential equations, conics, and parametric and polar graphing. Transfer Assurance Guide (TAG) approved effective fall 2005 (OMT006 - Calculus II and OMT017 - Calculus I and II Sequence, Course 2 of 2). (Ohio Transfer Module TMM006 approved) (5+0)

Prerequisite: MTH213

MUS120 Chorus 3 Cr. Hrs.

This course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (3+0)

MUS121 Beginning Chorus 1 Cr. Hr.

This beginning course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)

MUS122 Intermediate Chorus 1 Cr. Hr.

This intermediate course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)

MUS123 Advanced Chorus 1 Cr. Hr.

This advanced course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)

NRS100 Nurse Aide Certificate 4 Cr. Hrs.

This course will prepare students for employment as a nurse aide. Students are eligible to take the state certification exam upon successful completion of program. This course is taught in cooperation with Four County Career Center and Vantage Career Center and includes 24 clinical hours held at a local long term healthcare facility. (3.5+0.5)

NRS105 Math for Nurses 1 Cr. Hr.

This math course is designed for the student who will be in a nursing health care technology. It includes study of metric, apothecary, and household systems of weights and measures relating to the calculation and administration of medications. The course emphasizes solving oral and parenteral drug dosage problems as they might occur in the clinical area. (1+0)

Prerequisite: MTH080

NRS108 Nursing Care of Clients with Physiological Health Needs I 6 Cr. Hrs.

The course provides for the development and application of concepts of nursing for assisting clients in adapting to the physiological mode and related health needs. (3+9)

Prerequisites: NRS106, NRS107, BIO231, ENG111, PSY110
Co-requisites: NRS110, NRS131, BIO232, PSY230

NRS110 Pharmacology 3 Cr. Hrs.

This course focuses on pharmacological theory of broad classifications of common medications in current use with application to nursing. This course includes federal drug legislation and the responsibility of drug administration. (3+0)

Prerequisite: NRS106 and NRS107 or PNE120 or permission of Nursing Department

NRS111 Pharmacology I 1.5 Cr. Hrs.

Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This is the first part of a 2-course sequence equating to NRS110. (1.5 + 0)

Prerequisite: PNE120

NRS112 Pharmacology II 1.5 Cr. Hrs.

Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This course is the 2nd part of a 2-course sequence equating to NRS110. (1.5 + 0)

Prerequisite: PNE120 and NRS111

NRS131 Health Assessment in Nursing 2 Cr. Hrs.

The course focuses on the application of the nursing process related to physical assessment and history taking skills with emphasis on the adult client. (1+3)

Prerequisites: NRS106, NRS107, BIO231, and ENG111
Co-requisite: BIO232

NRS133 Cardiopulmonary Resuscitation 1 Cr. Hr.

A basic course in cardiopulmonary resuscitation for cardiac arrest and respiratory emergencies. Includes infant, child, adult, and two-man CPR. Certificate issued upon completion. (1+0)

NRS140 Professional Concept I 1 Cr. Hr.

This course introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as professional identity, nursing process, technology, health promotion, patient education, communication, ethics and safety. (1+0)

Prerequisites: ENG111, PSY110, BIO231

Co requisites: NRS141, NRS144, BIO232

NRS141 Health & Illness Concepts I 6 Cr. Hrs.
This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply basic care concepts such as nutrition, elimination, inflammation, infection, mobility, pain and sleep. The concepts will be applied in theory, lab and clinical settings.

(3+9)

Prerequisites: ENG111, PSY110, BIO231

Co requisites: NRS 140, NRS144, BIO232

NRS142 Professional Concepts II 1 Cr. Hr.

This course introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as development, functional ability, culture, spirituality, care coordination, collaboration, health care organizations, health care law and health care economy and policy.

(1+0)

Prerequisites: NRS140, NRS141, NRS144, BIO 232

Co requisites: NRS143, BIO234, BIO131

NRS143 Health & Illness Concepts II 7 Cr. Hrs.

This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply concepts such as hormonal, cellular and thermal regulation, immunity, fluid and electrolytes, acid-base and stress and coping. The concepts will be applied in theory, lab and clinical settings.

(3+12)

Prerequisites: NRS140, NRS141, NRS144, BIO232

Co requisites: NRS142, BIO234, BIO131

NRS144 Pharmacology 2 Cr. Hrs.

This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the nursing process when administering medications, including dosage calculation. This course provides the student with a foundation in pharmacology for application of concepts in nursing practice.

(2+0)

Prerequisites: Admission to the nursing program

Co requisites: NRS140, NRS141, BIO232

NRS150 Concepts in End of Life Care 1 Cr. Hr.

This course provides an overview of the knowledge necessary to provide optimal holistic care to clients at the end of life. Content covers the essential aspects of physical, psychosocial, and emotional nursing care as applied to clients and their families.

(1+0)

Prerequisite: Admission to Nursing Program

NRS207 Nursing Care of the Family Throughout Pregnancy 2 Cr. Hrs.

This course will substitute for NRS213 for the LPN graduate who is not successful on the Nursing Care During Childbearing NLN NACE I Exam. This course focuses on the development and application of knowledge and skills in providing care for the pregnant woman and childbearing family throughout pregnancy: prenatal, intrapartal, postpartal and neonatal periods. The nursing process is used to assist in providing nursing care for clients and their families throughout the maternity cycle in adapting to their changing roles.

(2+0)

Prerequisite: Permission by Nursing Department

NRS208 Nursing Care of the Family with Children 2 Cr. Hrs.

This course is designed for the LPN graduate who was not successful on the Nursing Care of the Child NLN NACE I Exam. This course will focus on the development and application of knowledge and skills in providing family-centered care for well and sick children as well as anticipatory guidance for their families. Application of Growth and Development principles within the nursing process is emphasized.

(2+0)

Prerequisite: Permission by Nursing Department

NRS209 Nursing Care During Childbearing and Childhood 3 Cr. Hrs.

This course will substitute for NRS213 & NRS214 for the LPN graduate who is not successful on the Nursing Care During Childbearing and Nursing Care of the Child NLN NACE I Exams. This course focuses on the development and application of knowledge and skills in providing care for the childbearing family. The nursing process is used to assist clients of the developing family to adapt to their changing role.

(3+0)

Prerequisite: Permission by Nursing Department

NRS211 LPN to RN Transition 3 Cr. Hrs.

This three-credit hour course is designed to enable the student to explore integrative concepts in nursing and to assist the student in the transition from licensed practical nurse to registered nurse. Students refine and update previous learning in addition to identifying goals for a successful transition into the registered nursing program. Combined with classroom and nursing laboratory experience, the student learns through the application of concepts. The student will demonstrate the ability to solve problems through the use of the nursing process with a focus on client assessment and to communicate more effectively. This course meets requirements of the Ohio Nursing Articulation Model.

(2+2)

Prerequisite: Admission to the Nursing Program

NRS212 LPN to RN Bridge Course 1 Cr. Hr.

This course is designed to meet the needs of the LPN who will be entering the Associate Degree Program at the second level. The focus of the course will be on the Roy Adaptation Model for Nursing and its use within the nursing process, and utilization of computers within nursing.

(1+0)

NRS213 Nursing Care of the Childbearing Family 3 Cr. Hrs.

This course focuses on the development and application of knowledge and skills in providing care for the mother/parents and newborn. The nursing process is used to assist clients of the developing family to adapt to their changing role.

(3+9)

Prerequisites: NRS108, PSY230, NRS131 and NRS110

NRS214 Nursing Care of the Childrearing Family 3 Cr. Hrs.

This course focuses on the development and application of knowledge and skills in providing care for the child and the childrearing family. The nursing process is used to assist clients of the developing family to adapt to their changing role.

(3+9)

Prerequisites: NRS108, PSY230, NRS131, and NRS110

NRS215 Nursing Care of Clients with Psychosocial Health Needs 5 Cr. Hrs.

The focus is on the development and application of knowledge and skills in providing nursing care to clients with common psychological health needs within a variety of settings.

(3+6)

Prerequisites: NRS131, PSY110, NRS110 and NRS108 or NRS211/212

NRS216 Nursing Care Of Clients with Physiological Health Needs II 3 Cr. Hrs.

The focus is on the development and application of knowledge and skills in providing nursing care to clients with common long-term physiological health needs within a variety of settings.

(1+6)

Prerequisite: NRS131, NRS110 and NRS108 or NRS211/212

Co-requisite: BIO257 and PHI220

NRS217 Nursing Care of Clients with Physiological Health Needs III 5 Cr. Hrs.

The course provides for further development and application of concepts of nursing for assisting clients in adapting to the physiologic mode and related health needs.

(3+6)

Prerequisites: NRS213, NRS214, NRS215, and NRS216

Co-requisite: STA120, ENG112

NRS218 Concepts in Management Groups of Clients 4 Cr. Hrs.

This course provides an introduction to the skills and knowledge necessary to manage care of a group of clients in a cost effective manner. Content includes organization of care, principles of working with others, concepts of leadership, research, management and organizational structure. Current issues in the political and cultural systems which impact the nursing profession are examined. The transition from student to practitioner is facilitated through course concepts and clinical placement.

(1+9)

Prerequisites: NRS213, NRS214, NRS215, and NRS216

Co-requisites: NRS217, STA120 and ENG112

NRS220 Special Problems in Nursing I 1-4 Cr. Hrs.

An independent study which focuses on a topic or selected problem in nursing, subject to the approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of the Dean of Nursing

NRS221 Special Problems in Nursing II 1-4 Cr. Hrs.

An independent study which focuses on a topic or selected problem in nursing, subject to the approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of Dean of Nursing

NRS230 Transition to Professional Concepts in Nursing 2 Cr. Hrs.

This course will assist the student in transition from licensed practical nurse to registered nurse. It introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as professional identity, leadership and clinical judgment, scope of RN practice, ethics, care coordination, collaboration, informatics and health care economics, policy and law.

(2+0)

Prerequisites: Admission to the LPN to RN program

Co requisites: NRS231, BIO234

NRS231 Transition to Health & Illness Concepts II 5 Cr. Hrs.

This course will assist the student in transition from the licensed practical nurse to registered nurse. It introduces the student to concepts of nursing with emphasis on health and illness. The student will apply concepts such as cellular, intracranial and hormonal regulation, immunity, fluid and electrolytes, acid-base and stress and coping. The concepts will be applied in theory, lab and clinical settings.

(3+6)

Prerequisites: Admission to the LPN to RN program

Co requisites: NRS230, BIO234

NRS240 Professional Concepts III 1 Cr. Hrs.

In this course the student will examine exemplars, reflecting problems or issues related to previously introduced concepts relevant to the professional nurse and patient-centered care.

(1+0)

Prerequisites: NRS142, NRS143 or NRS230, NRS231 and BIO234, BIO131

Co requisites: NRS241, BIO257, PSY230

NRS241 Health & Illness Concepts III 8 Cr. Hrs.

This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply concepts such as anxiety, mood, cognition, psychosis, sexuality and reproduction. Exemplars, reflecting problems or issues related to previously introduced concepts will be examined. The concepts will be applied in theory, lab, and clinical settings.

(4+12)

Prerequisites: NRS142, NRS143, or NRS230, NRS231 and BIO131, BIO234

Co requisites: NRS240, BIO257, PSY230

NRS242 Professional Concepts IV 1 Cr. Hr.

In this course the student will continue to examine concepts and exemplars, reflecting problems or issues related to previously introduced concepts relevant to the professional nurse and patient-centered care.

(1+0)

Prerequisites: NRS240, NRS241, BIO257, PSY230

Co requisites: NRS243, STA120

150

NRS243 Health & Illness Concepts IV 8 Cr. Hrs.
 In this course the student will examine exemplars, reflecting problems or issues related to previously introduced concepts of nursing with the emphasis on health and illness. The concepts will be applied in theory, lab, and clinical settings.
 (4+12)
 Prerequisites: NRS240, BIO257, PSY230
 Co requisites: NRS242, STA120

NRS298 Special Topics 1 Cr. Hr.
 This course is an elective course designed to supplement the learning of current nursing students. It is a seminar course which focuses on current trends or issues affecting nursing practice.
 (1+0)
 Prerequisite: Enrollment in Nursing Clinical Course

OAS090 Keyboarding Basics 1 Cr. Hr.
 This is a beginning keyboarding course on the computer designed for students in any program. Major objectives are to develop touch control of the keyboard and proper typing techniques, while building basic speed and accuracy. This course is useful for beginning keyboarding students as well as those who want to review the basics of the computer keyboard.
 (0+2)
 Course Placement Test is available

OAS101 Business Document Formatting & Skillbuilding 3 Cr. Hrs.
 This course introduces students to basic keyboarding and formatting techniques, editing and proofreading of keyed copy, and the development of key stroking accuracy and speed. Correct format for keying business documents will be stressed.
 (3+0)
 Prerequisite: CIS090 and OAS090 or Satisfactory Score on Course Placement Tests

OAS102 Advanced Business Document Formatting & Skillbuilding 3 Cr. Hrs.
 This is a comprehensive course based on the knowledge and skills necessary to perform duties in a modern office. Advanced keyboarding, refinement of formatting and editing of business documents using computer software, improved communication skills, and the continued development of higher keystroking accuracy and speed will be stressed. Practical experiences and simulated work experiences are included.
 (3+0)
 Prerequisite: OAS101

OAS103 Office Accounting 3 Cr. Hrs.
 This course is designed for Office Administrative Services and Early Childhood Development majors. It may not be used as a substitute for ACC111. The primary emphasis of this course will be on a sole proprietorship operating a service business and a merchandising business. The course includes a study of the accounting cycle, beginning with the business transaction and ending with the preparation of the financial statements and all of the necessary end of the period procedures. Other topics include bank reconciliations, petty cash funds, and cash change funds. Considerable emphasis will also be placed on payroll. Students will be able to calculate payrolls and be familiar with all of the necessary payroll forms.
 (3+0)

OAS104 Voice Recognition 1 Cr. Hr.
 This is a hands-on course introducing the student to the use of speech recognition technology in the office. Topics include but are not limited to setting up the speech recognition software, building vocabulary files, basic dictation skills, creating and editing documents, cursor control, and detecting recognition errors.
 (0+2)
 Prerequisites: CIS090 and OAS090 or Satisfactory Score on Course Placement Tests

OAS105 Document Editing and Proofreading 2 Cr. Hrs.
 This is a course in which the students develop skills in proofreading, editing, and formatting written business communications. Topics covered include use of possessives, spelling, capitalization, subject-verb agreement, pronouns, adjectives, verbs, sentence structure and wording, as well as proper use of punctuation marks. The student will be more proficient in proofreading documents keyed in any word processing program on the computer. Editing of documents using proofreader's marks will also be stressed. There is no prerequisite, although basic computer knowledge will be helpful in completing at-the-computer editing projects.
 (2+0)

OAS110 Records Management 3 Cr. Hrs.
 This is a course in the field of records management emphasizing principles and practices for manual and automated records systems. A practice set is used in which students practice card filing and correspondence filing using the alphabetic, subject, numeric and geographic filing systems. Computer applications are used in applying alphabetic indexing rules to a computer records database.
 (3+0)

OAS111 Electronic Health Records 3 Cr. Hrs.
 This course will give students an understanding of practical knowledge of managing Electronic Health Records (EHR). It will give students a hands-on experience using SpringCharts EHR. This course will also familiarize students with the basic operations utilizing managerial features of SpringCharts including patient scheduling, tracking patient activity, and sending and receiving reminders, messages, and emails.
 (3+0)
 Co-rerequisite: OAS/MEA229

OAS160 Administrative Technology & Procedures 3 Cr. Hrs.
 This class is designed to emphasize the roles and responsibilities of an effective administrative assistant such as professionalism; effective verbal and written communications; time, stress, and anger management; office supplies and inventory; travel arrangements; meetings and conferences; ethical behavior; customer service; workplace teams, and more. Self-development and problem solving are also included in this course.
 (3+0)
 Co-requisite: ENG111

OAS180 Medical Terminology 3 Cr. Hrs.
This is a study of prefixes, suffixes, and word roots used in developing a medical vocabulary. Special emphasis is placed upon the usage, spelling, and pronunciation of these terms as they apply to the major body systems in terms of health and disease. Transfer Assurance Guide (TAG) approved effective summer 2007 (OHL005 - Medical Terminology).
(3+0)

OAS200 Speedbuilding 1 Cr. Hr.
This course emphasizes the development of speed and accuracy at the keyboard through timed writings and corrective drills at the computer. It will provide intensive practice in speed and accuracy development through remediation, reinforcement, and skillbuilding. Students will also learn speed and accuracy development techniques and strategies.
(0+2)
Prerequisite: OAS102

OAS223 CCA Coding Exam Review 3 Cr. Hrs.
This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly, as it relates to overall coding issues. A Certified Coding Associate candidate will want to take this course prior to the national CCS-P and CCS exam courses.
(3+0)
Prerequisites: OAS/MEA229
Co-requisite: OAS/MEA283

OAS224 CCS Hospital Coding Exam Review 3 Cr. Hrs.
This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly as it relates to the hospital reimbursement process, and complete abstracting exercises. The exercises will simulate the day-to-day coding in the hospital setting.
(3+0)
Prerequisites: OAS180, OAS/MEA229
Co-requisite: OAS/MEA283

OAS225 CCS-P Physician Office Code Exam 3 Cr. Hrs.
This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly as it relates to the physician's office, and then complete abstracting exercises. The exercises will simulate the day-to-day coding in a physician's office.
(3+0)
Prerequisites: OAS180, MEA/OAS229
Co-requisite: OAS/MEA283

OAS226 Home-Based Independent Medical Coder 3 Cr. Hrs.
This course is for students who have already learned the basics of procedural and diagnostic coding. In addition, students should have earned the CCA, CCS, and/or CCS-P credential prior to attempting the material in this course. This course will provide useful information regarding business start-ups, resource and alternative coding opportunities for coding specialists to utilize while pursuing successful independent careers.
(3+0)
Prerequisites: OAS180, OAS/MEA229
Co-requisite: OAS/MEA283
Recommended: Certification as CCA, CCS, CCS-P

OAS227 Diagnostic Coding 3 Cr. Hrs.
This course gives the student an introduction to the process of diagnostic coding for health insurance reimbursement purposes using the International Classification of Diseases (ICD) system. Students learn the format and organization of the ICD system. They learn to identify abbreviations, symbols and modifiers used in the ICD coding system. Students learn to analyze medical documents to locate and identify primary, principle, secondary and concurrent diagnoses. Students then use their knowledge of anatomy, physiology, disease conditions, pharmacology, along with medical terminology with the ICD process to accurately assign diagnostic codes for insurance reimbursement and later correctly link diagnoses to procedures performed.
(3+0)
Prerequisite: OAS180
Co-requisite: BIO150

OAS229 Diagnostic and Procedural Coding 4 Cr. Hrs.
This course gives the student an introduction to the diagnostic and procedural coding processes for health insurance reimbursement purposes using the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) systems. Students develop an understanding of the format and organization of coding system manuals, and the conventions that guide their use. Students will use their knowledge of medical terminology, anatomy and physiology, disease conditions, and pharmacology to correctly assign diagnostic and procedural codes from documentation that link diagnoses to procedures performed.
(4+0)
Prerequisites: OAS180 and BIO 150 or BIO 232
Co-requisites: MEA 205 and MEA 110

OAS230 Transcription 3 Cr. Hrs.
This course is designed to develop skill in listening and transcribing recorded dictation using the computer. A variety of business correspondence is transcribed at the computer with an emphasis on developing language arts skills such as grammar, spelling, word usage, and vocabulary. The importance of mailable documents is stressed.
(3+0)
Prerequisites: ENG111, OAS101, and CIS112

OAS249 Advanced Microsoft Suite 3 Cr. Hrs.
This is a comprehensive course stressing the refinement of word processing, spreadsheet, database management, and presentation concepts and procedures; along with reviewing workplace requirements, updating of skills, and prioritizing work assigned. The assignments will go beyond the mechanics of the software. Students will learn design layout, writing, problem-solving, analysis, critical thinking, and information management skills. This course is based on prior experience in Microsoft Office: Word, Excel, Access, PowerPoint, Outlook; keyboarding; records management; and office procedures.
(3+0)
Prerequisites: CIS112 and CIS113

152

OAS282 Medical Transcription 3 Cr. Hrs.

This course uses transcription equipment to develop skill for accurately transcribing medical dictation on a computer. Dictation will cover patient history and physical examinations, discharge summaries, surgical, pathology, and laboratory reports. Knowledge of medical terminology, keyboarding accuracy, and speed of transcription will be expanded.

(3+0)

Prerequisites: ENG111, OAS180, OAS101, and CIS112

OAS283 Computerized Medical Insurance 3 Cr. Hrs.

This is a course that will cover the fundamentals of using medical office management software which includes: inputting patient data, processing insurance claims and payments, scheduling appointments, and printing medical reports. The computer skills gained will enable students to cross over to the workplace and use medical software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).

(3+0)

Co-rerequisite: OAS/MEA229

OAS291 Internship I 1 Cr. Hr.

This internship is a continuation of the job-related office services experience. The student is responsible for actively seeking the position within the College or for an outside organization. Second-year student or instructor permission expected.

(1+10)

Prerequisite: ENG111

OAS292 Internship II 1 Cr. Hr.

This internship is a continuation of the job-related office services experience. The student is responsible for actively seeking the position within the College or from an outside organization. Second-year student or instructor permission expected.

(1+10)

Prerequisite: ENG111

PAR100 Introduction to Paralegal 3 Cr. Hrs.

This course covers the basics of legal assisting, emphasizing the fundamental concepts of the legal system. The course includes an overview of the legal assistant career and ethical considerations related to the job.

(3+0)

PAR101 Law Office Management 3 Cr. Hrs.

This is an introduction to the day-to-day operation of a law office. Emphasis is placed on the development of accurate management systems, common procedures and structures of various law firms emphasizing time keeping, client files, record maintenance and retrieval, planning, billing, collections, and software usage.

(3+0)

PAR110 Civil Procedures 3 Cr. Hrs.

This is a study of the Federal and State Rules of Evidence and civil procedures. The basic elements of civil claims will be discussed and the initial phase of an action, the complaint, and the discovery process are examined. Emphasis is placed on the role and responsibilities of paralegals in discovery procedure and trial practice.

(3+0)

PAR115 Family Law 3 Cr. Hrs.

This course covers domestic relations law including marriage, divorce, annulment, separation, adoption, and the rights of children. The paralegal is introduced to the various documents and procedures used pertaining to these family matters.

(3+0)

PAR205 Real Estate Transactions 3 Cr. Hrs.

This course introduces the student to the law and terminology involved in real estate and real estate conveyances. The course also examines various contracts, mortgages, deeds, and leases. A case project is included in which students prepare an abstract of title by examining recorded documents. The course is designed to acquaint students with basic real property law, ownership, easement, and mortgages. Course also covers problems arising from sales agreements.

(3+0)

PAR210 Legal Research and Writing 3 Cr. Hrs.

This course provides the student with the basic research abilities which are necessary in law offices. Students use a law library including reporter systems, legal encyclopedias, codes, and computer searching systems.

PAR215 Tort Law 3 Cr. Hrs.

This course covers the traditional civil wrongs, from both the plaintiff and defendant standpoints. Actual cases will be briefed and discussed. The course stresses the importance of preparation prior to trial.

(3+0)

PAR220 Criminal Law 3 Cr. Hrs.

The Ohio Criminal Code and Rules of Criminal Procedure will be the foundation of this examination of the pretrial procedures in a criminal case. Students are exposed to the criminal justice system from the elements of offenses through post-conviction remedies. The drafting of motions and other documents associated with criminal matters are included.

(3+0)

PAR221 Bankruptcy 3 Cr. Hrs.

This course focuses on the procedures required and forms necessary to file in bankruptcy. The course identifies the skills necessary to gather information and assemble materials for a typical client file.

(3+0)

PAR222 Estates, Trusts, & Wills 3 Cr. Hrs.

This is a practical examination of the procedures for drafting wills and probating estates in Ohio. It is a study of the law as applied to the more common forms of wills, trusts, and intestacy. Organization and jurisdiction of the probate court are examined. The documents that must be prepared for the courts, the mechanics of probating the estate, and related accounting matters are examined.

PAR290 Paralegal Internship 3 Cr. Hrs.

This is a legal work experience related to the student's program of study. The student is accepted on the basis of academic progress and available work site. Enrollment only with instructor permission.

(1+20)

PET110 Principles of Plastics 4 Cr. Hrs.

This class is an overview of the plastics industry. Topics covered include basic polymer construction, types, and properties. Different plastic manufacturing processes and the equipment used both primarily and for secondary operations. Quality, defects, causes and monitoring methods including testing. Safety and environmental issues affecting the plastics industry will also be covered.

(3+2)

PET115 Plastics Processes I 4 Cr. Hrs.

This class is a basic overview of the injection molding, extrusion, blow molding, and thermoforming processes. Topics covered will include the materials and properties important to the processes. The injection molding machine, extrusion machine, blow molding machine, support equipment, and tooling used in all the processes will be covered. Job setting and establishing the process will be a large focus of the class.

(3+2)

Co-requisite: PET110

PET215 Plastics Processes II 4 Cr. Hrs.

This class is a continuation of the Plastics Processes I class. Topics covered are process optimization, documentation and trouble shooting. Special Injection molding and extrusion processes including co-injection-compression, structural foam, corrugated pipe, blown film, compounding, and others will be discussed also. Knowledge of these topics will be gained through text computer simulation and hands-on lab exercises.

(2+4)

Prerequisite: PET115

PET231 Plastic Materials Testing 4 Cr. Hrs.

This class is an overview of the more common plastic material properties and performance tests used in industry today. The properties covered will include: mechanical, physical optical, and other properties including a section on color specification and color testing. ASTM and ISO standard test methods will be used to establish and document tests and results. The class will also cover methods of determining an unknown material and general quality standards. Knowledge of these topics will be gained through text, demonstrations and hands-on lab exercises.

(3+2)

Prerequisites: PET110 and MTH090

PET240 Injection Mold Tooling 4 Cr. Hrs.

An overview of the tooling used in injection molding. The study will cover general mold construction and materials used in the mold. Topics will include the different mold styles such as 2-plate, 3-plate, hot runner, and cold runner. The different systems of a mold including runners, gates, vents, cooling, and ejection will be studied. Part design for acceptable tooling along with tooling practices used in current industry will also be studied. Knowledge of these topics will be gained through text, lecture, and some lab time.

(3+2)

Prerequisites: PET210 and IND103 with a "C" or better

PET250 Plastics Secondary Operations 4 Cr. Hrs.

This course is an overview of the different secondary processes and equipment used in the plastics industry. Topics will include thermoforming equipment and processes. Fabrication methods including welding and bonding will be covered. Processes such as hot stamping, pad printing, and other methods of decorating will be covered. Also, secondary operations such as trimming and forming will be discussed. The course will be taught as a lecture with some demonstration and hands-on labs.

(3+2)

Prerequisite: PET110

Co-requisite: MTH090

PHI110 Critical Thinking & Logic 3 Cr. Hrs.

An introduction to the principles of valid reasoning, emphasizing both deductive and inductive logic. Includes analyzing and evaluating arguments, as well as creating arguments in the form of the short, argumentative essay. **Writing Intensive.**

(3+0)

Co-requisite: ENG111

PHI201 Introduction to Philosophy 3 Cr. Hrs.

Examines enduring human concerns such as religion, science, knowledge, identity, morality, and justice, using a variety of philosophical perspectives. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH045 - Introduction to Philosophy). **Writing Intensive.**

(3+0)

Co-requisite: ENG111

PHI210 Ethics 3 Cr. Hrs.

An introduction to basic ethical theories and their applications. Students examine the relationship between personal and social values in particular cultural contexts. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH046 - Introduction to Ethics). **Writing Intensive.**

(3+0)

Co-requisite: ENG111

PHI230 World Religions 3 Cr. Hrs.

Study and comparison of the major attitudes toward life, human existence and the world embodied in major religions of the world. Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity, and Islam will be several of the religions examined along with the cultural backgrounds of lands of their development. **Writing Intensive.**

(3+0)

Co-requisite: ENG111

PHY100 The World of Science 3 Cr. Hrs.

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)

PHY101 Principles of Physical Science 4 Cr. Hrs.

An introduction to the basic principles of the physical sciences. Includes subjects of physics, chemistry, geology, astronomy, and meteorology. Understanding of basic concepts is developed through emphasis on scientific methods and basic laboratory procedures and report writing. Includes simple problem solving, lab work and a research paper.

(3+2)

Prerequisite: MTH080 or satisfactory score on Course Placement Test

PHY140 Astronomy 4 Cr. Hrs.

An introduction to the science of astronomy. The course will cover elements of the history and development of astronomy, our new understanding of the solar system, stellar astronomy, the galaxies and the structure of the universe. Laboratory reinforces and supplements lectures.

(3+2)

PHY150 Principles of Geology 4 Cr. Hrs.

An introduction to the field of geology and the study of the earth. Covers minerals and rocks and their formation within the context of the earth's geologic history. Emphasis on rocks, soils, and land formations, plate tectonics and natural disasters such as earthquakes. Lab includes field trips and the identification of rocks and minerals. Some chemistry is recommended.

(3+2)

PHY251 Physics: Mechanics & Heat 4 Cr. Hrs.

An algebra based course covering mechanics including force, work, energy, and simple machines, heat and basic thermodynamic concepts, wave motion and sound. It includes problem solving, laboratory work and the writing of technical lab reports. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSC014 - General Physics I - Not for Physics majors and OSC021 - General Physics Sequence - Not for Physics Majors, course 1 of 2).

(3+3)

Prerequisites: MTH109 and MTH112

PHY252 Physics: Electricity & Magnetism 4 Cr. Hrs.

An algebra based course covering electricity and magnetism, light and optical concepts, and basic concepts of modern physics. It includes problem solving, laboratory work and the writing of technical lab reports. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSC015 - General Physics II - Not for Physics majors and OSC021 - General Physics Sequence - Not for Physics Majors, course 2 of 2).

(3+3)

Prerequisites: MTH109 and MTH112

PLC200 Programmable Controller I 3 Cr. Hrs.

The course is a study of the installation, programming and troubleshooting of programmable controlled systems currently used in an industrial environment. The focus will be on Installation, Programming, Engineering and Maintenance tasks performed with PLC systems. The primary PLC used for this class will be the Allen Bradley SLC-500, using RSLogix 500 and RSLinx software. The topics presented will be learned through text, presentations, various exercises, and hands on labs.

(2+2)

Prerequisite: IND120

PLC210 Programmable Controller II (AB) 3 Cr. Hrs.

This course is an advanced study of the Programmable Automation Controller (PAC) instruction set, and programming of Allen Bradley Control Logix Processors, and hardware interface systems. The PLCs used in this course will be the Allen Bradley Control Logix and Compact Logix Programmable Automation Controllers. PAC networks such as DeviceNet and ControlNet are discussed, as well as Ethernet interfaces. Students will study industrial applications of the PACs focusing on problem solving and project completion. The topics presented will be learned through text, presentations, various exercises and hands-on labs.

(2+2)

Prerequisite: PLC200

PLC220 PLC III 3 Cr. Hrs.

The class is a study of the Allen Bradley Panel View 600 hardware utilizing the Panel Builder 32 Programming software. PLC networks such as Ethernet and Device Net are discussed, as well as Ethernet interfaces. Students will study industrial applications of the Panel View, focusing on problem solving and project completion.

(2+2)

Prerequisite: PLC210 or instructor permission

PLC230 Servo/Robotic Systems 3 Cr. Hrs.

Servo/Robotics Systems is an introductory course in industrial robotics with emphasis on The Fanuc R-J3 series robot. The course is intended for students who wish to gain insight into robot operations in order to setup, test, run, and refine application programs for production. Students successfully completing the course will be able to: power up and jog the robot, execute production operations and recover from common faults, create and modify material handling programs and macros, and utilize robot input and output signals. The course consists of lectures, demonstrations, and a series of laboratory exercises using the Fanuc CERT training modules.

(2+2)

PNE105 Effective Communication Skills 1 Cr. Hrs.

The ability of health care professionals to communicate accurately and effectively in the context of a helping relationship is vital. The course provides tools with which to establish open therapeutic communication with clients, foster teamwork with colleagues, and deal with conflict and aggression in a constructive manner.

(1+0)

PNE110 Special Topics in PN 1-4 Cr. Hrs.

An independent study which focuses on a topic or selected problem in nursing, subject to approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of the Dean of Nursing

PNE117 Pharmacology I 1.5 Cr. Hrs.

Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This is the first part of a 2-course sequence equating to PNE119.

(1.5+0)

Prerequisites: PNE120, BIO150 or BIO232

PNE118 Pharmacology II 3 Cr. Hrs.
Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This course is the 2nd part of a 2-course sequence equating to PNE119.

(3+0)

Prerequisite: PNE120

PNE119 Pharmacology 1.5 Cr. Hrs.

This course provides the student with a foundation for application of concepts of pharmacology in nursing practice. Drugs are presented by classification, groups and prototypes. Principles of drug action, interactions, contraindications, adverse effects, and nursing implications of each drug classification are discussed, as well as federal drug legislation and the responsibility of drug administration, including dosage calculation. The pharmacological aspects of nursing care are integrated using the nursing process. Nursing considerations and patient teaching for each prototype are emphasized.

(3+0)

Prerequisite: PNE117

PNE120 Essentials of Practical Nursing 8 Cr. Hrs.

An introduction to the body of nursing knowledge and skills essential for safe and accurate delivery of care utilizing the nursing process. Basic therapeutic communication, multicultural concepts, IV therapy, fluid and electrolyte balance, and ethical concepts are introduced.

(4+12)

Prerequisite: Admission to the Practical Nursing Program

Co-requisites: BIO150 or BIO232, ENG111, and PSY110

PNE121 Nursing Care of the Mother and Newborn 2.5 Cr. Hrs.

This course focuses on nursing care of women related to reproductive health patterns. Emphasis is placed on pregnancy, childbirth, postpartum, and the newborn with nursing care directed in a family-centered holistic approach. Selected women's health issues and potential complications are included that pertain to the childbearing cycle. Legal and ethical directives are reviewed. This is an eight week course.

(3+6)

Prerequisites: PNE120 and BIO150 or BIO232

Co-requisites: PSY230, NRS110 or NRS112, and PNE122

PNE122 Nursing Care of the Child 2.5 Cr. Hrs.

This course focuses on nursing care of the child from infancy through adolescence with health care needs. Emphasis is placed on growth and developmental concepts with nursing care directed in a family-centered holistic approach. Health promotion, maintenance, and restoration of the child are examined. Legal and ethical directives are reviewed. This is an eight week course.

(3+6)

Prerequisites: PNE120

Co-requisites: PSY230, NRS110 or NRS112, and PNE121

PNE123 Nursing Care: Adults I 4.5 Cr. Hrs.

Focuses on the care of adults with both acute and chronic medical and surgical conditions. A body systems approach is utilized. Mental health concepts and basic concepts of bioterrorism are introduced. Students continue to develop skills in problem solving through the use of the nursing process as applied to individual situations. This is an eight week course.

(6+10)

Prerequisite: PNE120 and BIO150 or BIO232

Co-requisite: NRS110 or NRS111

PNE124 Nursing Care: Adults II 5.5 Cr. Hrs.

This course builds on previous knowledge and concepts. Acute and chronic conditions of adults are presented over the remaining body systems. Legal issues in practical nursing are discussed as well as the leadership/management role of the practical nurse in caring for groups of individuals. This is an eight week course.

(6+15)

Prerequisites: NRS110 or NRS112, PNE121, PNE122, PNE123

Co-requisite: BIO131

PSY110 General Psychology 3 Cr. Hrs.

This course examines the complex individual, the many factors believed to drive the individual and the resulting behavior. Students discuss empirical investigation and learn how to use these methods as tools in the discovery of individual functioning. This class also explores specific area of inquiry such as cognition, social and developmental psychology, learning, perception, consciousness, organizational, and health psychology. Personality, abnormal behavior, and psychological therapies are discussed. Transfer Assurance Guide (TAG) approved effective summer 2007 (OSS015 - Introduction to the Fundamentals of Psychology). **Writing Intensive.**

(3+0)

Co-requisite: ENG111

PSY210 Abnormal Psychology 3 Cr. Hrs.

This course is designed to provide students with an understanding of maladaptive behavior, its causes and consequences. Emphasis is on research methods and clinical assessment skills. Utilizing the DSMIV, special emphasis is placed on symptom recognition and treatment planning of psychological disorders. The impact of mental illness on the client's interpersonal relationships as well as cultural differences and societal response to mental illness will be explored. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS017 - Abnormal Psychology). **Writing Intensive.**

(3+0)

Prerequisite: PSY110, ENG111

PSY220 Social Psychology 3 Cr. Hrs.

This course provides students with the opportunity to explore the influences of other people, groups, and situations on the individual. Students should also gain a basic understanding of the research process and how it is used to investigate social psychological issues. Topics covered in this class include social perception and cognition, social influence, social relationships and applied social psychology. Students will have many opportunities to apply their new knowledge to critical thinking exercises and group projects. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS016 - Social Psychology). **Writing Intensive.**

(3+0)

Prerequisite: PSY110, ENG111

PSY230 Human Growth & Development 3 Cr. Hrs.

This course addresses the study of human development over the entire life span. Topics included in this course are emotional, cognitive, moral, social, and biological development. In addition to these topics, this course offers an analysis of the interaction of human characteristics within the individual and the relationship between individuals, environment and culture at various stages of development. Transfer Assurance Guide (TAG) approved effective spring 2008 (OSS048 - Life Span). **Writing Intensive.**

(3+0)

Prerequisite: PSY110, ENG111

156

QCT100 Quality Concepts 3 Cr. Hrs.

This hybrid class combines on-line learning and lab work. It is an introduction to Quality and linear measurement for engineers and persons planning to work in a manufacturing or related environment. Students measure parts in the lab to obtain data. They work with the data to compute statistics and create charts and graphs that apply to theory. Students participate in team activities and on-line forums to share learning with each other and interact with the instructor. Students measure test parts to demonstrate instrument reading proficiency.

(3+0)

Prerequisite: MTH079 or MTH080

QCT131 Quality for Lean Manufacturing 3 Cr. Hrs.

This course deals with managing production operations in manufacturing plants. Two topics, "The 5S's: Workplace Organization" and "Mistake-Proof It!" prepare the student for a "Lean Manufacturing" project. Course is web based. Instructor is available for consultation via e-mail and telephone. Must have the ability to access web courses.

(2+2)

Prerequisites: QCT100 and ability to access web courses

QCT141 Precision Measurement 3 Cr. Hrs.

This course provides the student with theory and skills needed to perform dimensional inspections. Students will learn to study a part print, select, and use the proper measuring tool(s). Concepts introduced include precision, discrimination, accuracy and calibration. Previously learned print reading skills are expanded to include Geometric Dimensioning and Tolerancing.

(2+2),

Prerequisites: MET110, IND103 with a "C" or better

QCT142 Advanced Concepts of GD & T 3 Cr. Hrs.

This second course in geometric dimensioning and tolerancing requires the student to already have an understanding of the basics of GD&T. There are more in depth discussions on select topics not covered in detail in fundamentals classes. Examples are more complex and include explanations of concepts that create problems in the workplace. A method for dealing with tolerance stacks, another layer of GD&T expertise, will be demonstrated and practiced.

(2+2)

Prerequisite: MET110 or QCT141

QCT243 Advanced Quality Improvement 3 Cr. Hrs.

This course is one of a series of quality classes. The student learns more complex quality improvement methods by studying at least three of the following distinct topics: Advanced SPC; Six Sigma Start-Up; DOE: Screening Experiments; Measurement Systems Analysis; and Problem Solving. Topics are selected based on student's work experience and previously completed quality course content. All but two sessions may take place via the internet. Two, 3-hour laboratory workshops, are planned for Design of Experiment and Cp, CpK practice. Must have the ability to access web courses.

(2+3) On Demand

Prerequisite: QCT100 and ability to access web courses

QCT250 Certified Quality Technician 3 Cr. Hrs.

Review of the requirements and topics to become certified as an American Society for Quality Control Technician or Mechanical Inspector.

(3+0)

Prerequisites: QCT100 and QCT141

REA210 Real Estate Principles 3 Cr. Hrs.

This is an introductory course taught in accordance with guidelines set by the National and Ohio Real Estate Associations, and the Ohio Real Estate Commission. It is designed for professional real estate people, as well as the general public. The course covers elementary characteristics of real estate and various influences on real estate values and basic real estate math. It also is a foundation for further study and preparation of securing a sales license.

(3+0) Weekends -

REA220 Real Estate Law 3 Cr. Hrs.

This is a study of all the areas of law dealing with real estate. Emphasis is on the law of agency as applied to real estate brokers and salespersons. Law of fixtures, estates, leases, conveying of real estate, real estate managers, license laws of Ohio, zoning, cooperatives, and condominiums are also included. This prepares students for sales license testing.

(3+0) Weekends -

REA230 Real Estate Finance 3 Cr. Hrs.

This is an examination of the nature of financing real estate. Primary consideration is understanding mortgage loans and the mortgage market. The effects of governmental monetary and fiscal policies are also considered. Qualifying applicants and loan procedures are discussed throughout. This is a required course to prepare students for sales license testing.

(3+0) Weekends -

REA240 Real Estate Appraisal 3 Cr. Hrs.

This course is an examination and research of the components and parameters of financing real estate. Primary consideration is given to understanding mortgage loans and the mortgage market. The effects of governmental monetary and fiscal policies are also considered. Qualifying buyers (applicants) and loan (financing) procedures are discussed throughout. This is a required course to prepare students for sales license testing in Ohio.

(3+0) Weekends

RTI102 Shop Algebra 2 Cr. Hrs.

Basic elementary algebra. Material covered includes fundamental operations of positive and negative numbers, grouping symbols, algebraic axioms, equations, formula manipulation, special products, factoring, quadratic equations, and related applications to the shop.

(2+0)

Co-requisite: MTH050 or instructor permission

RTI103 Shop Geometry & Trigonometry 3 Cr. Hrs.

Geometry includes definitions and descriptions of geometric terms, axioms, theorems, propositions dealing with straight lines, triangles, polygons and circles, as well as perpendicular and parallel relationships. Trigonometry includes definitions of basic trigonometric functions, use of trigonometric tables, solutions of right angle and oblique triangle problems, use of sine, cosine, tangent and their reciprocals in the solutions of unknown angles, logarithms, and practical shop problems.

(2+2)

Prerequisite: RTI102 or MTH080

- RTI121 Shop Graphics – Blueprint Reading and Drafting** 3 Cr. Hrs.
Print Reading and sketching including the alphabet of lines, orthographic projection, ordinary views, section views, auxiliary views, pictorial sketching, dimensioning, tolerancing, screw threads and fasteners, mathematics for design and an introduction to geometric dimensioning and tolerances.
(2+2)
- RTI123 Electrical Print Reading** 2 Cr. Hrs.
This course is a study of the basics of print reading for the skilled trades person. One element of this course is how to draw and sketch symbols on a print, and how to interpret basic blue prints. The focus of the course will be on electrical symbols and prints, but the course will also cover Mechanical symbols and prints as well.
(2+0)
- RTI131 Industrial Safety** 2 Cr. hrs.
This is a course in hazard recognition. Although students learn to identify potential hazards in the workplace, they will also develop a greater awareness of hazards in their environment in conjunction with the Industrial Commission of Ohio.
(2+0)
- RTI135 Construction Safety** 1 Cr. Hr.
This course emphasizes safety awareness and procedures for maintaining a safe work environment. Topics include construction hazards, health considerations, and injury prevention.
(1+0)
- RTI141 Precision Measurement** 2 Cr. Hrs.
Introductory course in learning to use the Machinery's Handbook Index to read and understand the various mechanical tables, rules, formulas, and general data. This course places emphasis on precision tools, reading and proper use of precision measuring tools and instruments such as mirometers, vernier devices, dial indicators and a review of tables and formulas.
(2+2)
- RTI142 Applied Statistical Method** 2 Cr. Hrs.
This class establishes the reason for and the philosophy behind a successful quality control program. It covers how to use probability, X-bar and R charts and MIL-STD-105D to solve quality problems.
(2+0)
Prerequisite: MTH080 or RTI102
- RTI143 Bench Work** 2 Cr. Hrs.
This is the first machine shop course. Students learn the use of hand and power hack saws, burring, layout work on the bench, shearing a drilled section, filing and polishing, use of hand taps, and cutting threads with a die.
(2+0)
Prerequisite: RTI121 or instructor permission
- RTI144 Machine Repair** 2 Cr. Hrs.
Basic fundamentals of methods and means to rebuild a production machine such as realignment of columns of tables, scraping of ways, replacing spindles, gears, bearings, gibs, etc.
(2+0)
Prerequisite: RTI143
- RTI146 BICSI Apprentice Training** 4 Cr. Hrs.
This is the first in a series of three courses designed to teach the proper methods and procedures used to install telecommunication cabling systems in accordance with established industry standards. Both a written and hands-on exam must be passed to obtain in order to be registered with the Building Industry Consulting Services International at this beginning level.
(1+0)
- RTI152 Programming of Numerically Controlled Machines** 3 Cr. Hrs.
This course introduces the advantages and uses of Computer Numeric Controls in manufacturing. Students will use the blueprint of a mechanical part to determine the datum, the sequence of operations required, and the appropriate tooling to create a part using a CNC machine. G & M code programs will be written for use on a CNC mill or lathe, which will machine the part according to specifications. There is also an emphasis on workplace safety and safe work procedures. An introduction to geometric dimensioning and tolerances is included.
(3 + 0)
- RTI153 Residential: Wiring I** 4 Cr. Hrs.
This course is an introduction to the basics on residential wiring techniques. This class will do an overview of the complete installation process, and then move to specific installation issues. The students will be introduced to the National Electrical Code, and blueprint interpretation.
(4+0)
- RTI154 Construction Electricity I** 4 Cr. Hrs.
This course is an introduction to the basics of construction electricity. This class will do an overview of basic tools and installation concepts that will be focused on in later lessons. The student will also study the basics of DC electrical circuits.
(4+0)
- RTI155 Residential: Wiring II** 4 Cr. Hrs.
This course is a continuation of the basics of residential wiring. This class will focus more on the more advanced topics of residential wiring such as service entrances, and specialized outlets and wiring methods. Students will also working in a lab environment with hands on exercises to support the topics discussed in class.
(3+2)
- RTI156 Construction Electricity II** 4 Cr. Hrs.
This course is an intermediate type of course on the study of basic electrical circuit concepts. This class will do an overview of the operation of series and parallel circuit characteristics. The students will be introduced to the National Electrical Code, and basics on how to interpret it.
(4+0)
- RTI157 NEC Fundamentals** 2 Cr. Hrs.
This course is an introduction to the use of the National Electrical Code book. Students will learn to interpret the NEC articles and sections. The focus of this class will be on basic terms, navigation and interpretation, with the emphasis being on conductors and insulators.
(2+0)

158

RTI166 National Electric Code I**1 Cr. Hr.**

This course is a breakdown of the three credit hour course RTI172, National Electrical Code that has been divided up into one credit hour sections. This will be offered at business sites in a five-week timeframe.

(1+0)

RTI169 Transformer Connections**1 Cr. Hr.**

This course is a study of the various connections and configurations of single and three phase transformers. The focus will be on the student being able to connect a single phase transformer for high and low voltage, and three phase transformers for the desired configuration. Students will learn proper ways to ground transformer systems.

(1+0)

RTI171 Industrial Electricity I**3 Cr. Hrs.**

A beginning course in electrical theory. Topics covered include electron flow, conductors, sources of electricity, electrical components, Ohm's Law dealing with voltage, current and resistance in the series, parallel and series parallel circuits. Also, briefly covers motors, generators and transformers. Lab work includes use of meters and how to measure circuit variables.

(2+2)

Prerequisite: MTH050 or satisfactory score on Course Placement Test.

RTI172 Industrial Wiring (NEC)**3 Cr. Hrs.**

This course is focused on basic wiring concepts in an industrial workplace. Topics include, wire & conduit sizing and installation, switching circuits, distribution equipment and grounding equipment. Students will wire on industrial grade equipment. Students will also learn basic National Electrical Code information, primarily on Article 79 for Industrial Machinery. This course was named National Electrical Codes.

(2+2)

Prerequisite RTI 171 or instructor permission

RTI174 Electrical prints & Troubleshooting**3 Cr. Hrs.**

Practical experience is provided along with the theory of operation for using equipment like the YOM, clamp-on voltmeter and other electrical test pieces. The student learns to troubleshoot by studying electrical schematics, wiring diagrams, pictorial drawings and demonstration boards using them for testing the various types of electrical circuits.

(3+0)

Prerequisites: RTI194 or instructor permission

RTI178 Industrial Electricity C**1 Cr. Hr.**

This course is part of a breakdown of the three credit hour course RTI171, Industrial Electricity that has been divided up into two, one credit hour sections and a two hour lab section. This will be offered at business sites in a five-week timeframe. RTI178 will account for one credit hour.

(1+0)

RTI179 Close Circuit TV**1 Cr. Hr.**

This course is a study of basic operation of Close Circuit TV (CCTV) systems used in a commercial and industrial environment. The focus will be on the operation of video systems, and the operation of each component. Students will learn basic applications of these systems.

(1+0)

RTI181 Applied Welding Techniques**3 Cr. Hrs.**

A general orientation of three non-pressure processes commonly used in industry to join metal fusion alone - the oxy-acetylene, arc, and TIG methods. Topics covered include welding theory and practice, study of equipment safety measures, welding symbols and techniques, electrode classification, types of welds, and fusion of various types of metals.

(2+2)

Prerequisite: RT1121 or instructor permission

RTI182 Maintenance Electricity**3 Cr. Hrs.**

This course is a study of the basic electrical concepts. Direct Current circuits will be the focus of this course, as well as the various circuit configurations. Students will prove the basic concepts though hands on lab experiments.

(3+0)

RTI183 Alarm Signaling and Low Voltage Circuits I**2 Cr. Hrs.**

This course is a study of basic low voltage circuits found in a commercial or industrial installation. The focus of this class will be on basic security sensors and alarms, and how they interface to a system. Students will learn how to install and troubleshoot these devices.

(2+0)

RTI184 Alarm Signaling and Low Voltage Circuits II**2 Cr. Hrs.**

This course is a study of basic low voltage circuits found in a commercial or industrial installation. The focus of this class will be on basic safety sensors and alarms, and how they interface to a system. Students will learn how to install and troubleshoot these devices.

(2+0)

RTI185 Premises Cabling**2 Cr. Hrs.**

This course is a study of the installation and operation of Local Area Networks. The focus of the course will be on the installation on and troubleshooting of network systems found in a commercial and industrial environment. Students will be taught how to install and troubleshoot networking equipment.

(2+1)

RTI188 Fire Alarms**1 Cr. Hr.**

This course is a study of basic fire alarm systems. The focus will be on the student understanding the operation and maintenance of a fire alarm system. The students will be introduced to Modern and legacy fire alarm systems.

(1+1)

RTI191 Electrical Principles and Applications.**3 Cr. Hrs**

This course is a study of basic semiconductor devices used in electronics. The focus of the class will be on the operation and characteristics of the basic semiconductor device, and how it is used in specialized equipment. Students will do hands on lab exercises to learn how to connect the devices in a circuit, and how to troubleshoot them.

(2+3)

- RTI194 Industrial Electricity II 3 Cr. Hrs.**
An advanced study of Industrial Electricity, focusing on electromagnetic devices, such as transformers, and relay types of devices. Student will wire relay circuits, timer circuits, and learn basic ladder logic and control system wiring concepts. Single and three phase distribution systems will also be discussed.
(2+2)
Prerequisite: RTI171
- RTI201 Industrial Applied Physics 3 Cr. Hrs.**
Includes the application of Laws of Physics to machine operations, fluids, material properties, electricity, rigging and erecting, the efficient use of levers, gears, pulleys, parallel and non-parallel forces, uniformly accelerated motion and momentum in machining operations, machinery installation, and safe working methods in today's modern factory. Also includes properties of solids, liquids, and gases, expansion of materials, friction, and heat.
(2+2)
Prerequisite: RTI103 or instructor permission
- RTI210 Residential Security/ Communications 2 Cr. Hrs.**
This course is a continuation of the study of the installation of branch circuits in a residential -environment. Low voltage circuit installation and communication -systems will also be discussed. The focus will be on installation and troubleshooting these circuits.
(2+0)
- RTI211 Residential: Installation/Code 2 Cr. Hrs.**
This course is a study of the National Electrical Code that pertains to residential installations. The focus of the class will be to interpret the NEC articles and sections, and how that relates to installation and practices of residential wiring installations.
(2+2)
- RTI212 Installer: Telephone & Security Systems 3 Cr. Hrs.**
This course is a study of the basics and characteristics of telephone and security systems. The students will be introduced to the various types of systems used in commercial and industrial installations. The focus of the course will be on the installation and troubleshooting of systems.
(3+0)
- RTI213 Residential & Commercial Electronics 3 Cr. Hrs.**
This course is an introduction to the basics on residential wiring techniques. This class will do an overview of the complete installation process, and then move to specific installation issues. The students will be introduced to the National Electrical Code, and blueprint interpretation.
(3+0)
- RTI214 Commercial Wiring/Print Reading 2 Cr. Hrs.**
The primary purpose of this course is to acquaint the learner with a ready source of information relevant to the NEC (National Electric Code) used in Commercial Wiring installations. Focus will also be on reading and interpreting electrical prints.
(2+0)
- RTI215 National Electrical Code II 3 Cr. Hrs.**
This course is a second level study of the National Electrical Code. This class will focus on the grounding techniques and requirements specified by Article 250 of the NEC. The students will be introduced to high voltage circuits and ground fault circuits.
(3+0)
- RTI216 National Electric Code III 2 Cr. Hrs.**
This course is a third level study of the National Electrical Code. This class will focus on the sizing of components in the motor branch circuit. The students will be introduced to hazardous location classifications and specifics, as well as special equipment specified by the NEC.
(2+0)
- RTI217 National Electric Code IV 3 Cr. Hrs.**
This course is a fourth level study of the National Electrical Code. This class will focus on the installation of more advanced and specialized equipment in the NEC. The students will also focus on the preparation for the NEC exam.
(3+0)
- RTI218 Residential: Distribution/ Troubleshooting 4 Cr. Hrs.**
This course is a study of the installation of branch circuits in a residential environment. The focus of the class will be on the installation and troubleshooting of various types of branch circuits found in the home. Specialized areas outside of the home will also be discussed.
(3+2)
- RTI220 Electrical Test Equipment 2 Cr. Hrs.**
This course is an introduction to the basic operation and application of various types of test equipment. Digital and analog types of meters will be discussed as well as oscilloscopes. The students will use the oscilloscope to measure voltage and time of an AC waveform, and then calculate the frequency.
(2+0)
- RTI223 Rigging & Erecting 2 Cr. Hrs.**
Applies the Laws of Physics to moving, setting up, and securing machines. Leverage and mechanical advantage, and the care and selection of equipment are other considerations in this course.
(2+0)
- RTI224 Descriptive Geometry 2 Cr. Hrs.**
A study of the relationship of points, lines and planes as they apply to manufacturing drawings. The course includes drawing lines and reading them in prints. Students will be able to read prints related to manufacturing.
(2+0)
- RTI225 Geometric Dimensioning & Tolerancing 2 Cr. Hrs.**
A basic course in dimensioning. Covers the principles of the ANSI Y14.5M standard. Intended to teach the student to read and interpret drawings utilizing the ANSI Y14.5M standard. Common practices not included in the standard and their interpretation are also considered.
(2+0)

160

RTI226 Jig & Fixture Design 2 Cr. Hrs.

To study and learn the function and design of basic drilling, boring, milling, and welding jigs, and fixtures that are either standardized or commercial plus special applications from problems occurring in shop situations.

(2+0)

Prerequisites: RTI121, RTI103 or instructor permission

RTI227 Die Theory & Design Fundamentals 3 Cr. Hrs.

This course investigates the details and techniques of die design theory and practice. Included is a study of forming and cutting dies and their component parts such as die blocks, strippers, stock guides, shredders, knockouts, nest gages, pushers, die stops, strip layout die sets, stock utilization and engineering formulas. A die design project will be required in which manipulative skills of design will be developed. Project areas include piece dies, blank dies, compound dies, progressive dies, forming dies, trim dies, cam dies and press dies.

(2+2)

Prerequisites: RTI121, RTI103 or instructor permission

RTI228 Patternmaking Fundamentals 3 Cr. Hrs.

The selection, use, and maintenance of hand tools, pattern shop tools and materials used in building patterns for industry. Also included are concepts of shop theory as applied to the molder and core maker it includes the processes from melting to the production of cores, sand type's binders, metallurgy, cooling and heat treatment.

(2+2)

Prerequisite: RTI226, course should be taken near end of apprentices program.

RTI231 Metallurgy & Heat Treatment 2 Cr. Hrs.

A basic course covering the nature and behavior of metals, crystall structure, theory of alloys, principles of heat treatment, properties of met and alloys and testing applications. The Rockwell and Brinell testers will be used.

(2+0)

Prerequisite: MTH080 or RTI102

RTI232 Lubricants & Coolants 2 Cr. Hrs.

Deals with the properties of commercial lubricants and coolants used various machines and machining operation. Both physical and chemical properties and their effects on the environment are studied.

(2+0)

RTI233 Industrial Pipefitting 2 Cr. Hrs.

A study of the specifications, application, installation, and maintenance of various kinds of pipe, fittings, valves, pumps, and hand tools. The analysis of job requirements in terms of materials, time utilization and sequence operation is discussed.

(2+0)

RTI234 Hydraulics & Pneumatics 3 Cr. Hrs.

Presents basic components of hydraulic and pneumatic systems including pumps, control valves, control assemblies, and actuators. It also covers general understanding of basic laws and formulas used in designing simple hydraulic circuits including standard hydraulic symbols and maintenance procedures.

(2+2)

RTI246 BICSI Installer Trainer II 4 Cr. Hrs.

This course will be offered for the IBEW (Industrial Building and Electrical Workers) for their trainees programs. This course is a study of proper procedures for starting and working at a construction site. The focus of the class will be on safely installing systems and termination of wires on a new construction site.

(4+0)

RTI265 Instrumentation & Controls I 3 Cr. Hrs.

This course is a study of the operation and troubleshooting of Industrial Instrumentation systems. The focus will be on analog monitoring and controlled devices, connected to stand alone and PLC based controlled systems. The concepts of temperature, pressure, level and flow will be discussed, as well as the transmitters that connect the analog sensor signal to the analog I/O.

(2+1)

Prerequisite: RTI171, PLC200

RTI276 Motors & Motor Controls 3 Cr. Hrs.

This course is a study of the operation of DC & AC Motors and the device that control and protect the motors. Students will wire, program, and troubleshoot solid state motor drive systems. A focus will be on how the drive is interfaced to a PLC system. Motor soft starts and reversing circuit will also be discussed.

(2+2)

Prerequisite: RTI194

RTI277 Industrial Electronics 3 Cr. Hrs.

This course is a study of the electronic devices used in modern day industrial machinery. Solid state switching devices will be discussed, that includes transistors, SCRs and Triacs, as well as the firing devices used in current controlled circuits. Power supply circuits and basic amplifier circuits using controlled circuits. Power supply circuits and basic amplifier circuits using Operational Amplifiers will also be discussed. Students will focus on operation, application and troubleshooting of the various electronic devices.

(2+2)

Prerequisite: RTI171

RTI282 Motor Control Systems: INT 2 Cr. Hrs.

This course is a study of the basics of motor control systems used in an industrial or commercial environment. The focus will be on relay panel type of control systems. Students will learn basic wiring configurations and troubleshooting techniques.

(2+0)

SCM200 Supply Chain Management 3 Cr. Hrs.

This course focuses on the flow of information and goods between a business, its suppliers and its customers. Special attention is given to the development of relationships with a firm and its suppliers. Both internal and external aspects of the supply chain are analyzed.

(3+0)

Prerequisite: SCM220 or instructor permission

SCM210 Purchasing & Materials Management 3 Cr. Hrs.

This course focuses on supplier identification, evaluation, selection, and measurement. The relationship between the purchasing function and the rest of the organization is explored along with the correlation between supplier performance and inventory levels.

(3+0)

Prerequisite: SCM220 or instructor permission

SCM220 Operations Management 3 Cr. Hrs.

This course focuses on the internal production process found in manufacturing facilities. Critical areas such as production planning, production line balancing, TOC analysis, lean, quality, MRP/MRPII, and inventory management are explored.

(3+0)

Prerequisite: MTH080

SCM230 Physical Distribution & Logistics 3 Cr. Hrs.

This course focuses on the management of the movement of goods between local, national and international locations. Shipping documentation and packaging requirements are explored. The various modes of transportation are examined in detail.

(3+0)

Prerequisite: SCM220 or instructor permission

SPN111 Spanish I 4 Cr. Hrs.

Introduction to Spanish through oral-aural drills, controlled conversations, reading and writing, with attention paid to grammatical structures and cultural awareness. Spanish I is the first half of a two-semester sequence designed primarily for beginners.

(4+0)

SPN112 Spanish II 4 Cr. Hrs.

Continuation of Introduction to Spanish with practice in speaking, reading, writing, and listening comprehension conducted within a culturally significant framework.

(4+0)

Prerequisite: SPN111 or instructor permission

SSC101 Sociology 3 Cr. Hrs.

An introduction to the sociological perspective with a focus on the United States. Order and conflict theories are applied to broad areas of sociological concern, such as social inequality, sexual inequality, work and family, law and crime, race and ethnic relations, education and popular culture, modern urbanism, politics of food, health care, and the global society. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS021 - Introduction to the Fundamentals of Sociology).

Writing Intensive.

(3+0)

Co-requisite: ENG111

SSC120 American Government 3 Cr. Hrs.

A study of power as it occurs in the formation and implementation of public policy in the United States; based on the recognition that politics is an activity that creates the "realm of we" and molds personal identities. Special attention is given to the concepts of politics, justice, and democracy as a basis for examining our responsibility in the public realm. Topics covered are media, interest groups, political parties and campaigns, federal government structure and process, effects of power in domestic and foreign affairs, and making democracy. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS011 - American Politics and Government).

Writing Intensive.

(3+0)

Co-requisite: ENG111

SSC130 Comparative Government 3 Cr. Hrs.

A study of contemporary political systems, processes and policies of Western and non-Western countries. This will include aspects of political processes such as interest groups, political parties, elections, political socialization, and political culture. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS013 - Comparative Government).

Writing Intensive.

(3+0)

Co-requisite: ENG111

SSC210 Cultural Diversity 3 Cr. Hrs.

Explores ways that our society has served as a context for either more or less "cultural diversity." Emphasizes how historical relations among different people have affected images of "self" and "others" in U.S. society. Topics include thinking about culture, historical patterns and methods, the "American dilemma," race and class, and culture and gender.

Writing Intensive.

(3+0)

Co-requisite: ENG111

STA120 Introduction to Statistics 3 Cr. Hrs.

An introductory course introducing the student to the collection, analysis, and presentation of data. Presentation includes appropriate graphic, tabular, and numeric summaries of data. Major topics include Correlation and Regression, Hypothesis Testing, Analysis of Variance (ANOVA), and CHI Square analysis. Use the standard normal distribution to determine probabilities from z-values. Understand the Central Limit Theorem, and apply the addition and multiplication rules of probability.

(3+0)

Prerequisite: MTH090

STA222 Business Statistics 3 Cr. Hrs.

A course introducing the student to the collection, analysis, and presentation of data. Major topics include: Descriptive and Inferential Parameters, Probability, Binomial, and Hypergeometric Distributions, Confidence Intervals, Hypothesis Testing, CHI-Squared analysis, and Linear Correlation and Regression.

(3+0)

Prerequisite: MTH109

TRN113 Tractor-Trailer Operations I 6 Cr. Hrs.

This course familiarizes students with truck instruments and controls, while teaching them to perform basic maneuvers required to drive safely in a controlled environment. Additionally, students acquire basic coupling and uncoupling skills. Development of driving skills under actual road conditions, safe operating practices are integrated into the development of driving skills. A focus on the CDL driving requirements will be emphasized.

Proficiency in math computation is needed for this course.

(3+9)

Prerequisite: Proficiency in math computations

162

TRN204 Tractor-Trailer Driving I 6 Cr. Hrs.
The students will become familiar with trucking instruments and controls, performing basic maneuvers required to drive safely in an employer's environment. Additionally, students will be employed by a motor carrier and will receive compensation. The student will be observed under strict supervision.
(1+15)
Prerequisite: TRN113

TRN205 Tractor-Trailer Driving II 6 Cr. Hrs.
The students will become familiar with trucking instruments and controls, performing advanced maneuvers required to drive safely in an employer's environment. Additionally, students will be employed by a motor carrier and will receive compensation. The student will be observed through periodic supervision during a probationary period of driving.
(1+15)
Prerequisite: TRN204

VCT103 Introduction to Visual Communication 3 Cr. Hrs.
An overview designed to teach the student about the world of visual communication: how visual communication changes the world, how to use it effectively, and how it impacts the way we live.
(2+2)
Co-requisite: VCT108

VCT108 Photo Editing 2 Cr. Hrs.
This course introduces the student to the fundamental process of creating camera-ready copy and art, color separation and proofing, image manipulation, scanning, and photo conversion methods. Various software packages, including Photoshop, will be investigated. Basic computer knowledge required. Recommend course be taken in conjunction with VCT182 Photography. Lab Fee.
(1+2)

VCT111 Layout & Design 3 Cr. Hrs.
This course covers the relationship among various design elements: balance, proportion, typography, and layout. Message composition, art presentation, copy layouts, the design process, and page makeup will be analyzed using current layout software. Lab Fee.
(2+2)

VCT120 Vector Graphics 3 Cr. Hrs.
This course focuses on the creation and editing of resolution-independent images. Students use digital drawing techniques to create vector graphics for use in other interactive media projects or as independent compositions. Topics range from the creation of vector graphics through choosing the appropriate output method for their intended use.
(2+2)

VCT182 Photography 3 Cr. Hrs.
An introductory course teaching basic photographic and digital editing techniques. Focus in on camera handling, lighting exposure, and composition. Experience includes creating digital files, digital editing, and image output techniques. Editing techniques will be limited to cropping, contrast and brightness, removal of unwanted flaws, and other correcting procedures. Photographic equipment required. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH002 - Photography, Digital).
(1+4)

VCT204 Concepts of Visual Communication 3 Cr. Hrs.
Advanced visual communication concepts including problem solving, research, design, script writing, storyboarding, training techniques, proposal preparation, cost estimating, and analysis. Overall project management techniques and environmental factors are covered in depth.
(2+2) S

VCT261 3D Computer Modeling 3 Cr. Hrs.
An introduction of computer modeling used to create 3-dimensional images. The student will be able to create realistic images using 3-dimensional modeling, textures, materials, lighting, and rendering. Computer experience required. Lab Fee.
(2+2)

VCT266 Multimedia Production 3 Cr. Hrs.
Study of multimedia through student exploration and experimentation in various visual presentation technologies including digital media. Emphasis will be on design and production of total presentations by planning content and using a variety of software and hardware.
(2+2)
Prerequisites: CIS129 or instructor permission

VCT268 Video Production 3 Cr. Hrs.
The study of video production is to provide a basic knowledge of the process used in pre-production, production, and post-production activities. Students plan, shoot, edit, and distribute a video as part of a production team. Topics include preparing a script, developing a shot list, videography, editing footage, adding sound tracks, and exporting and rendering video for various uses in various formats. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM008 - Introduction to Single Camera Production).
(2+2)

VCT289 VCT Co-Op Experience 3 Cr. Hrs.
This is a work experience in visual communications. The student is accepted on the basis of academic progress and available work site at the College or an outside organization. Freelance work in the visual communication field also accepted. Enrollment with instructor permission.
(1+20)
Prerequisites: VCT103, VCT108, VCT111, VCT120, VCT182
Co-requisites: CIS129, VCT268

WLD100 Blue Print & Weld Symbols 2 Cr. Hrs.
This course covers basic engineering drawing principles, fundamental concepts of welding specifications, symbols, and blueprint reading as used in industry, and types of welding equipment and operational safety issues. The student will learn to interpret blueprint (welding) design, welding blueprint symbols, understand prints and everything that's included in a print and to prepare ability of working with them. Also an understanding of standards set by American Welding Society will be taught.
(2+0)

WLD110 Introduction to Applied Welding Techniques 3 Cr. Hrs.

This course is an introductory course where the student will develop the knowledge and skill thru theory and lab practice in the basic welding processes which include SMAW, GMAW, OAW, PAC and OAC. Safety will be emphasized throughout the class and will be accordance with industry standards for manufacturing
(2+2)

WLD120 Gas Metal Arc Welding 3 Cr. Hrs.

This course provides a basic understanding of the Gas Metal Arc Welding process and key variables that affect the quality of welds. Hands- on lab is provided to give the student the opportunity to become proficient at welding on a variety of metals, carbon steel, stainless steel and aluminum. Welding will be done on square groove and fillet welds using single pass, and multiple pass welds.
(2+2)

Co-requisites: WLD100 and WLD110

WLD130 Flat and Horizontal Shield Metal Arc 3 Cr. Hrs.

This course is an introductory course where the student will develop the knowledge and skill thru theory and lab practice in the basic welding processes which include arc welding flat and horizontal positions. Safety will be emphasized throughout the class and will be accordance with industry standards for manufacturing.
(2+2)

Prerequisites: WLD100 and WLD110

WLD140 Gas Tungsten Arc Welding 3 Cr. Hrs.

This course covers the basic principles and practices of Gas Tungsten Arc Welding or GTAW. The student will discuss basic welding terminology, safety and demonstrate a good working knowledge of TIG (Tungsten Inert Gas) welding principles. This course will identify basic AC/DC welding equipment, various ferrous and nonferrous metals. The Student will perform flat and out-of-position GTAW using the correct shielding gas and filler rods.
(2+2)

Prerequisites: WLD100 and WLD110

WLD150 Advanced Gas Metal Arc Welding 3 Cr. Hrs.

This course provides an advanced understanding of the Gas Metal Arc Welding process and key variables that affect the quality of welds. Hands - on lab is provided to give the student the opportunity to become proficient at welding on a variety of metals, carbon steel, stainless steel and aluminum. Welding will be done on square groove and fillet welds using single pass, and multiple pass welds.
(2+2)

Prerequisite: WLD120

WLD210 Vertical & Overhead SMAW 3 Cr. Hrs.

This course provides a basic understanding of the Shield Metal Arc Welding (SMAW) process and key variables that affect the quality of welds. Hands- on labs are provided to give the student the opportunity to become proficient at welding on a variety of metals including carbon steel, stainless steel, and aluminum. Welding will be done on square groove and fillet welds using single pass and multiple pass welds.
(1+3)

Prerequisite: WLD130

WLD220 Advanced Gas Tungsten Arc Welding 3 Cr. Hrs.

This course covers the advanced principles and practices of Gas Tungsten Arc Welding (GTAW). The student will learn advanced GTAW terminology, apply safety standards and develop a working knowledge of TIG (Tungsten Inert Gas) weld principles. This course will identify advanced AC/DC welding equipment used with stainless steel and aluminum metals.
(1+3)

Prerequisite: WLD140

WLD230 Welding Fabrications & Layout 3Cr. Hrs.

This course covers more engineering drawing principles, fundamental concepts of welding specifications, symbols, and blueprint reading as used in industry. Included are types of welding, welding equipment, and safety practices and precautions in the workplace. Emphasis is on print reading, interpretation, analysis, and demonstrations and uses of fabrication and knowledge of these skills.
(1+3)

WLD240 SMAW Plate Certification Procedures & Testing 3 Cr. Hrs.

This course provides instruction in welding and layouts to understand and achieve welder test methods. The students will work in a hands-on, instructor led environment, simulating actual manufacturing processes. Course evaluation will include a written assessment and psychomotor assessment of skills.
(1+3)

WLD250 Pipe Welding 3 Cr. Hrs.

This course provides instruction in welding and layout procedures for pipe welding. This will include pipe preparation, explanation and demonstration of pipe fit-up procedures, and discussion of pipe welding terms and definitions. The student will also demonstrate pipe welding acceptance criteria as related to the ASME Section IX welding code. Students will then apply welder certification code data, administer post plate procedure, and perform SMAW to certification skill level required to attempt for a welder certification.
(1+3)

WLD260 Pre-Pipe Certification 3 Cr. Hrs.

This course covers principles and practices used in the layout and welding and layout procedures involving Shielded Metal Arc Welding (SMAW) applications. Topics will include pipe layout, fit-up, preparation and welding. Pipe welding terms and welding procedures will be explored. Student laboratory experiences will include determining pipe welding acceptance criteria and fabrication to the ASME Section IX welding code prior to welder certification application.
(2+2)

Prerequisite: WLD250