

Course Descriptions



Course Descriptions

All courses are assigned a course code title in the College data processing system. The first four characters indicate the area of study and the last four indicate the specific course, e.g. ACCT 1104 (Accounting 1104).

Course offerings will be published on the College's website prior to registration each semester. The College reserves the right to cancel a course due to low enrollment.

Prerequisite: A class which students must successfully complete before enrolling in the class that requires the prerequisite.

Corequisite: A class which students must take during the same semester as the class which requires the corequisite, unless they have already successfully completed the corequisite.

Courses that do not count toward graduation shall be identified in the College Catalog as carrying "institutional credit." This type of credit will not count in the student's cumulative grade point average, but will be used in the calculation of full-time status and calculation for grants and other financial aid formulas.

ACCOUNTING - ACCT

ACCT 1101 Principles of Financial Accounting *3 credits*

An introduction to the principles and practices of accounting. Emphasis is placed on the fundamentals of recording, adjusting, analyzing, and reporting financial information in accordance with Generally Accepted Accounting Principles. Includes the study of the accounting for cash, accounts receivable, inventory, fixed assets, accounts payable, liabilities, revenues and expenses.

ACCT 1102 Principles of Managerial Accounting *3 credits*

Prerequisite: ACCT 1101

An introduction to the use of accounting data in managerial decision making with an emphasis on the capital structure of corporations, financial statement analysis and managerial accounting techniques. Content includes corporate organization, accounting for equity transactions, long-term obligations and investments, ratio analysis of financial statements, cost measurement systems, cost-volume-profit analysis, and budgeting.

ACCT 2201 Intermediate Accounting I *3 credits*

Prerequisites: ACCT 1102

Intermediate Accounting I provides an in-depth study of the conceptual framework of accounting as it

relates to recording, reporting, and disclosing financial information on the Balance Sheet, Income Statement and Cash Flow Statement. Emphasis is placed on the accounting procedures for measuring, recording, and reporting Assets. Recent developments in accounting standards are practice are also covered.

ACCT 2202 Intermediate Accounting II *3 credits*

Prerequisites: ACCT 2201

A continuation of the in-depth study of financial accounting with a concentration on the liabilities and stockholder's equity accounts of the Balance Sheet. Other topics include financial statement analysis, error analysis, and accounting for income taxes, retirement benefits, and leases.

ACCT 2206 Managerial Cost Accounting *3 credits*

Prerequisite: ACCT 1102

Managerial Cost Accounting provides a detailed examination on the use of accounting information in managerial decision-making. Special emphasis is placed on costing techniques used in manufacturing, budgeting, differential analysis, and performance measurement.

ACCT 2209 Not-for-Profit Accounting *3 credits*

Prerequisite: ACCT 1105

This course introduces the accounting techniques and principles uniquely applicable to governmental and not-for-profit organizations. Topics include Governmental "Fund Accounting" and accounting for Public Colleges, Hospitals, and Private Not-For-Profits.

ACCT 2210 Tax Accounting *3 credits*

This is an introductory course in personal tax accounting. Emphasis is on the principles of federal income taxation as they relate to individuals and simple trusts, including the laws, rulings, and regulations that govern the preparation of individual tax returns.

ACCT 2221 Auditing *3 credits*

Prerequisite: ACCT 1102 or ACCT 1105

This course will provide a sweeping overview of auditing. Special attention will be given to the nature and economic purpose of audits, auditing standards, professional ethics, auditor's legal liability, the study and evaluation of internal control, the nature of audit evidence, forensic auditing and auditing techniques.

ACCT 2230 Computerized Accounting - QuickBooks *3 credits*

Prerequisite: ACCT 1101

A hands-on study of the market leading small business accounting software, QuickBooks Online. Emphasis is placed on using QuickBooks to record transactions and report financial information for both new and existing businesses.

ACCT 2299 Seminar *1-6 credits*

This course will be a discussion of particular problems related to the student's chosen program and areas of interest.

ADVANCED MANUFACTURING - ADMF**ADMF 1101 Introduction to Manufacturing** *3 credits*

In this course, students will be introduced to print reading and part visualization from drawings, including analyzing and interpreting Multiview drawings and three-dimensional models, location of key features and dimensioning specifications. Students introduced to beginning concepts in geometric dimensioning and tolerances. Instruction in using precision measurement tools including, but not limited to scales, calipers, micrometers, dial indicators, coordinate measurement machines. Students will incorporate the use of computer interfaces in metrology and basic statistical process control and topics in lean manufacturing.

ADMF 1102 Semiconductor 101 *3 credits*

In this course, a student will explore career opportunities within the semiconductor industry and learn how people effectively work in a cleanroom environment and adhere to chemical safety best practices. Students will be introduced to how semiconductor wafers are manufactured and processed to become an integrated circuit used in a variety of industries. Students will demonstrate problem-solving, critical thinking and communication skills while learning how the microelectronic manufacturing environment focuses on punctual delivery of products and tasks, according to the Standard Operating Procedure (SOP)/checklist.

ADMF 1103 Introduction to Vacuum Systems Technology *3 credits*

In this course, students will be introduced to the operational mechanisms and process use of vacuum pumps used in the semiconductor industry. Students will explain the operational methodology and process use of equipment that requires vacuum pumps used in the semiconductor industry. Students will demonstrate problem-solving, critical thinking and communication skills while learning how to perform maintenance on a vacuum system.

AGRICULTURE - AGRI**AGRI 1101 Agriculture Economics** *3 credits*

An introduction to the field of agricultural economics as it relates to production, consumption, marketing, prices, supply and demand, records, and finance.

AGRI 1106 Principles of Crop Science *4 credits*

Students will gain an understanding of the general principles involved in crop production, including soil, nutrients, plant breeding, planting techniques, tillage systems, pests, budgets, and environmental factors. Students will also learn the advantages and disadvantages of conventional, organic, and sustainable production systems.

AGRI 1107 Principles of Animal Science *4 credits*

An introductory course in animal sciences designed to provide students with a basic understanding of the biological principles and production practices used in animal production. Students will gain a basic understanding of anatomy, genetics, reproduction, nutrition, and behavior as they apply to domesticated animals. Students will also gain an appreciation for intensive and extensive production environments, resulting food and fiber products, and be familiar with the social issues such as animal welfare and environmental impacts.

AGRI 1114 Principles of Horticulture *4 credits*

This course focuses on skills and technologies essential for horticultural plant production. Cultural and sustainable production practices will be examined. Students will apply scientific knowledge of plant development, nutrition, and growth regulation. Environmental aspects of irrigation, chemical application, and soil conservation will be evaluated.

AGRI 1119 Greenhouse Management *4 credits*
Prerequisite: AGRI 1114

This course introduces the student to greenhouses and related equipment used to manipulate the environment to the best economical advantage in the production of greenhouse crops: flower, vegetable, and foliage plants. Included are topics on greenhouse location and construction, heating, cooling, soils and fertility, lighting, crop scheduling, disease and insect control, and environmental considerations. Some attention is given to business and the retailing of crops grown.

AGRI 1126 Livestock Feeds & Feeding *3 credits*
Prerequisite: AGRI 1107

A study of fundamental principles of feeds and feed use in farm livestock to meet nutritional and dietary requirements of farm animals. Digestive physiology will be introduced. This course includes the study of specific nutrients and feedstuff as related to domestic farm livestock. Feedstuffs will be studied in relation to value added to a ration. Ration formulation will be introduced.

AGRI 1199 Seminar *1-6 credits*

Discussion of particular issues in areas of special interest. May include topics in areas of animal science, crop production, ag business or horticulture.

AGRI 2200 Agriculture Field Experience *1-9 credits*

Agricultural field experience is a paid (or unpaid) work activity which relates to an individual student's occupational (or learning) objectives, and which can be taken in lieu of elective courses in his/her program. The experience will be coordinated by an agricultural faculty member who will assist the student in planning the experience, visit the site of the experience for a conference with the student and his/her supervisor at least once during the quarter, and assign the course grade to the student after appropriate consultation with the employer/supervisor. Students are required to have 2.5 work hours per week for 15 weeks = 37.5 work hours per semester of field experience for each 1 hour of credit that he/she has enrolled.

AGRI 2208 Soils *4 credits*

An introduction to the physical, chemical and biological properties of soils and how these properties relate to soil use and productivity.

AGRI 2299 Research Project *3 credits*

Prerequisite: Completion of core courses in agriculture program

A supervised research project tailored to the individual needs and learning objectives of the student.

ALLIED HEALTH - ALTH**ALTH 1160 Electronic Health Records** *2 credits*

This course is designed to be an interactive, competency-based approach to learning electronic health records. The student will develop skills used in electronic health records through the introduction of theory as well as the application of medical electronic health records through the use of MEDCIN Software. It includes using the computer to: 1) navigate the medical health record 2) record various patient health information such as history and findings 3) Order diagnostic tests and writing prescriptions 4) use EHR software to understand E&M code 5) use ICD10-CM codes to justify billing and orders based on diagnosis 6) graph lab results 7) use EHR to improve patient care.

ALTH 1199 Seminar *1-6 credits*

Discussion of particular problems related to chosen program and areas of interest.

ALTH 2201 Phlebotomy Technology *3 credits*

Prerequisite: Acceptance into Phlebotomy Program

Corequisite: ALTH 2225

This course is designed to further enhance the student's knowledge of the clinical methods and the practice of phlebotomy. Course includes lecture, discussion, simulations, and practice in laboratory settings with

emphasis on capillary blood specimens, venipuncture, pediatric, geriatric, arterial, intravenous and special collection procedures, specimen documentation, specimen handling, transportation, safety in laboratory setting, anatomy and terminology associated with phlebotomy, and ethical and legal issues.

ALTH 2220 Emergency Medical Procedures *3 credits*

Introduction of theory and techniques employed by the health care professional in emergency situations. Course includes simulations and laboratory sessions to identify and institute appropriate responses to various emergency incidents. Included with the emergency procedures is a course in cardiopulmonary resuscitation. With successful completion of the course, the student will receive a course completion card in adult, child, and infant CPR.

ALTH 2225 Phlebotomy Practicum *1 credit*

Prerequisite: Acceptance into Phlebotomy Program

Corequisite: ALTH 2201

The Phlebotomist Practicum Program is a period of directed practice, which consists of practical phlebotomy in a CLIA regulated, accredited laboratory facility. The students need to attain a minimum performance of 100 successful venipunctures, 25 successful skin punctures and orientation in a full service laboratory.

AVIATION TECHNOLOGY- AVIT**AVIT 1101 Aircraft Operations & Preservation** *3 credits*

In this course the student will learn the proper way to move, receive and launch aircraft which will include taxiing, towing, tugging and marshalling. The student will also learn how to jack aircraft and how to perform weight and balance calculations. The course also covers oxygen servicing, types of fires and extinguishing, types of oil and fuel, and servicing these items. Course covers aircraft drawings and blueprints.

AVIT 1102 Aircraft Maintenance Forms & Inspection Techniques *3 credits*

This course will introduce the student to aircraft publications and regulations. The student will become familiar with the use of the aircraft manufacture maintenance and structural repair manuals and illustrated parts catalog. The student will investigate the Federal Aviation Regulations, Airworthiness Directives and Advisory materials related to aircraft maintenance and paperwork required by the FAA. Knowledge of Human Factors.

AVIT 1103 Aircraft Materials & Corrosion 3 credits

This course covers aircraft corrosion and corrosive materials identification and how to protect, clean and preserve aircraft. The student will learn to use precision instrument, and torque wrenches. Inspect welds, and identify procedures for weld repairs. Materials commonly used in aircraft and their general application. Heat treatment and metal working processes. Safety wire and safety clip requirements and techniques.

AVIT 1104 Fundamentals of Electricity & Electronics 3 credits

In this class the student will learn the basis of electron flow. The student will study the relationship between voltage, current and resistance. The student will use the understanding of Ohm's Law and Kirkoff's Law relating to voltage, current and resistance to solve series, parallel and complex electrical circuits. The student will be introduced to battery theory, including lead acid and nickel-cadmium and their use in aircraft. This course will cover direct and alternating currents, wiring, switches, control devices, wiring diagrams, generators, alternators, and motors used on aircraft.

AVIT 1201 Flights Controls, Rotorcraft & Inspection 3 credits

This course will introduce the student to aircraft assembly and rigging of the wings, tail, and flight controls on fixed wing aircraft, and rotorcraft aircraft. Students will remove primary and secondary flight controls. Students will balance primary flight controls. Students will rig aircraft for flight in accordance with the manufacture's data. Students will open and inspect an engine following the prescribed 100 hour or annual inspection check. Students will write discrepancies found on engines found on engines on appropriate inspection paperwork. Students will perform necessary repairs to correct the discrepancies on the engine inspected and return the engine to an airworthy condition. The inspection process will be performed to conformity and airworthiness standards.

AVIT 1202 Airframe Non-Metallic Structures 3 credits

This course will introduce the student to aircraft fabrics, woods, composites, acrylics. The students will perform hands-on wet-layup and vacuum bagging on composite structures used in aircraft. Students will inspect, test, fabricate, and repair fiberglass, bonded honeycomb, and fabric panels.

AVIT 1203 Aircraft Communications & Instruments 3 credits

This course will introduce the student to aircraft instrumentation, communication radios, navigation equipment, and position/warning systems. The students

will understand how to inspect, check, troubleshoot, and service aircraft flight instrumentations systems both mechanical and electronic. Students will investigate VHF and HF communication radios, navigation equipment, and GPS used on today's aircraft. In lab students will remove and install flight instrument radio equipment and perform pilot static system leak checks. Students will test and service staff warning, gear warning, and anti-skid brake systems. Automatic Dependent Surveillance-Broadcast (ADS-B) theory, components, and operation.

AVIT 1204 Aircraft Environmental, Ice, Rain, & Water Sytems 3 credits

This course will introduce the student to ice and rain, cabin atmosphere control systems and Water and Waste Systems. Students will inspect, check, troubleshoot, and service smoke, carbon monoxide, fire detection, and fire extinguishing systems. Students will investigate cabin atmosphere control systems which include heating and air conditioning both vapor cycle and air cycle. Student will inspect, check, troubleshoot, and service aircraft oxygen systems. Students will be knowledgeable of water and waste systems in aircraft.

AVIT 2301 Airframe Metallic Structures 4 credits

This course will introduce the student to aircraft structures and structural repair. The student will become familiar with the materials used in all aspects of aircraft construction. This course is a hands-on course in which the student will learn to identify different aircraft materials and their uses. Students will fabricate aircraft structures using aluminum by forming, bending, install and removing aircraft hardware and fasteners. Students will also investigate welding and inspect welded aircraft structures including soldering, brazing, gas and arc-welding.

AVIT 2302 Aircraft Fuel, Hydraulics, & Gear 4 credits

This course will introduce the student to hydraulic, pneumatic, and landing gear and fuel systems used in a variety of different types of aircraft. Students will inspect, check, service, and repair aircraft landing gear systems and their component. Student will remove, disassemble, inspect, and replace hydraulic and pneumatic systems components uses in different aircraft systems. Students will understand different types of fuel, fuel tanks and associated components of these systems.

AVIT 2303 Airframe Electricity & Fire Protection 4 credits

This course will introduce the student to the components and techniques used in aircraft airframe wiring and fire protection systems. The students will learn basic aircraft wiring and installation of wiring

components. Students will investigate and understand how to determine wire size, wire load, circuit components, methods of wiring aircraft for 12-volt DC, 24-volt DC, and 115-volt AC systems. Students will crimp, splice, and solder using the methods developed for aircraft to inspect, repair, and fabricate aircraft wiring systems. The student will understand different fire protection system operations and troubleshooting.

AVIT 2401 Reciprocating Engines I *3 credits*

This course will introduce the student to theory, operation, construction, overhaul, repair, and assembly of reciprocating aircraft engines. The students will learn how a four stroke five event engine operates and how they are mounted and operated on aircraft. Students will remove and install engines on aircraft. Lab is hands-on where the students will disassembly, inspect, assemble and troubleshoot four and six cylinder horizontally opposed air-cooled engines. Students will also investigate the operation, construction, and overhaul of radial aircraft engines.

AVIT 2402 Reciprocating Engines II *3 credits*

This course will introduce the student to the ignition, electrical, fire protection, and induction/exhaust used on reciprocating aircraft engines. The students will overhaul aircraft engine magnetos. This will include inspection, servicing, and troubleshooting the ignition and ignition harness. Student will remove, disassemble, inspect, and install starters, generators, alternators, and engine instruments. Students will investigate induction and exhaust systems including superchargers and turbochargers which will involve the servicing and troubleshooting of these systems.

AVIT 2403 Turbine Engines I *3 credits*

This course will introduce the student to theory, operation, construction, overhaul, repair, and assembly of turbine aircraft engines. The students will learn the different types of turbine engines used in aircraft for flight and auxiliary power. Students will learn Turbine Engine Electrical, Lubrication, Air, and exhaust systems. Students will remove and install turbine engines on aircraft. Lab is hands-on where the students will inspect, and troubleshoot axial and centrifugal flow turbine engines. Lab will consist of troubleshooting and identifying different Turbine Engine Systems such as electrical, air, lubrication, air and exhaust.

AVIT 2404 Turbine Engine II *3 credits*

This course will introduce the student to the Turbine Engine Instrument Systems, Turbine Engine Fuel and Fuel Metering Systems, Turbine Engine Ignition and Starting Systems, Turbine Engine Fire Protection Systems and Engine Inspection. Students will inspect, service, and troubleshoot the ignition and ignition harness used on turbine engines. Student will locate

procedures for fuel and metering systems on turbine engines. Students will investigate induction and exhaust systems which will involve servicing and troubleshooting. Students will inspect an engine IAW approved procedures.

BIOLOGY - BIOL

BIOL 1040 Human Biology I *4 credits*

A course on the basic biology of the human organism. Topics include simple chemistry, cell and tissue structure and function, cell division, basic genetics, DNA biology, reproduction and aging, and the structure and function of the nervous and endocrine systems. For non-science majors.

BIOL 1050 Human Biology II *3 credits*

Prerequisite: BIOL 1104 Human Biology I or

BIOL 1040 Human Biology I

A continuation of BIOL 1040. Human systems examined include cardiovascular, digestive, respiratory, urinary, skeletal, muscular and immune. The course also includes an examination of the DNA to protein connection and discusses the basics of biotechnology, evolution, ecology and human impacts on the environment. For non-science majors.

BIOL 1060 Environmental Science *3 credits*

This is an introductory course to Environmental Science. Topics include Environmental Systems, Evolution, Biodiversity, Population Ecology, Species Interactions and Community Ecology, Human Population, Soil and Agriculture, Biodiversity and Conservation Biology, Cities, Forests, and parks, Geology, Minerals, and Mining, Fresh Water, Oceans, and Coasts, Air Pollution, Global Climate Change, and Nonrenewable and Renewable Energy Sources, Waste Management.

BIOL 1310 Principles of Biology I *5 credits*

Prerequisite: H.S. biology or BIOL 1104 or BIOL 1040 within the last three years

Students will be exposed to modern concepts of the chemical and cellular bases of life. Topics include: scientific methodology; chemistry of life; structure and function of cells; energy transformations; cellular reproduction; Mendelian genetics; DNA structure, function, replication; and the processes involved in protein synthesis; the influence of genetic material in life systems, human manipulations of DNA, fundamental concepts of the theory of evolution; biological diversity and evolutionary adaptations of organisms; bacteriology; and protists diversity. This course is for Associate of Science or pre-professional students wishing to transfer as biology majors.

BIOL 1320 Principles of Biology II 5 credits**Prerequisite:** BIOL 1101 or BIOL 1310/1311

The major focus in this course is on the organism through biosphere levels of life. Topics include: diversity of plants, fungi, and animals; plant structure and function; the biology of animal systems; fundamentals of ecology and the biosphere. This course is for Associate of Science or pre-professional students wishing to transfer as biology majors.

BIOL 1510 Anatomy and Physiology I 4 credits

This course introduces major topics in anatomy and physiology for allied health students. After an introduction to the complete structural hierarchy of the human body as well as the basic physiology of homeostasis, there is focus on the chemical, cellular, and tissue levels of organization. The course is then organized to examine the structure and function of organ systems including the integumentary system, skeletal system and articulations, muscular system, and the nervous system including general and special senses. The laboratory part of the course introduces students to techniques and equipment used to study human anatomy and physiology. The early labs address laboratory safety, the basic structure and functions of the human body, principles of scientific method, and the use of the metric system to make measurements useful in the study of anatomy and physiology. The next few labs focus on cells from chemical composition to membrane function, including microscopic examination of cell structures, mitosis, and tissues. The course then shifts to examine the structure and function of organ systems including the integumentary system, skeletal system and articulations, muscular system, and the nervous system including general and special senses.

BIOL 1520 Anatomy and Physiology II 4 credits**Prerequisite:** BIOL 2205 or BIOL 1510

This course is a continuation of the study of major topics in anatomy and physiology begun in Biol 1510 Anatomy and Physiology I. The course begins with the structures and functions of the endocrine system that provide relatively slow and long-term hormonal controls. The reproductive system, development, and genetics of humans are also covered. The structure and function of the cardiovascular and lymphatic systems including immunity are included in the middle of the course. The final part of the course covers the respiratory, digestive, and urinary systems along with nutrition and body balances. The laboratory component of this course introduces students to techniques and equipment used to study human anatomy and physiology. The first lab is an examination of endocrine system anatomy as well as the major hormones and their functions. The next labs focus on the relationship between structure and function of the reproductive system, the process of human development, and pregnancy. We

then perform several types of blood tests, examine the heart including the use of dissection, and identify select blood vessels. The lymphatic system and immunity are examined next. Dissection of the fetal pig follows to introduce the respiratory, digestive, and urinary systems. The final labs take a deeper look at these organ systems.

BIOL 2300 Microbiology 4 credits**Prerequisites:** BIOL 1102 or BIOL 1320 or BIOL 2206 or BIOL 1520

This course covers the morphology and physiology of microorganisms and selected human parasites. Topics covered include basic chemistry, cell structure and function, metabolism, genetics, biotechnology, growth and control of microbes, normal human microflora, mechanisms of disease production, transmission of infectious diseases, immune responses, and the action of specific pathogens in the production of human infectious disease. There is also a brief introduction to environmental microbiology and various career options in microbiology. This must be taken at the same time as the corequisite laboratory course in Microbiology. The Microbiology Lab course exposes students to biosafety and the practice of good aseptic technique in growing and identifying live bacteria. *Do not take this course if you have already received credit for BIOL 2210.*

BIOTECHNOLOGY - BTNL**BTNL 1110 Introduction to Biotechnology and Laboratory Science 4 credits****Prerequisites:** High School Biology within the last three years, High School Biotechnology, Human Biology (BIOL 1104) or permission by the instructor

An exploration into the fascinating world of modern DNA science and laboratory analysis. The course will provide a lecture and hands-on participation in the application of modern DNA science and laboratory analysis to forensics, medicine, the environment, food science, agriculture, and the arts. A background in basic biotechnology and laboratory science will lead to the performance and practice of advanced techniques including analysis of human genes, identification of genetic elements in commercial foods containing genetically modified organisms (GMOs), transformation of an organism with a new DNA element, using antibodies in identification of a foreign protein or organism. Students will perform techniques involved in modern forensic analysis such as a restriction analysis and PCR which are often used on crime scene samples. Students will learn how to read and understand the new molecular genetic data often found in patient diagnoses of cancer and genetic diseases. The breakdown of oil by bacteria will be performed, a technique that is often used to clean the environment in oil spills.

BTNL 1120 Intermediate Biotechnology and Laboratory Science 4 credits

Prerequisite: BTNL 1110 or BIOL 1101

This course studies and performs many of the fascinating technological applications of biotechnology to agriculture and aquaculture. This course will perform plant tissue culture from obtaining an explant in a sterile environment to forming a commercial enterprise for the sale of the mature plants.

There will be a survey of currently used transgenic plants and animals in Ohio. This will include transgenic soy beans and corn. There will be an examination of the culture and use of algae in Ohio and an examination of Ohio aquaculture in general.

The course will discuss the use of recombinant DNA technology to produce genetically engineered plants and animals. Recombinant DNA technology will be applied to transfer genetic material into plants using *Agrobacterium tumefaciens*. PCR will be used to test for and identify the presence of genetically modified organisms (GMOs) in grocery store products. Genetic use restriction technology (GURT) will be evaluated.

Biotechnology is used to identify and verify strains and pedigrees. A plant variant will be identified using molecular biological methods.

The mammalian immune system will be studied. There will be an examination of the application of principles of immunology to the production of vaccines, medical and veterinary tests, and quality control tests for food purity; a diagnostic immunoblot will be constructed and used. The production of monoclonal antibodies for pharmaceuticals will be investigated. The use of farm animals in Ohio to produce antibodies will be examined. The use of plants in Ohio such as tobacco to produce antibodies will be discussed.

Algae will be maintained in a bioreactor. Fish maintenance and culture will be studied. Animal tissue culture will be studied and performed. The purity of agricultural products will be analyzed using Visible Spectrophotometry, UV Spectrophotometry, and NIR Spectrometry.

BTNL 1199 Seminar 1-6 credits

Discussion of particular problems related to chosen program and areas of interest.

BTNL 2210 Biotechnology and Laboratory Science of Microorganisms 4 credits

Prerequisites: Introduction to Biotechnology (BTNL 1110) or permission of instructor

This course explores many fascinating areas of genetic engineering and DNA science. Sterile laboratory technique, the preparation of different types of culture media, transformation, conjugation, and transduction of bacteria will be studied and practiced. Bacteria, bacteriophages, yeast, multi-cellular fungi, and nematodes

will be cultured. Many molecular biotechnology techniques will be performed on microorganisms or using microorganism products. Restriction sites on plasmid DNA and Lambda virus DNA will be mapped. Bacteria will be transformed to make Green Fluorescent Protein (GFP); the Green Fluorescent Protein will be purified and analyzed, Epigenetics and RNA interference will be studied and RNA interference will be examined in the laboratory. The course examines and practices safe handling procedures for chemicals, equipment, and living organisms, especially microorganisms, and the use of personal protective equipment. Regulations of different governmental and advisory agencies will be studied.

BTNL 2220 Advanced Biotechnology and Laboratory Science 4 credits

Prerequisites: Introduction to Biotechnology and Laboratory Science (BTNL 1110) or permission of instructor

And in-depth look into the application and business of modern biotechnology and laboratory science. Advanced Biotechnology will include an overview of fermentation processes, and identification of different types of bioreactors with an explanation of the use of each type. Useful products will be made with a bioreactor. The products made in the bioreactor will be purified and tested for impurities and contaminants using gas chromatography, NIR spectrometry, UV spectrophotometry and other methods. A research project to sequence a novel genetic segment will be developed. Bioinformatics will be used to investigate sequences in general and sequences related to the research project. Electrophoretic properties of native proteins will be investigated, Model organisms such as *Caenorhabditis elegans*, *Drosophila melanogaster*, Zebrafish, and *Arabidopsis* sp will be cultured. An important part of this course will be the development of biotechnology and laboratory science equipment and processes from common every day materials to be used by schools and other individuals in the United States and in developing nations.

BTNL 2225 Biotechnology in Business, Law, Government and Culture 2-4 credits

An examination into the ethical, legal, social, and economic issues raised by the modern world of DNA science. This course will study the history of: scientific investigation, the discovery of DNA, the discovery of the structure of DNA, biotechnology, and laboratory science. The course will analyze the ethical issues related to genetically modified organisms (GMOs), cloning, scientific research, eugenics, experimentation on humans, preimplantation genetic diagnosis, prenatal testing, general genetic testing, animal care, medical treatment and other issues. Legal issues will be studied and include patents, copyrights, and the application of

genetic use restriction technology (GURT). Economic issues associated with the stock market and patents will be examined. Biotechnology and laboratory science plays an important role in popular culture. Books, movies, and television shows based on laboratory science and biotechnology will be reviewed.

Career skills and workplace ethics will be discussed. Students will prepare a resume and examine opportunities for employment.

A trip to Europe to visit sites associated with the discovery of the structure of DNA and other important related places will be an option. Visits to the University of London-Kings College where X-ray crystallographic images of DNA were made by Rosalind Franklin, the Cambridge area and The Eagle Pub where the announcement of the discovery of DNA structure was made, and many important sites associated with molecular biology and the history of science in general will be an option.

BTNL 2280 Biotechnology and Laboratory Science Work Experience *1-8 credits*

Prerequisite: The student must have completed Introduction to Biotechnology (BTNL 1110).

Biotechnology and Laboratory Science Work Experience is a paid or unpaid work activity which relates to an individual student's occupational or learning objectives.

BUSINESS ADMINISTRATION - BADM

BADM 1199 Seminar *1-6 credits*
Discussion of particular problems related to chosen program and areas of interest.

BADM 2204 Principles of Marketing *3 credits*
Corequisite: ECON 2205

An introduction to marketing activities, analysis, strategies, and decision making. Topics include: integration of product, price, promotion, and distribution activities; research and analysis of markets, environments, competition, and customers; market segmentation and selection of target markets; and emphasis on behavior and perspectives of consumers and organizational customers. Planning and decision making for products and services in profit and nonprofit, domestic and global settings are also covered.

BADM 2206 Organizational Behavior *3 credits*
This course is an introduction to the concepts of management and organizational behavior. Concentration on ethical and social responsibility, the planning process, decision making, organizational behavior, organizational structure, power, authority, delegation, and decentralization. As part of the study of management

this course covers such topics as organizational change, staffing, leadership, motivation, communication, and managerial controls.

BADM 2208 Supervision and Leadership *3 credits*
Student will develop leadership skills, practices, and a personal philosophy of leadership. The course will cover leadership theories and effective methods.

BADM 2213 Personal Finance *3 credits*
This course will provide students with the tools needed to develop and maintain a personal financial plan. Students will learn practical strategies for investing, saving, budgeting, using credit, paying bills, and filing tax returns. Students will also research purchase decisions related to automobiles, housing, and insurance.

BADM 2216 Business Ethics *3 credits*
This course is an introduction to various ethical topics and situations the office or computer professional may encounter in today's workplace. Examining ethical dilemmas and essential tools for analyzing them, this course will bring real world, hands-on experience to common ethical dilemmas.

BADM 2220 Human Resources Management *3 credits*
An introduction to structure and functions of personnel activity, recruitment and placement, performance appraisal, salary administration, employee benefits, personnel planning, management development, and labor relations.

BADM 2222 Business Finance *3 credits*
Prerequisites: ACCT 1102 OR ACCT 2230, & ECON 2205

Course is an introduction to basic concepts, principles, and analytical techniques of financial management. Topics include the whole scope of the financial system and its functions: (1) the markets, (2) the institutions, and (3) the principles and concepts of financial management which guide the participants in making sound decisions.

BADM 2251 Business Law I (The Legal Environment) *3 credits*

This course is an introduction to the legal and social environment of business. This course covers ethics, court jurisdiction, dispute resolution, regulation of business, torts, business crimes and international law. This course also covers topics in agency relationships, stakeholders, shareholders, forms of business organizations, government regulations, employment law, antitrust regulations, and property rights.

BADM 2252 Business Law II (The Formation & Regulation of Business) 3 credits

This course is an introduction to the numerous legal topics including contracts, agreements, contractual capacity, consideration, form of contract, third persons, and genuineness of assent, legality, discharge and breach of contract. This course also covers sales and leases, negotiability, bank/customer relations, secured transactions and bankruptcy.

BADM 2272 Business Communications 3 credits

A practical introduction to interpersonal communication as it applies to the modern workplace. Students will create a variety of business documents and communications using current, industry relevant, technology. Special emphasis will be placed upon strategies for communicating in a team setting. This course will assist students in developing the written, oral, and collaborative skills necessary for future business courses, internships, and professional positions.

BADM 2290 Problems in Business 3 credits
Prerequisites: ACCT 1102 OR ACCT 2230, BADM 2251, CSCI 2218, ECON 2205

A comprehensive survey course designed to test the student's mastery of the core courses required for the Associate Degree. The overall subject matter deals with business planning. The course is a series of projects: market research, case studies in management, a presentation, labor negotiations, a complete business plan, and a comprehensive final. Successful completion of the course requires a portfolio of reports covering the assigned projects.

BADM 2299 Seminar 1-6 credits
Prerequisites: second year in Business Management program and permission of instructor and full-time discipline faculty.

This course will be a discussion of particular problems related to the student's chosen program and areas of interest.

CHEMISTRY - CHEM

CHEM 1120 Introduction to Chemistry 5 credits
Prerequisite: One of the following:

- 2 years of college preparatory math with a grade of "C" or higher
- Appropriate score on college placement exam
- MATH 101 or MATH 106 or MATH 1106

A beginning chemistry course designed for students in the health science programs or those desiring to fulfill a non-science general education requirement. Topics covered include measurement, atomic theory, bonding and chemical formulas, chemical reactions, stoichiometry, kinetic molecular theory, gas laws, solutions, acid-base

chemistry, reaction rates, and oxidation/reduction. Laboratory exercises are designed to complement the lecture.

CHEM 1124 Principles of Organic and Biological Chemistry 5 credits

Prerequisite: High school chemistry or CHEM 1120.

An introduction to organic and biological chemistry, incorporating functional groups and reactions, is followed by the study of biochemicals, including carbohydrates, proteins, lipids, and enzymes. In addition, nucleic acids, protein synthesis, energy, and metabolism will be covered. Desirable for students interested in Allied Health.

CHEM 1151 First Year Chemistry I 4 credits

Prerequisite: CHEM 1120 or 1 year of high school chemistry & high school algebra or its equivalents
Corequisite: CHEM 1161

A college level chemistry course covering measurement, significant figures, moles, chemical formulas, chemical equations, stoichiometry, acids and bases, oxidation-reduction, thermochemistry, quantum mechanics, atomic orbitals, and bonding theories.

CHEM 1152 First Year Chemistry II 4 credits

Prerequisite: CHEM 1151
Corequisite: CHEM 1162

A continuation of the study of college chemistry covering gases, intermolecular forces of attraction and phase changes, solutions and colligative properties, chemical kinetics, chemical equilibrium, acid-base equilibria, thermodynamics, electrochemistry, and descriptive chemistry.

CHEM 1161 First Year Chemistry Lab I 1 credit

Corequisite: CHEM 1151

Laboratory experiments which support many of the chemical concepts covered in Chemistry 1151. Laboratory techniques and data analysis are emphasized.

CHEM 1162 First Year Chemistry Lab II 1 credit

Prerequisite: CHEM 1151 & CHEM 1161

Corequisite: CHEM 1152

Laboratory experiments which support many of the chemical concepts covered in CHEM 1152. Laboratory techniques and data analysis are emphasized.

CHEM 1199 Seminar 1-6 credits

This course will be a discussion of particular problems related to chosen program and areas of interest.

CHEM 2201 Organic Chemistry I 4 credits

Prerequisite: CHEM 1161 and CHEM 1162

Corequisite: CHEM 2211

This course is designed to give the student extensive background in bonding, nomenclature, and reactions

of alkanes, cycloalkanes, alkenes, alkynes, alcohols, alkyl halides, conjugated alkadienes, allylic systems and arenes. Addition, elimination, nucleophilic substitution, and electrophilic aromatic substitution reactions are covered including their mechanisms. Spectroscopy of organic compounds is introduced.

CHEM 2202 Organic Chemistry II 4 credits

Prerequisite: CHEM 2201

Corequisite: CHEM 2212

This course is designed to give the student extensive background in bonding, nomenclature, and reactions of organometallics, alcohols, diols, ethers, epoxides, aldehydes and ketones. Reactions of these types of compounds or leading to their formation will be covered, including electrophilic aromatic substitutions and nucleophilic additions to the carbonyl group to enolates and organometallics. Spectroscopy of organic compounds will be introduced. The course is also designed to give the student extensive background in bonding, nomenclature, and reactions of carboxylic acids and their derivatives, amines, aryl halides and phenols. Reactions of these types of compounds or leading to their formation will be covered. Basic biomolecules such as carbohydrates, lipids, amino acids, and proteins and nucleic acids will be introduced with an emphasis on their basic primary, secondary and tertiary structures, as appropriate, and certain simple properties and reactions from an organic chemical perspective.

CHEM 2211 Organic Chemistry I Lab 1 credit

Prerequisite: CHEM 1151, CHEM 1152, CHEM 1161 and CHEM 1162

Corequisite: CHEM 2201

A course designed to give the student hands-on laboratory experience with the concepts of CHEM 2201 and the use of experimental apparatus and techniques in the practice of organic chemistry. Emphasis will be on microscale technique due to its safety and economy of time and resources as well as its frequent need in biochemical, natural product, environmental and pharmaceutical fields; however, some macroscale experiments may be performed. Experiments will include molecular modeling of compounds studied in CHEM 2201; basic techniques of recrystallization, melting point and boiling point determination, distillation, extraction, chromatography, and spectroscopy; the S_N2 reaction mechanism; selected addition and elimination reactions of alkenes, alcohols, and alkyl halides; 1,2 and 1,4 additions and Diels-Alder cycloaddition of conjugated dienes; infrared, gas chromatography and UV/visible spectrophotometry.

CHEM 2212 Organic Chemistry II Lab 1 credit

Prerequisites: CHEM 2201 and CHEM 2211

Corequisite: CHEM 2202

A course designed to give the student hands-on

laboratory experience with the concepts of CHEM 2202 and the use of experimental apparatuses and techniques in the practice of organic chemistry. Emphasis will be on microscale technique due to its safety and economy of time and resources as well as its frequent need in biochemical, natural product, environmental and pharmaceutical fields; however, some macroscale experiments may be performed. Experiments will generally cover experimentally the concepts studied in CHEM 2202 including Friedel-Crafts, nitration, and other electrophilic substitution reactions of the aromatic ring; oxidation of alcohols; epoxidation of alkenes; preparation and reaction of organometallic compounds; the aldol condensation; and infrared and UV/visible spectrophotometry formation and reaction of carboxylic acids and their derivatives; amines; phenols; versatile synthetic techniques such as the acetoacetic ester and malonic ester syntheses and aromatic diazonium salt reactions; carbohydrates; lipids; and proteins and other polymers.

COLLEGE SUCCESS - COLL

COLL 1100 College Success 2 credits

This is a performance based course comprised of two components designed: (1) to introduce students to basic computer skills, Microsoft Word, Excel, and PowerPoint, Internet, and LRC resources; (2) to increase student success in college by developing self-esteem, personal responsibility, self-motivation, resource management, study skills, and academic and career planning.

COLL 1110 Success on the Global Stage 1 credit

This is a lab-based course that is attached to the SSCC Study Abroad Program. The course will (1) teach students the process of traveling abroad: from procuring passports, to proper packing to, learning to navigate foreign cities, and (2) students will experience historical sites, cultural activities, and will engage with the local population of the host countries.

COMMUNICATIONS - COMM

COMM 1110 Interpersonal Communication 3 credits

An introduction to the principles of effective interpersonal communication. Relevant topics include self concept, perception, listening, verbal and nonverbal communication, emotions and conflict resolution.

COMM 1115 Fundamentals of Effective Speech 3 credits

This course encompasses the composition and presentation of speeches. The objective is to help individuals speak effectively to other individuals or groups. The focus will be the study of organization, development, delivery, and purpose of various types of speeches.

COMPUTER SCIENCE - CSCI

CSCI 1101 Computer Keyboarding *1 credit*

In this course, students will master the computer keyboard by touch for personal use or in preparation for work in a business setting. Students will learn proper keyboarding techniques while keying alphabetic, numeric, and 10-key numeric keypad characters. Students will complete activities online, where drills will facilitate learning the keyboard and developing speed and accuracy.

CSCI 1104 Google Apps & Internet Safety *3 credits*

Introduction to Google establishing a Google account, utilizing Google Drive and Google Docs, Google Slides, Google Sheets, Google Maps, Common Google Apps, and Google Arts and Culture.

CSCI 1109 Word Lab *1 credit*

Hands on computer use with word processing software. Familiarizes the student with problem solving using business application word processing preparation and editing according to Microsoft Word standards, methodology and terminology. We will be utilizing Microsoft Word 2016 software as our word processing program.

CSCI 1114 Powerpoint Lab *1 credit*

Hands on computer use with presentation software. Familiarizes the student with problem solving using business application and presentation skills using Microsoft PowerPoint standards, methodology and terminology. We will be utilizing Microsoft Word 2016 software as our presentation software program.

CSCI 1121 Introduction to Computer Programming *3 credits*

This course is designed to familiarize students with the fundamental concepts and techniques of a computer programming language. Using current programming languages, students will design, code and test programs using the basic structures of sequence, data types, control structures, algorithm development, and program design with functions.

CSCI 1150 IT Essentials *3 credits*

This course is designed to introduce the student to various types of computer operating systems. It will familiarize the student with the basic commands and fundamental concepts needed to work in these systems. We will discuss single user, multitasking and multi-user systems along with user interfaces.

CSCI 1155 LINUX *3 credits*

This course is intended for students who want to learn about the Linux operating system and prepare to pass

the Linux+ certification exam from CompTIA (Powered by LPI). It does not assume any prior knowledge of Linux and is geared toward those interested in systems administration as well as those who will use or develop programs for Linux systems. This course provides comprehensive coverage of topics related to Linux certification, including Linux distributions, installation administration, X-Windows, networking, and security.

CSCI 1199 Seminar *1–6 credits*

This course is designed to explore more advanced topics with students who are either interested in a particular subject matter or are gearing the education to a specific area of computer science.

CSCI 2020 Implications of IT *3 credits* **Prerequisites: CSCI 1150**

This course is designed for students will provide students with an introduction to the social, legal, philosophical, political, economic and ethical issues in the arena of information technology. The primary goal for the course is to develop a professional who understands the implications of what they create and how it fits into society at large.

CSCI 2205 Mobile Device Programming *3 credits* **Prerequisites: CSCI 1121**

This course prepares students to develop applications for the Google Android platform. Students will be able to build useful apps with Java and other integrated development environments. Object-oriented programming techniques will be reinforced.

CSCI 2213 Access *3 credits*

Introduction to database software using adopted Microsoft Access release edition to create databases, understand data entry, record-keeping, working with fields, tables, forms, reports, queries, sharing data, and using database tools in preparation for Microsoft Access Exam.

CSCI 2216 Outlook *3 credits*

Introduction to using Outlook as a contact management system by managing time, tasks, email, and projects. Includes effective and efficient management of message services including automated and message security, managing schedules, managing contacts and personal contact information, and information organization in preparation for Microsoft Outlook Exam.

CSCI 2217 PowerPoint *3 credits*

Introduction to presentation software using adopted Microsoft PowerPoint release edition for effective, efficient, dynamic presentations with creating of master presentations, templates, slide content, and collaborating and delivering presentations and preparation for the Microsoft PowerPoint Exam.

CSCI 2218 Excel 3 credits

Introduction to spreadsheet software using adopted Microsoft Excel release edition to create, design, edit, and enhance spreadsheets and workbooks, format worksheets and workbooks, working with and understand numerical data entry, basic formulas and functions, design charts, enhance with pictures and logos, secure and share data, in preparation for the Microsoft Excel Exam.

CSCI 2219 Word Processing I 3 credits

Beginning word processing course using adopted Microsoft Word release edition. Focus will be on creating, formatting, editing, saving, retrieving and printing documents using word processing software. Included will be maintenance and customization of documents, creating and formatting tables and enhancing documents with special features in preparation for the Microsoft Word Exam. This course is identical to OFIT-1130-Word and students will only be allowed credit for either OFIT-1130 or CSCI-2219. Credit cannot be allowed for both courses.

CSCI 2233 CISCO Introduction to Networks 3 credits

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

CSCI 2234 Server Administration 3 credits
Prerequisite: CSCI 1150

This course is designed to teach basic server administration concepts on a LAN network server. It is a continuation of the concepts introduced in CSCI 1150. The course familiarizes the student with server administration and management concepts.

CSCI 2236 CISCO Routing & Switching Essentials 3 credits**Prerequisites: CSCI 2233**

Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

CSCI 2239 CISCO Enterprise Networking, Security, & Automation 3 credits**Prerequisites: CSCI 2236**

This course is intended to be the third and final course of the CCNA track. The course provides comprehensive coverage of topics related to designing, securing, operating, and troubleshooting enterprise networks. This course covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access. ENSA also introduces software-defined networking, virtualization, and automation concepts that support the digitalization of networks. Students gain skills to configure and troubleshoot enterprise networks, and learn to identify and protect against cybersecurity threats. They are introduced to network management tools and learn key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation.

CSCI 2240 Systems Analysis 3 credits
Prerequisites: CSCI 1150

This course introduces the student to the study of systems analysis. The course covers information systems, equipment requirements, and modeling of new systems. The cases, projects and exercises give the student a wide variety of experiences and options to explore and apply the concepts of system analysis.

CSCI 2246 IT Fundamentals 3 credits

This course is designed to cover all the basic fundamental skills required to be an IT professional. This course will cover diagnostics, repair and upgrade of computers and peripherals. The course will provide hands-on experience. It will familiarize the student with hardware and troubleshooting concepts.

CSCI 2254 Computer Architecture & Design 4 credits**Prerequisites: CSCI 1121**

This is an introductory course into computer architecture. This class will assemble a single board computer with a lecture section before each section to describe how the sections works. Use of Oscilloscope, Digital Logic probe and Millimeter are used to make measurements and troubleshoot each section.

CSCI 2255 Computer Programming Logic 3 credits**Prerequisites: CSCI 1120**

This course is designed to introduce basic programming and logical thinking skills. Students will learn problem definition, how to develop logical problem solving steps and then flowchart and diagram them. This course gives hands-on experience.

CSCI 2260 Microcontroller Programming *3 credits*

This course is intended for students who want to learn about C Programming and how it can be interfaced with a microcontroller. It does not assume any prior knowledge of C Programming and is geared toward those interested in coding and having that code effect hardware in the real world. The course provides comprehensive coverage of topics related to C Programming, including data types, program loops, functions, storage classes and libraries.

CSCI 2263 HTML 5 Programming *3 credits*

Students will learn introductory concepts in building Web sites with HTML coding, adhering to HTML 5 standards. During this course students will learn to code links, list tables, and other Web page elements. Students will demonstrate formatting using CSS and also acquire beginning knowledge in scripting languages.

CSCI 2265 Introduction to Game Development *3 credits*

Prerequisites: CSCI 1145 and CSCI 1165

Students will learn how to plan, design and create games in three different game design engines. Students will learn how to develop ideas, storyboard plots, design characters and interaction, and then assemble all elements into fully functional games and simulations. Students will learn the basics of gaming, simulation, interaction and 3-D technologies.

CSCI 2270 Co-Op - Interactive Media *2-12 credits*

Prerequisite: Student must have completed 1st year of the 455A.

This Co-Op will give the student paid or unpaid practical working experience. Each student will be assigned working assignments with the various Private/Public work sites with agreements with SSCC including SSCC. The student will be assigned web design/development, video/audio production, social media, multimedia application development or training duties.

CSCI 2275 Professionalism *1 credit*

This course will better prepare students on how to conduct themselves in a professional work setting. Topics include: career planning and exploration, self assessment, career research, resume development, interview skills, Cooperative Education policies and procedures and other skills that bolster professional success.

CSCI 2280 Co-Op (Technical Support) *2-12 credits*

Prerequisite: SSCC computer science instructor must approve students for the course.

This Co-Op will give student paid or unpaid practical working experience. Each student will be assigned

working assignments with the various Private/Public work sites with agreement with SSCC. The student will be assigned repair, helpdesk, and support with hardware and software.

CSCI 2290 Computer Technology Capstone *3 credits*

Prerequisite: CSCI 1155, CSCI 1150, CSCI 2246, and ENGL 1102

This course is designed to test the student's mastery of the core courses required for the Associate Degree in Computer Information Technology. The overall subject matter deals with problem solving. The course will focus on hardware, software, programming, networking and presenting. Selection of the main project is made in consultation with, and must be approved by, the instructor.

CRIMINAL JUSTICE - CJUS**CJUS 1101 Introduction to Law Enforcement** *4 credits*

This course covers the spectrum of policing in America. It is a comprehensive introduction to policing including its historical evolution, recruiting, community policing and use of force perspectives. The course covers the various policing agencies at the local, state, and federal levels. A review of the recruitment process for becoming an officer is provided so students can learn of the requirements for applying to a certain agency or department. This course will examine police administration from multiple perspectives; from a systems perspective emphasizing the interrelatedness among units and organizations; from a structural perspective emphasizing administrative principles, management functions, and the importance of guidelines; a human behavioral perspective emphasizing the human element in organizations; and a strategic management perspective emphasizing communications and information systems, performance evaluations, strategies and tactics to increase effectiveness of police agencies.

CJUS 1102 Basic Law Enforcement I *9 credits*

Prerequisite: Acceptance into Basic Peace Officer Training Academy

This course covers the first half of 728 + hour Basic Peace Officer Training Academy. Basic Law Enforcement I and II provide the student with the fundamentals of entry-level peace officer training for employment as a law enforcement officer. The student will learn the technical and social skills needed to perform in the area of law enforcement. There is an increasing demand for better educated law enforcement personnel so the successful student can expect job opportunities as a peace officer. This program is offered in conjunction with the Greenfield Police Department. This is a state certifying academy and is conducted under the

guidelines mandated by the Ohio Peace Officer Training Commission and the Ohio Attorney General's Office.

CJUS 1103 Basic Law Enforcement II 9 credits
Prerequisite: CJUS 1102

This course covers the second half of 728 + hour Ohio Basic Peace Officer Training Academy. Basic Law Enforcement I and II provide the student with the fundamentals of entry-level peace officer training for employment as a law enforcement officer. The student will learn the technical and social skills needed to perform in the area of law enforcement. There is an increasing demand for better educated law enforcement personnel so the successful student can expect job opportunities as a peace officer. This program is offered in conjunction with the Greenfield Police Department. This is a state certifying academy and is conducted under the guidelines mandated by the Ohio Peace Officer Training Commission and the Ohio Attorney General's Office.

CJUS 1104 Private Security Training Course 6 credits

This 157 hour training academy is designed to meet the requirements of the Ohio Revised Code and the Ohio Administrative Code for armed private security officer certification and will address all academic and skill areas of basic private security duties.

CJUS 1105 Asset Protection & Loss Prevention 3 credits

The course focuses on administration and management issues related to corporate security functions, including strategic and operational management, risk management, contract security services, management of emergencies and loss prevention. Students will assess vulnerabilities and recommendations of the 9/11 Commission Report on the terrorist attacks against the United States. Facility protection standards are used to determine appropriate courses of action, from a security management perspective, using threat models and risk assessment concepts. Research is required and application of critical thinking is applied to address external threats and countermeasures. Practical exercises are conducted to apply research findings.

CJUS 1111 Introduction to Correction 2 credits

This course will examine the institutional and non-institutional aspects of contemporary corrections. Community corrections, probation, parole and other forms of intermediate sanctions and incarceration alternatives will be analyzed. The operations of jails and prisons will be evaluated by focusing on safety, security, classification and programming.

CJUS 1115 Interpersonal Communication 2 credits

This course analyzes the basis of effective communication in corrections and law enforcement by focusing on report writing, interviewing and interpersonal communication skills. Students will learn note-taking techniques and learn how to gather information from an interview/interrogation. Verbal and non-verbal communication methods are explored in addition to the planning, organizing, preparation and editing processes for reports.

CJUS 1125 Criminal Law 3 credits

This course will explore the history, scope and nature of criminal law. This course will analyze the general nature of crime, constitutional limits on crime and general principals of criminal liability. Topics include legal language and machinery, parties to crime, classification of offenses, act and intent, capacity to commit crime and various defenses. Primary emphasis will be on common law and modern statutory criminal codes. Students are provided knowledge of the building blocks of criminal law to include elements of crimes and defenses to criminal charges. The role of the police, criminal courts and attorneys in the administration of the criminal justice system will be discussed in detail. The course will teach the student how to analyze and brief criminal cases and identify and discuss criminal issues. An overview of the criminal justice process and rules of evidence will be provided.

CJUS 1199 Seminar 1-6 credits

This course will be a discussion of particular problems related to the student's chosen program and areas of interest.

CJUS 2201 Criminology & Victimology 3 credits

The first part of this course will explore the origin, nature and extent of crime through an analysis of various causation theories. The various types of crimes, classifications of offenders and an overview of society's response to criminal behavior will be discussed. The second part of this course will introduce students to the role of victimology in today's criminal justice system. The discussion will focus on specific theories and coping strategies pertaining to domestic abuse, sexual assault, child maltreatment, elder abuse, property crime and homicide. Information regarding the victim's rights movement, legislation and programming will be incorporated throughout the course.

CJUS 2215 Ethics in Criminal Justice 2 credits

This course is an examination of issues of professional and ethical behavior within the criminal justice system. Key issues examined include professional behavior of the individual and the agency. Current topics such as sexual harassment, accreditation and maintenance standards and community relations are also discussed.

CJUS 2218 Police Administration *3 credits***Prerequisite:** CJUS 1101, CORR 101 or LENF 101

This course will examine police administration from multiple perspectives; from a systems perspective emphasizing the interrelatedness among units and organizations; from a structural perspective emphasizing administrative principles, management functions and the importance of guidelines; a human behavioral perspective emphasizing the human element in organizations; and a strategic management perspective emphasizing communications and information systems, performance evaluations, strategies and tactics to increase effectiveness of police agencies.

CJUS 2220 Restorative Justice *2 credits*

This course will introduce students to the restorative justice movement in the criminal justice system. The historical background as well as the philosophies and practices resulting from this movement will be explored. Students will learn the significance of victim–offender mediation, community service and other reparation–based practices that seek to not only help heal those victimized by crime but also help reintegrate offenders into and with the community.

CJUS 2230 Critical Incident Management *2 credits*

This course will explore the volatile nature of managing critical incidents that occur within the field of corrections and law enforcement. Specific focus will be on the dynamics and methods involved in hostage negotiations, intervention strategies during a critical incident and the utilization of effective interpersonal communication skills. Team intervention approaches will be discussed along with information regarding post–incident debriefing.

CJUS 2233 Criminal Investigation *2 credits*

This course will introduce the fundamentals of criminal investigations through practical and theoretical approaches. Interviewing strategies, evidence collection and crime scene processing will provide a basis on which to manage an investigation and prepare for its presentation.

CJUS 2234 Constitutional Criminal Procedures *3 credits*

The first part of this course will examine the United States Constitution by applying the Bill of Rights to the operations of the criminal justice system. Information regarding judicial philosophies, interpretations and decisions will provide a basis on which to discuss the role of the United States Supreme Court and its ability to affect law. The second part of this course will examine a multitude of legal issues facing correctional staff. Sources of correctional law and specific constitutional amendments will structure discussions regarding the

confinement and treatment of incarcerated inmates as well as those supervised in the community.

CJUS 2235 Law Enforcement Internship *2 credits***Prerequisites:** CJUS 1101, CORR 101 or LENF 101 and sophomore standing and good academic standing

On–the–job placement, selected by the College or by the student and approved by the College, will provide the student an opportunity to experience working in a criminal justice agency.

CJUS 2236 Current Issues in Criminal Justice *3 credits*

The first part of this course will explore major issues facing corrections today by analyzing the social context in which punishment occurs. Statistical data and varying points of view will broaden the scope of the topics, allowing students to examine the impact of these correctional problems on the criminal justice system and society. Topics will include Prison Violence, Gangs, Institutional Crowding, Societal Change and its Impact on Correction, Inmate Subcultures, Female Offenders, Juvenile Offenders, Rehabilitations and Treatment Needs of Offenders, Correctional Privatization and The Death Penalty. The second part of this course will examine the day-to-day policing and the stress found in both the daily grind and the division and stigmatization of certain branches of a law enforcement agency. Topics will include the dangers of misplaced loyalties, policing priorities, and Restorative policing.

CJUS 2240 Correctional Case Management *3 credits***Prerequisite:** CJUS 1101

The first part of this course will analyze the function of probation, parole and community corrections as well as the role of those persons/officers conducting supervision of criminally convicted adults and juveniles. Offender classification, supervision and programming are examined with emphasis on case law, ethical issues and current trends. The second part of this course will examine correctional counseling, treatment and intervention practices from an intuition and non–intuition perspective. Specifically, the student will be introduced to methods of conducting initial assessments in order to determine offender risks and needs. Case planning practices including goal setting and referral will be discussed with emphasis placed on special populations of correctional offenders.

CJUS 2241 Comparative Criminal Justice Systems *3 credits***Prerequisite:** CJUS 1101, CORR 101 or LENF 101

This course examines the differences in criminal justice systems of nation states, sovereignty issues and the impact of international crime on the quality of life and

its ability to undermine the rule of law and democratic government.

CJUS 2245 Crime Scene Investigation 3 credits

Prerequisite: CJUS 2233

This course will introduce students to the role of the crime scene investigator in today's criminal justice system. Major topics include the identification, collection and preservation of physical evidence at the crime scene.

CYBERSECURITY & FORENSICS - CYBR

CYBR 1101 Database Security 3 credits

To understand the importance of database security by developing the know-how and skills to protect a company's technology infrastructure, intellectual property and future prosperity within organizations.

CYBR 1115 Introduction to Computer Forensics and Cyber Crime 3 credits

This course is an introduction into the concepts, terminologies, and terms that have been developed to communicate and understand the history of computer forensics and cyber-crime.

CYBR 2205 Terrorism and Homeland Security 3 Credits

This course seeks to examine the history of terrorism and its manifestations in the contemporary world. The course will cover nationalistic terrorism, religious terrorism and domestic and special interest group terrorism. The course concludes with an examination of the political and ethical implications of the "global war on terror," and homeland security.

CYBR 2210 Introduction to Cybersecurity 3 credits

This course introduces the concepts and understanding of the field of computer security and how it relates to other areas of information technology. Topics include security threats, hardening systems, securing networks, cryptography and organizational security policies.

CYBR 2215 Advanced Computer Forensics and Cyber Crime 4 credits

Prerequisite: CYBR 1115

This course is an introduction into the concepts, terminologies, and terms to skillfully complete a computer investigation from acquiring digital evidence to reporting findings.

CYBR 2220 Ethical Hacking 3 credits

Prerequisite: CYBR 2210

This course is designed for students who want to develop penetration testing skills to enable them to

identify information-system vulnerabilities and effective remediation techniques for those vulnerabilities. This course is also designed for individuals who are preparing to take the CompTIA PenTest+ certification exam PT0-001, or who plan to use PenTest+ as the foundation for more advanced security certifications or career roles.

CYBR 2230 Advanced Cybersecurity 3 credits

Prerequisite: CYBR 2210

This course covers the duties of cybersecurity analysts who are responsible for monitoring and detecting security incidents in information systems and networks, and for executing a proper response to such incidents. The course introduces tools and tactics to manage cybersecurity risks, identify various types of common threats, evaluate the organization's security, collect and analyze cybersecurity intelligence, and handle incidents as they occur. Ultimately, the course promotes a comprehensive approach to security aimed toward those on the front lines of defense.

ECONOMICS - ECON

ECON 1199 Seminar 1-4 credits

This course will be a discussion of particular problems related to chosen program and areas of interest.

ECON 2205 Principles of Microeconomics 3 credits

This course looks at individual choice and how the choice is influenced by economic forces. Subjects that will be covered include supply and demand, economic models, market structure, production and cost analysis, factor markets, and choice and decision making.

ECON 2206 Principles of Macroeconomics 3 credits

This course looks at the Aggregate Economy and its effects on Businesses and Consumers. Subjects that will be covered include the basic theory of national income analysis, unemployment, inflation, monetary policy, fiscal policy, and international policy issues.

EDUCATION - EDUC

EDUC 1000 Introduction to Child Development 3 credits

This course focuses on applying knowledge of the characteristics and needs of young children, prenatal to age twelve, 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.

EDUC 1101 Introduction to Education 3 credits

This introductory course is designed to acquaint students with the field of education. Student will examine technology and its impact on schools, ethical and legal issues facing teachers, effective teaching strategies, diversity in the classroom, social problems and how they relate to schools, standard-based education, professionalism in education and current curricula. Students will complete a variety of activities including writing reflective essays for inclusion in the student portfolio.

EDUC 1102 Foundations of Education 3 credits
Prerequisite: EDUC 1101

This course is an examination of the relationship between school and society through the lens of current issues in education. A variety of perspectives will be examined, including historical, philosophical, ethical, and legal. Through classroom observations and journal entries, students will develop an understanding what it means to be reflective practitioner. Students will also submit final portfolios for review. A forty-hour field component in public school classroom is required; consequently, students will be required to pass a background check. Observations will be evenly distributed among early childhood, middle school, high school, and special education programs.

EDUC 1110 Creative Arts for the Young Child 3 credits**Prerequisite: EDUC 1140**

This course is designed to prepare those in early childhood education with basic music and art activities for the young child. An exploration of art and music instructional methods, learning sequences and teaching strategies will be emphasized. Eight hours of classroom observation of young children involved in art and/or music are required.

EDUC 1118 Guiding Children's Behavior & Learning 3 credits**Prerequisite: EDUC 1101 or EDUC 1140**

This course is designed to prepare those in education with conceptualizations of adult-child and child-child relationships. Students will be introduced to principles and skills that will allow them as future educators to relate to children in ways that will maximize their potential. Students in the Early Childhood program will observe in a preschool setting. Students in the Paraprofessional Program may choose an older grade.

EDUC 1120 Language/Literacy Development in the Young Child 2 credits

This course is a study of the stages of language and literacy development in the young child. The student will observe a minimum of four hours in an early childhood classroom setting.

EDUC 1140 Introduction to Early Childhood Education 3 credits

Candidates will demonstrate essential understanding of young children's characteristics and needs, knowing and understanding the multiple influences on development and learning, and using developmental knowledge to create healthy, respectful, supportive and challenging learning environments. Candidates will be subject to pass a mandatory background check.

EDUC 1145 Observation/Assessment of Children 3 credits

This course is a study of various methods of observation and assessment techniques that are utilized in an early childhood classroom setting. Students will observe a minimum of four hours in an approved early childhood classroom setting.

EDUC 1163 Social Studies for the Young Child 3 credits**Prerequisite: EDUC 1140**

This course is designed to provide students with the natural and social science concepts that are taught in the early childhood and elementary classroom. This course will focus on the relevance of history and geography, the study of people, and the interaction of people with others and the world around them. The course will touch upon children's sense of self and the importance of developing social skills. Strategies for engaging and empowering young learners to become active, democratic citizens will also be presented.

EDUC 1199 Seminar 1-3 credits

This course will be a discussion of particular problems related to chosen program and areas of interest.

EDUC 2210 Administration of Early Childhood Programs 2 credits**Prerequisite: EDUC 1140**

This course is designed to prepare students for administrative and leadership roles in the field of early childhood education. An overview of various types of early childhood programs and philosophies will be presented. Relevant topics including program planning, implementing, leading and managing personnel, financing and budgeting, and establishing policies will be discussed. A review of current licensing laws as established by the Ohio Department of Job and Family Services will also be included in the course. Four hours in an approved setting is required.

EDUC 2215 Health, Safety, and Nutrition 3 credits**Prerequisite: EDUC 1140**

In this course, students will examine and discuss content and issues related to the health, safety, and nutrition of young children birth through age 5. Student will

explore information that relates to the development of safe learning environments, healthy nutrition, and other positive interactions that support optimal growth and development of young children. Ways to engage the family in supporting these practices as well as licensing rules and information about required training will be included.

EDUC 2217 Science & Math Experiences 3 credits
for the Young Child

Prerequisite: EDUC 1140

The purpose of this course is to provide early childhood educators guidelines for the direct and indirect techniques of the effective discovery science teacher. It is designed to help teachers discard biases toward science and to build upon science knowledge they already have to enable confident work with young children. The student will observe a total of 4 hours in an approved early childhood classroom setting.

EDUC 2219 Infant/Toddler Care & Education 3 credits

Prerequisite: EDUC 1140

This course uses a relationship-based model as a framework for understanding how infants and toddlers grow and learn with the support of their families and teachers. The course consists of three main sections. The first section sets the stage by focusing on early experiences, family relationships, theoretical perspectives, and why and how to observe and document children's interests, development, and behavior. The second section describes the remarkable development of children in the prenatal period and in the emotional, social, cognitive, language, and motor domains. The third section of the course covers responsive program planning including the importance of developing relationships, providing guidance, and working with children with special needs..

EDUC 2220 Foundations of Literacy 3 credits

Prerequisite: EDUC 1101 and ENGL 1101

This course is designed to provide students with an understanding of the reading process. Contemporary theories and issues regarding literacy learning will be addressed. Current approaches to reading instruction including skill instruction, word-recognition instruction, ability grouping, whole-language instruction, literature-based instruction, invented spelling, and phonics will be covered. Students will become familiar with influences on the reading process such as cultural, linguistic, and ethnic diversity as well as developmental influences including environmental, emotional, social, and cognitive limitations and experiences. Classroom assessment alternatives will also be addressed. Ten hours of literacy instruction in inclusive settings are also required.

EDUC 2224 Paraprofessional Practicum 3 credits

Corequisite: EDUC 2225

This practicum course is designed to provide students with opportunities to apply their skills and knowledge gained in college coursework to inclusive classroom settings. There are two placements for this course. Students will be placed in 2 settings within the preschool to 8th grade band. Students will do 140 hours in each placement. Students will maintain a journal and time sheet which is to be submitted weekly to the instructor. Students will provide instructional, behavioral, and other support to the mentor teacher as they request.

EDUC 2225 Paraprofessional Seminar 3 credits

Prerequisite: minimum GPA 2.5

Corequisite: EDUC 2224

This seminar is designed to accompany the paraprofessional practicum, EDUC 2224. The seminar will provide students with opportunities to share and critique their onsite experiences. This course assists students in making informed decisions about becoming a teacher and ensures that they have an up-to-date picture of the ever-changing face of education. Issues in reform, professionalism, diversity, and using technology in day-to-day teaching situations are emphasized throughout the text. Students will analyze theory and practice as it relates to educational paraprofessionals.

EDUC 2228 Families, Communities & Schools 3 credits

This course is a study of parent and community involvement in education using historical, educational, psychological, ethnic-socio diversity, and sociological perspectives.

EDUC 2230 Children's Literature with Reading Approaches 3 credits

Prerequisite: ENGL 1101 & EDUC 1140

This course is an introduction to children's literature with emphasis placed on selection and use of books and activities for children from infancy through age 12. Students will explore the various genres of children's literature with particular attention to award-winning authors and illustrators and their books. Students will be able to identify high quality children's literature in each genre and develop age-appropriate lesson plans. Students will also explore various early literacy instruction techniques and teaching reading through literature.

EDUC 2234 Technology in Education 3 credits

This course provides an introduction to integrating technology in the classroom. A world of ongoing technological change invites us to rethink the ways technology is used in K-12 schools. A knowledge-based, technology-driven global society demands that teachers and students possess new and expanded digital "life skills." These new competencies have been

summarized as “21st Century Skills” and the “ISTE Standards for Educators and Students.” Students will learn how digital tools and technologies can engage teachers and students while expanding their understanding of academic material across the grade levels.

EDUC 2238 Young Adult Literature *3 credits*

Prerequisite: EDUC 1102 and ENGL 1101

Students will learn what constitutes quality young adult literature and will be introduced to a wide range of young adult novels. Students will examine young adult literature through a literary context and develop age-appropriate lesson plans. This course does not satisfy the general education requirements in English and humanities. Students can not receive credit for both ENGL 2238 and EDUC 2238.

EDUC 2240 Early Childhood Practicum *3 credits*

Corequisite: EDUC 2241

This course is designed to provide students with opportunities to plan, implement, and evaluate developmentally appropriate lessons and activities in a licensed inclusive early childhood setting. **Students will work on-site under the direct supervision of a qualified cooperating teacher for 16 hours per week for a total of 240 clock hours.** Students will be assigned two sites (120 hours each location) for the semester. Students will also be videotaped and critiqued while teaching young children.

EDUC 2241 Early Childhood Seminar *3 credits*

Corequisite: EDUC 2240

This seminar accompanies EDUC 2240 and will enable students to discuss a variety of topics relevant to their student teaching. Topics may include but shall not be limited to behavior guidance, children with special needs, working with parents, professionalism, current teaching strategies, etc. Students will study the role of the teacher, the student teacher, and the children. Weekly time sheets and journal will be submitted. Regarding the portfolio, students will also be expected to create their resumes and provide additional documentation to demonstrate their professional development.

EDUC 2243 Individuals with Exceptionalities *3 credits*

Prerequisites: EDUC 1101 OR EDUC 1140.

This course is designed as an introduction to the field of special education and is appropriate as a first course for students intending to pursue certification in special education as well as for students planning to pursue other teacher careers. Topics covered in the course include the history of the field; social and legal issues affecting the field; examinations of various areas of exceptionality; and discussion of educational responses for students with exceptionalities.

EDUC 2260 Teaching in a Diverse Society *3 credits*

Prerequisite: EDUC 1101

This course is designed to prepare the prospective teacher to effectively teach the range of students found in the typical classroom. Students will become familiar with various individual differences that characterize today's school population including children with special needs, talented and gifted learners, culturally and linguistically diverse individuals, students with low-incidence disabilities, etc. Practical strategies for adapting instruction to meet the learning styles of all students in inclusive classrooms will be addressed. Working with families of diverse backgrounds will be addressed. Ten hours of public school classroom observation in an approved diverse setting are also required.

ELECTRICAL ENGINEERING - EENG

EENG 1105 DC Circuits & Devices *3 credits*

Prerequisite: MATH 1118 or equivalent

An examination of the behavior of passive devices in transient and steady state DC circuits. Topics include device construction and packaging ohmic and non-ohmic conduction, voltage, current, power and resistance calculations in series, parallel and series-parallel circuits. Laboratory consists of development of prototyping skills and verification of circuit operation.

EENG 1115 AC Circuits & Devices *3 credits*

Prerequisite: EENG 1105 or equivalent

An examination of the frequency response of reactive circuits. Topics include AC voltage waveforms & frequency, current and power calculations in series, parallel and series-parallel circuits. Applications of resonance and filtering are discussed.

EENG 1150 Operating Systems *3 credits*

This course is designed to introduce the student to various types of computer operating systems. It will familiarize the student with the basic commands and fundamental concepts needed to work in these systems. We will discuss single user, multitasking, and multi-user systems along with user interfaces. Students cannot receive credit for both CSCI 1150 and EENG 1150.

EENG 1185 Electrical Machinery *3 credits*

Prerequisites: EENG 1115

An examination of the characteristics of power transmission and distribution equipment. DC, single phase, poly phase AC machinery are covered including servo machines. Transformers, transducers and industrial controls are also studied.

EENG 1199 Seminar 1-6 credits

This course will be a discussion of particular problems related to the student's chosen program and areas of interest.

EENG 2205 Digital Electronics 3 credits

Prerequisite: EENG 1105 **corequisite equivalent**

An examination of number systems and techniques of logical reduction. Pulse and logic circuits, counters, registers, logic families, integrated circuits and basic elements of digital design are discussed. Including DA & AD convertors microprocessor & microcontrollers.

EENG 2215 Analog Circuits & Devices 3 credits

Prerequisite: EENG 1115 **or equivalent**

An introduction to the characteristics, specifications, packaging, and applications of discrete devices and low scale integrated circuits.

EENG 2254 Computer Architecture & Design 4 credits

This is an introductory course into computer architecture. This class will assemble a single board computer with a lecture section before each section to describe how the section works. Use of Oscilloscope, Digital Logic probe and Millimeter are used to make measurements and troubleshoot each section.

Students who have completed CSCI 2245 may not receive credit for this course.

EENG 2255 Digital Communications 3 credits

Prerequisites: EENG 2205

An examination of various digital communications techniques. Topics covered will include modulation, sampling, coding and decoding, multiplexing, error detection and correction, modems, LANs, and WANs.

EENG 2268 Power Generation 3 credits

Prerequisite: EENG 1105

Co-requisite: EENG 1115

This course is designed to teach the aspects of power generation. It covers the different types of steam generation methods based on the various types of fuels used including coal, nuclear, hydro, fuel cell, solar, wind and new fuel technologies. It also includes an in-depth study of the associated equipment such as pumps, turbines, environmental and other associated systems.

EENG 2285 Manufacturing Control Systems 3 credits

Prerequisites: EENG 2205

This course introduces the use of programmable logic controllers in industry. Topics include ladder logic programming, sensors used in manufacturing control systems and applications of PID loops. Allen Bradley Controllers are the PLC used in this course. A laboratory complementing class work.

EENG 2299 Research Project 3 credits

Prerequisite: Sophomore standing in Electrical/Electronics Technology Program

An independent study resulting in a technical report, research paper, project or a combination of these. Selection of the area of study is made in consultation with the instructor and must be approved by the instructor.

ENGINEERING DESIGN - ENDS**ENDS 1100 Introduction to Engineering** 2 credits

This course introduces the student to the engineering profession and the variety of related jobs and careers. This course also includes the use of electronic calculators, personal computers, conversion of units, (English to metric, metric to English), problem solving techniques in groups and individual, scientific notation and decision making models.

ENDS 1110 Blueprint Reading 3 credits

Learn to read and use HVAC plans and blueprints like today's professionals, with a focus on air conditioning drawings and hands-on exercises. This course will help readers master the basics of blueprint reading and apply their new skills to work in the HVAC trade. This course has been updated to reflect the increasing use of computers to develop plans and prints, while still including all the critical areas of study, including: using the architect's and engineer's scale, creating and using working and construction drawings, freehand sketching and drafting with instruments, and more. The final section of this course goes beyond basic concepts, enabling students to gain valuable skills in reading and interpreting architectural, duct work, mechanical, electrical, and plumbing plans.

ENDS 1140 Introduction to Engineering Graphics with AutoCAD 3 credits

This is a beginning drafting course that will introduce the basics of manual drafting and an introduction to AutoDesk's 2D AutoCAD. Students are introduced to fundamental knowledge and skills such as line work, lettering, scale use, sketching, multi-view drawings, sectional views, and working drawings (detail, assembly, floorplans, elevations, electrical) with the basics of manual drafting techniques and the use of computer aided drafting equipment.

ENDS 1141 Engineering Drawing I 3 credits

This is a beginning drawing course. Students are introduced to fundamental knowledge and skills such as line work, lettering, scale use, sketching, multi-view drawings, sectional views, with the basics of manual drafting techniques and the use of drafting equipment.

ENDS 1142 Engineering Drawing II 3 credits

Students are introduced to a continuation of technical drawing fundamentals. Auxiliary views, descriptive geometry, patterns and developments, and dimensioning and notation are emphasized. Welding drawings are covered. Experience with view visualization will prepare the student for CAD fundamentals.

ENDS 1143 Introduction to Project Management and Product Design 3 credits**Prerequisites:** ENDS 1140

An introductory course in the application of the engineering design process to solving product design problems. The formal design solution is presented in the form of engineering working drawings, bill of material, estimates of time, material, and labor costs, with other reports as required.

ENDS 1144 Electrical Drafting 3 credits

This course is a study of electrical and electronic diagrams. Students learn electronic symbols and the use of these symbols to draft and design schematic diagrams, micro-electronic diagrams, printed circuit diagrams, electrical power systems, and electrical drawings for architectural plans.

ENDS 1145 Computer Applications in Engineering 3 credits

An introductory course where students learn areas in engineering in which computers are commonly used. Computer hardware, software and programming are introduced. Topics include reporting, calculation, drafting, analysis, computer aided design, numerical control, rapid prototyping and direct material deposition. The student will gain hand-on experience in these areas.

ENDS 1151 Engineering Materials 3 credits**Prerequisite:** MATH 1120 or higher

This course will provide the student with a basic understanding of materials and the important practical considerations that must be used in material selection and specification in design, manufacturing and failure analysis. This course includes lectures and labs.

ENDS 1180 Engineering Internship I 1-3 credits**Prerequisites:** Completion of 15 program hours

Career-related activities encountered in the student's area of specialization offered through an individualized agreement, paid or unpaid, among the College, employer, and student. Under the supervision of the College and the employer, the student combines classroom learning with work experience. Includes and orientation to co-op component.

ENDS 1199 Seminar 1-6 credits

This course will be a discussion of particular problems related to chosen program and areas of interest.

ENDS 2201 Engineering Mechanics (Statics) 3 credits**Prerequisites:** MATH 1120 & PHYS 1117

In this course the student studies the principles of forces, as applied to trusses, frames, beams, walls, and machine parts. The student will gain experience by solving problems graphically and mathematically. The course covers the study of vectors, forces, resultants and equilibrium.

ENDS 2202 Dynamics 3 credits**Prerequisites:** ENDS 2201

In this course the student studies the principles of dynamics as applied to linear motion and angular motion. The course covers kinematics and kinetics of rectilinear motion, curvilinear motion and kinematics and kinetics of rotation.

ENDS 2203 Strength of Materials 3 credits**Prerequisites:** ENDS 2201

An introductory course in mechanics of materials, analysis and design of members subjected to various combinations of loading, stress and strain, beams, columns, members in torsion. In-class experiments investigate the response of deformable bodies to applied loads.

ENDS 2204 Mechanisms 3 credits**Prerequisites:** ENDS 2201

A study of mechanical components including: gear trains; belt, chain and disk drives; cams, levers, linkage mechanisms, and Geneva mechanisms. Laboratory work complementing class work.

ENDS 2205 Hydraulics & Pneumatics 3 credits**Prerequisites:** PHYS 1117 and MATH 1120

An introductory course to impart basic knowledge of hydraulic and pneumatic concepts, components and systems for power transmission and control where laboratory work is performed using industrial components and circuits.

ENDS 2219 Tool Design and Manufacturing 3 credits**Prerequisites:** ENDS 1142 and MATH 1120

An introductory course in designing of manufacturing tooling including broaches, lathe and mill tools; piercing, blanking, bending, and drawing dies; the economics of tool design; cutting and forming; and the design of jigs and fixture devices used to locate and secure the work-piece in manufacturing. Principles of manufacturing and properties of materials are utilized. The selection of cutting tools, calculating horsepower requirements, and cutting feeds and speeds are introduced.

ENDS 2221 Machine Design 3 credits**Prerequisites:** ENDS 2201

This course covers the analysis and design of machine components and assemblies such as couplings, bearings, springs, frames, gears, belts, etc. utilizing the principles of mechanics, kinematics, drafting and strength of materials.

ENDS 2230 Advanced Concepts in 2D AutoCAD 3 credits**Prerequisites:** ENDS 1140

An intermediate course which dives into advanced concepts in computer assisted design techniques. The student will learn how to make the software work for them while gaining experience in solving drafting problems utilizing an interactive CAD system. Students will extend their CAD competency by solving sophisticated drafting problems utilizing an interactive CAD system, applications, course description and lecture with an opportunity to test for third party credentials via Autodesk.

ENDS 2231 Introduction to 3D AutoCAD 3 credits**Prerequisite:** ENDS 1140 or ENDS 2230

An introduction into 3D modeling, this course continues to build on the student's 2D knowledge. This course will take the student from the very basic introduction to AutoDesk AutoCAD 3D all the way through to the creation of realistic looking 3D models and renderings. The student will develop the ability to create 3D models and presentations suitable to sell the design or concept to others.

ENDS 2232 Introduction to SolidWorks 3 credits**Prerequisite:** ENDS 1140

An introduction course which dives into the 3D and solid modeling design concepts in computer assisted design techniques. The student will learn how to make the software work for them while gaining experience in solving drafting problems utilizing an interactive CAD system. Students will extend their CAD competency by solving sophisticated drafting problems utilizing an interactive CAD system, applications, course description and lecture with an opportunity to test for third party credentials via SolidWorks.

ENDS 2233 Computer Aided Manufacturing 3 credits**Prerequisites:** ENDS 2230 and MATH 1120

This course introduces automation and computer-integrated manufacturing with manual part programming for numerical control machines. History of CNC, coding, punch tape, BCD, word address programming and computer numerical control following the recommendations of the Electronic Industries Association

(EIA) and Aerospace Industries Association (AIA) with hands-on experience. The process and requirements for rapid-prototyping and direct material deposition are introduced and reinforced with hands-on experience.

ENDS 2235 Technical Drawing 3 credits**Prerequisite:** ENDS 1142 or equivalent

Students learn to draft illustrations of machine parts, exploded pictorial assemblies, parts catalogs, plant layouts, and elevations. The use of color and shading are introduced. Pictorial drawings combine elements of both technical and artistic drawing to convey all the information necessary to be used as guides by people involved in manufacturing, maintenance, or sales where a complex part or process would be difficult to visualize when only orthographic views are given. Technical illustration is an important communication skill.

ENDS 2236 Architectural Drafting and Design 3 credits**Prerequisites:** ENDS 1142

An introductory course where students learn design of residential buildings. The course covers elevations, foundations, and interior drawings. This course also involves the study of architectural symbols, nomenclature, detailing, sectioning, dimensioning, and the use of architectural catalogs.

ENDS 2260 Surveying 3 credits**Prerequisite:** MATH 1120

An introductory course to impart basic knowledge of surveying plus training in the use of traditional surveying equipment.

ENDS 2261 Manufacturing Materials and Processes 3 credits**Prerequisites:** MATH 1120 and PHYS 1117

This course will acquaint the technician with the nature, properties, performance, characteristics, manufacturing processes, and practical uses of various engineering materials. Materials such as ferrous and nonferrous metals as well as polymers, ceramics, and composites will be covered. Both primary and secondary processes will be covered in this course.

ENDS 2270 Computer Applications in Engineering II 3 credits

This course gives a working knowledge of a high level computer language. The student will write programs to solve specific problems using logical structures, industry standardize practices and standard Visual C++ language. Topics covered will include programming techniques, calculations, methods and conversions, loop structures, search and arrays, conditional branching, file creation and maintenance. Application will include Visual C++ language used programming Industrial applications using an integrated controller.

ENDS 2280 Engineering Internship II *1-3 credits***Prerequisite:** ENDS 1180

Career-related activities encountered in the student's area of specialization offered through an individualized agreement, paid or unpaid, among the College, employer, and student. Under the supervision of the College and the employer, the student combines classroom learning with work experience. Includes an orientation to co-op component.

ENDS 2299 Design Research Project *3 credits***Prerequisite:** sophomore standing in Computer Assisted Design program

A capstone course of independent study resulting in a technical report, research paper, project, or a combination of these. Selection of the area of study is made in consultation with, and must be approved by, the instructor.

ENGLISH - ENGL**ENGL 1000 Co-requisite for English Composition I** *2 credits*

Prerequisites: ACCUPLACER writing score of 4 or ACCUPLACER writing score of 3 and High School English/Language Arts grade average of B or higher.

Corequisite: ENGL 1101

This course emphasizes the development and use of reading, writing, and grammar skills necessary for the successful completion of college level writing courses. Students must be enrolled in ENGL 1101 as a co-requisite for this course, and they will receive extensive help with their ENGL 1101 assignments via small group work and individualized instruction. This course will closely follow the topics covered in the concurrent ENGL 1101 class and will include, as necessary, review topics from ENGL 1101.

ENGL 1101 English Composition I *3 credits*

Prerequisites: 1) Accuplacer Writeplacer score of 5 or above. 2) ACT English score of 18 or above. 3) SAT score of Writing 430 and Critical Reading 450 or above. 4) Successful completion of ENGL 1000 with a C or better. 5) A high school English/Language Arts grade average of B or higher with an Accuplacer score of 4 or above.

This course provides an introduction to expository writing, emphasizing the clear and concise expression of ideas in a variety of rhetorical modes.

ENGL 1102 English Composition II *3 credits***Prerequisites:** Completion of ENGL 1101 with a "C" or better

This course advances those skills acquired in English 1101, continuing to engage students in the clear and concise expression of ideas while emphasizing

argumentation and research writing. Current MLA (or APA) documentation is required.

ENGL 1199 Seminar *1-6 credits*

This course will be a discussion of particular problems related to the students chosen program and areas of interest.

ENGL 2201 Introduction to Literature *3 credits***Prerequisites:** ENGL 1101

This course offers an introduction to the three major literary genres: fiction, poetry, and drama. Students will read short stories, poems, and plays to gain an understanding of literary forms and to learn techniques for analyzing and interpreting works of literature. An emphasis will also be placed on how literature explores and lends insight into the human experience.

ENGL 2202 The Great American Novel (1925-present) *3 credits***Prerequisites:** ENGL 1101 or ENGL 101

This course is a survey of American Literature from 1925 to present. The primary focus of this class is reading and discussing "The Great American Novel," which will allow students to understand the literary value, historical significance, and cultural influence of works that have vied for this title. Students will address both the influence these novels have had on American culture, and the influence American culture had on the creation of these novels. In addition to readings, discussions, and exams, students will write two research papers and give two presentations that demonstrate their ability to explain the importance of specific works both verbally and in writing.

ENGL 2205 Technical Report Writing *3 credits***Prerequisites:** Successful completion of ENGL 1101 with a "C" or better.

This course introduces students to the discipline of technical communication. Preparation of visuals to supplement text, workplace communication, descriptions of mechanisms, explanations of processes, and writing reports are the major topics included. This course is designed for students enrolled in technical degree programs and does not fulfill a humanities requirement.

ENGL 2207 Women's Literature *3 credits***Prerequisites:** Completion of ENGL 1101 with a C or better.

Introduction to works by women writing in English, and to the literary and gender issues they raise. The structure of the course combines historic and analytical readings of the works that span writings from the Middle Ages to the contemporary era. The course also examines the increasing influence on the literature of Western culture brought to bear by female writers.

ENGL 2217 Readings in Early British Literature *3 credits***Prerequisites:** ENGL 1101

This is a survey course that examines representative works of literature from the Anglo-Saxon period to the late 18th century. A variety of authors, genres, and trends will be studied.

ENGL 2218 Readings in Later British Literature *3 credits***Prerequisites:** ENGL 1101

This is a survey course that examines representative works of literature from the late 18th century to the present. A variety of authors, genres, and trends will be studied.

ENGL 2219 Creative Writing (Fiction & Poetry) *3 credits***Prerequisites:** ENGL 1101

This course is an introduction to creative writing, focusing on both fiction and poetry. Discussions of fiction writing will emphasize the technical elements of fiction, assigned readings, and works written by class members. Discussions of poetry will emphasize the technical elements of poetry, assigned readings, and works written by class members.

ENGL 2220 Introduction to Travel Writing *3 credits***Prerequisites:** ENGL 1101

Study of the history, critical theories surrounding, and the process of creating travel writing.

ENGL 2230 American Literature to 1865 *3 credits***Prerequisites:** ENGL 1101

This course explores major works in American literature through the mid-19th century. Readings are drawn from the Puritan Age, Colonial Period, Romantic Age, and the Age of Realism.

ENGL 2235 American Literature after 1865 *3 credits***Prerequisites:** ENGL 1101

This course explores major works and literary trends in American literature from 1865 to the present.

ENGL 2236 Contemporary World Literature: The Novel (1945-present) *3 credits***Prerequisites:** ENGL 1101 or ENGL 101

This course is a survey of world literature from postwar to present that focuses on novels and novellas. Student will read and discuss great works from around the world, effectively establishing a global view of how literature has evolved since the Second World War. Areas covered include Africa, Asia, The Caribbean, Europe, The Far East, The Middle East,

North America, and South America. In addition to readings, discussions, and exams, students will write two research papers and give two presentations that demonstrate their ability to explain the importance of specific works both verbally and in writing.

ENGL 2238 Young Adult Literature *3 credits***Prerequisites:** ENGL 1101 (or ENGL 101)

Students will learn what constitutes quality young adult literature, and will study a wide range of young adult novels and authors. Students will examine young adult literature through a literary context while they read and analyze culturally diverse novels. In addition to readings, discussions, and exams, students will write at least one paper with sources and complete at least one project or presentation. These assignments will demonstrate their ability to explain the importance of specific works both verbally and in writing.

ENGL 2240 Introduction to Film *3 credits***Prerequisites:** ENGL 1101

This course is designed to introduce students to the vocabulary and artistic elements of film. It will focus on the elements of cinematic language (including narrative, mise-en-scene, cinematography, acting, editing, and sound). Students will view films to gain an understanding of cinematic form and learn techniques for analyzing and interpreting film.

ENGL 2241 Film History *3 credits***Prerequisite:** ENGL 1101

This course is a survey of the major developments, movements, and critical approaches in film, with particular emphasis on narrative film. The course emphasizes an understanding of the historical, cultural, and aesthetic context that influence film and develops the student's understanding of a film's narrative and visual structure. Screenings of films required.

ENGL 2246 Classical & World Mythology *3 credits***Prerequisite:** ENGL 1101

This course is a survey of classical and world mythology that examines popular works from ancient Greece and Rome, as well as Celtic, Nordic, and Eastern cultures. The primary focus of this course is reading and discussing myths, which will allow students to understand the literary value, historical significance, and ongoing influence of classical and world mythology. In addition to readings and discussions, students will write two research papers and give two presentations that demonstrate their ability to explain the influence of specific works both verbally and in writing.

ENGL 2247 Critical and Cultural Approaches to the Fairytale *3 credits*

Prerequisite: ENGL 1101

This course will examine the cultural history of an examine critical approaches to fairy tales, with particular attention paid to the fairy tales of Germany and the Brothers Grimm. The course examines the cultural significance of the original texts, works to develop critical responses to the texts, and actively examines the connections between the original tales and the forms of fairytales being told and created today.

FINE ART - FNAR

FNAR 1104 Introduction to the Fine Arts *3 credits*

Creators of art, regardless of the chosen form, share many concepts. In this course, the student will explore these similarities and experience the creative process in each of the artistic disciplines thereby enhancing personal interest in and understanding of the literary, musical, theatrical, and visual arts.

FNAR 1105 Basic Drawing I *3 credits*

An intensive studio drawing course on the observation and interpretation of form with concern for space, line, volume, texture, and composition. Varied stylistic approaches and subject matter will be studied in the pencil and charcoal mediums.

FNAR 1106 Basic Drawing II *3 credits*

Prerequisite: FNAR 1105

An intensive studio drawing course on the observation and interpretation of form with concern for space, line, volume, texture, and composition. Varied stylistic approaches and subject matter will be studied in the pencil and charcoal mediums. This course is a continuation of FNAR 1105.

FNAR 1108 Art Appreciation *3 credits*

Art Appreciation is the study and understanding of the visual arts, including painting, sculpture, architecture, and other forms of two- and three- dimensional expression. It involves learning basic concepts, terminology, and art styles along with elements of design and the principles of composition. Analyzing the historical, cultural, and societal context in which the work of art was created sharpens visual awareness and understanding of the artists' influences.

FNAR 1111 History of Art I *3 credits*

An introduction to the enjoyment and understanding of the history of sculpture, painting, and architecture from prehistory through the Middle Ages.

FNAR 1112 History of Art II *3 credits*

An introduction to the study of the history of art, including painting, sculpture, architecture, and other

media from the Renaissance through the 20th century.

FNAR 1116 Music Appreciation I *3 credits*

Music Appreciation I is a survey of musical styles from the Middle Ages to the early 18th century. It includes a review of music reading and basic music theory and covers the Medieval, Renaissance, Baroque, and Early Classical Periods in music. No previous knowledge of music or musical experience is required.

FNAR 1117 Music Appreciation II *3 credits*

This course is a survey of music from the 18th century to the present. It includes the Classical, Romantic, and Impressionistic periods as well as musical styles from the 20th and 21st centuries.

FNAR 1130 Oil/Acrylic Painting *3 credits*

An intensive study of the oil or Acrylic painting media with emphasis placed on the academic study of materials, technical applications, composition and color theory. The works of the Old Masters and accomplished contemporary artists will be studied to support the learning process.

FNAR 1131 Oil/Acrylic Painting II *3 credits*

Prerequisites: FNAR 1130

A continuation of FNAR 1130 with an emphasis on composition, value management and sketching as a preparatory step in the painting process. The works of the Old Masters and contemporary artists will be studied to support the learning process.

FNAR 1152 Concert Choir *2 credits*

Concert Choir is a choral ensemble consisting of both Southern State students and community members. The ensemble performs music in a variety of styles. No audition is required for the Concert Choir.

FNAR 1180 Concert Band *2 credits*

Concert Band is a wind ensemble consisting of both Southern State students and community members. The ensemble performs a variety of music ranging from traditional symphonic band repertoire to popular music and jazz. No audition is required.

FNAR 2211 Figure Drawing *3 credits*

Prerequisite: FNAR 1105 and FNAR 1106

An intensive studio figure-drawing course that emphasizes the skeletal-muscular structure, external contour, and proportion of the human form. Studies and drawings from the live model, skeleton, cast, anatomical diagrams, and examples of old masters' drawings will aid the learning process. Development of composition and the discipline of seeing will receive special consideration. This course will explore a variety of media and art materials.

FOREIGN LANGUAGE - FLNG

FLNG 1104 Elementary French I *3 credits*

This course is based on the integration of learning outcomes across Interpersonal, Interpretive, and Presentational Modes of Communication. Students accomplish real-world communicative tasks in culturally appropriate ways as they gain familiarity with products, practices, and perspectives of the target culture(s). Students learn grammar, vocabulary, and structures to enable them to meet functional performance goals at this level and to build a foundation for continued language learning. During this course, students generally perform in the Novice range, although a few abilities may emerge in the Intermediate range.

FLNG 1105 Elementary French II *3 credits*

Prerequisite: FLNG 1104 Elementary French I

This course builds upon the foundation laid in FLNG 1104, and uses the same text. It is the second phase in the two-course sequence which comprises elementary French at SSCC. This course is based on the integration of learning outcomes across Interpersonal, Interpretive, and Presentational Modes of Communication. Students accomplish real-world communicative tasks in culturally appropriate ways as they gain familiarity with products, practices, and perspectives of the target culture(s). Students learn grammar, vocabulary, and structures to enable them to meet functional performance goals at this level and to build a foundation for continued language learning. During this course, students perform better and stronger in the Novice range while some abilities emerge in the Intermediate range.

FLNG 1107 Elementary Spanish I *3 credits*

Prerequisite: It is required that students with less than two years of high school Spanish begin at this level. Students who have completed two years of high school Spanish at least 5 years ago must enroll at this level.

In this course, the student is introduced to the Spanish language and Hispanic culture. Basic skills in speaking, listening, reading and writing are developed. Cultural readings and videos are included in each lesson, giving the student additional opportunity to utilize the target vocabulary and grammar in classroom conversation.

FLNG 1108 Elementary Spanish II *3 credits*

Prerequisites: FLNG 1107. Students who have completed two (2) years of high school Spanish within the last four (4) years may also enroll at this level.

This course builds upon the foundation laid in FLNG 1107, and uses the same text. It is the second phase in the two-course sequence which comprises elementary Spanish at SSCC. Skills in speaking, listening, reading and writing in Spanish are further developed in this

course. Cultural readings and videos are included in each lesson, giving the student additional opportunity to utilize targeted vocabulary and grammar in classroom conversation.

FLNG 1120 Beginning American Sign Language I *4 credits*

Everyday communication is the centerpiece of every lesson. Topics revolve around sharing information about our environment and us. Grammar is introduced in context with an emphasis on developing question and answering skills. Students learn conversational strategies to help you maintain a conversation. Interaction activities allow students to rehearse what they have learned.

FLNG 1121 Beginning American Sign Language II *4 credits*

Prerequisite: Successful completion of Beginning American Sign Language I

Students continue to build on skills learned in Beginning American Sign Language I: grammar, conversational strategies and cultural information. In addition, students will add to their knowledge several kinds of lessons: functional (conversational or narrative), skill building, comprehension, cultural and review. The functional lessons introduce vocabulary and key grammar structures through the use of key dialogues or narratives. Skill building lessons focus on practicing detailed language features that support students' general ASL production, such as various number types, expanded finger spelling practice, space and semantic use of agreement or spatial verbs and use of negation signs. The comprehension lessons use stories to expand students' skills to process and figure meanings from larger chunks of signed information. The culture lessons focus on behaviors and knowledge that enable students to act in appropriate linguistic and social ways, and to gain more cultural insight on the Deaf community.

FLNG 2207 Intermediate Spanish I *3 credits*

Prerequisite: FLNG 1108 or three (3) years of high school Spanish (within the last four (4) years).

Intermediate Spanish I is the first course in the intermediate sequence. Students will engage in advanced activities to further develop listening, speaking, reading and writing skills. Students will expand knowledge of Hispanic cultures while investigating intercultural products, practices and perspectives. Students will view and listen to contemporary media sources, read magazine articles, poems, short stories and extended narratives, analyze components of spoken or written texts, narrate about events and experiences through writing and speaking and engage in more advanced levels of interpersonal communication.

Thematic units will include:

- The World of Work and Future Trends
- Art, Music and Literature
- News and Current Affairs
- Legends
- Human Migration

Through exploration of unit themes, students' grasp of acquired grammar structures will be reinforced by review and active use of the present, preterite and imperfect tenses, the present and past perfect tenses and the present and present perfect subjunctive. In addition, new grammar structures will include the future and future perfect tenses, the conditional and conditional perfect tenses, the past perfect and imperfect subjunctive as well as *si* clause sentences.

FLNG 2208 Intermediate Spanish II *3 credits*

Prerequisite: FLNG 2207 or four (4) years of high school Spanish (within the last four (4) years).

Intermediate Spanish II is the second course in the intermediate sequence. Students will engage in advanced activities to further develop listening, speaking, reading and writing skills. Students will expand knowledge of Hispanic cultures while investigating intercultural products, practices and perspectives. Students will view and listen to contemporary media sources, read magazine articles, poems, short stories and extended narratives, analyze components of spoken or written texts, narrate about events and experiences through writing and speaking and engage in more advanced levels of interpersonal communication.

Thematic units will include:

- Beliefs
- Food, Food Security and Agriculture
- The Cuban Revolution
- Human Rights and Social Justice
- Biodiversity and Ecology

Through exploration of unit themes, students' grasp of acquired grammar structures will be reinforced by review and active use of the indicative and subjunctive moods, commands, preterite vs imperfect and *por* vs *para*. In addition, new grammar structures will include passive voice, prepositions, *vosotros* commands and relative pronouns.

FLNG 2220 Intermediate American Sign Language I *4 credits*

Prerequisite: Successful completion of Beginning American Sign Language II

Intermediate American Sign Language I has been designed to build upon the student's prior knowledge and experiences from Beginning American Sign Language I & II. This course focuses on building narrative skills and developing real-world conversational skills used in everyday discussions. Students will continue to acquire

cultural information through immersion in the Deaf Community and through the stories presented in the text and live in class. Students will gain the skills needed to express ideas and concepts and illustrate how things work using American Sign Language.

FLNG 2221 Advanced American Sign Language *3 credits*

Prerequisite: FLNG 2220

This course is designed to build upon the student's prior knowledge and experience of American Sign Language (ASL). Students will be exposed to cultural interactions and stories from their text to bring them to a higher level of fluency in ASL.

HEALTH, FITNESS AND EXERCISE SCIENCE - HFES

HFES 1101 Introduction to Exercise Science *3 credits*

This course is the introduction to exercise science and the sub-disciplines. It is designed to help students define professional goals and explore the many careers in exercise science. Students will begin to gain the competencies essential and the commitment required to be in the field of exercise science.

HFES 1102 Introduction to Athletic Training *3 credits*

This course is an introduction to the fundamental knowledge and background in athletic training. It is designed to take a scientific, evidence-based approach to provide a clinical background in athletic training.

HFES 1161 First Aid *2 credits*

This course presents the theory and skills necessary to provide first aid care for patients of all ages. With successful completion of the course, the student will receive a course completion card in first aid and adult, child, and infant layperson CPR.

HFES 1190 Fitness and Health Foundations *3 credits*

This course is an introduction to the foundations of fitness, health and related topics including energy balance, lifestyle choices and exercise testing and prescription. Individual fitness assessment, evaluation and programming will be emphasized. Attention will be given to the research that supports the professional guidelines for fitness and health.

HFES 1195 Fitness & Wellness for Life *3 credits*

This course investigates the components involved in developing a wellness lifestyle with an emphasis on the physical wellness. Attention is principally devoted to the components of fitness to include cardiorespiratory

endurance, muscular fitness, and flexibility. In addition, learning about dietary practices and nutrition, protecting oneself from disease, avoiding substance abuse, and managing stress will be covered.

HFES 2217 Yoga

1 credit

An introduction to the nature and principles of yoga. Students will gain knowledge of the benefits of yoga performing and equipment needed while participating in a yoga program. Course focuses on developing postural alignment in order for students to gain improved strength, endurance, flexibility, balance, and stress reduction.

HFES 2234 Personal Health

3 credits

Promote an appreciation for healthful living practices of the individual and group to promote positive attitudes. Topics include physical health and fitness emotional health, nutrition, alcohol and drugs, environmental health, aging, safety and first aid.

HISTORY - HIST

HIST 1110 American History I

3 credits

This course is a survey of the United States from the pre-Colombian period to 1877. The course will introduce students to the major political, social, economic, religious, cultural, intellectual, and technological developments in American history through reconstruction and the post-Civil War era. Topics will include, but are not limited to: pre-Colombian civilization, European exploration and conquest of the New World, development of European colonies, the colonial era, the American Revolution, the Constitution, economic changes, early industrialization and the formation of political parties. The institution of slavery will be closely examined, as will the concept of Manifest Destiny and the demise of Native American tribal life. The significant causes and events leading to the American Civil War will be discussed as will the military history of the war and reconstruction. The administrations of Jefferson, Jackson, Polk, and Lincoln will also be examined in detail.

HIST 1111 American History II

3 credits

This course is a survey of the history of the United States from 1877 to the present day. The course will introduce students to the major political, social, economic, religious, cultural, intellectual, and technological developments in American history from the end of reconstruction to the post-modern era. Topics will include, but are not limited to: Gilded Age politics, late 19th and 20th century industrialization, economic changes, immigration, Progressivism, American Imperialism, World War one, cultural changes in the 1920's, and The Great Depression. The latter portion of the semester will focus on the events leading to World War

II, the military history of the war, the Cold War, the Civil Rights Movement, social change in the 1950's and 1960's, the Vietnam War, and the post-Cold War era up to the presidential election of 2008.

HIST 1121 Modern East Asia

3 credits

Modern East Asia will provide students with a foundation in early modern to modern history of China, Korea, Japan and Vietnam. Topics for the course will include but are not limited to the early modern/late traditional era including European and American contact with Asia, the end of the Tokugawa period in Japan, the Meiji Reformation, the decline and partition of China, Industrialization and Imperialism through World War II, Communism in China, the Korean Conflict, Indo-China through the Vietnam War and an examination of the successor states in Modern East Asia.

HIST 1130 African American History

3 credits

This course will examine the major concepts/events, and their interconnections, that shaped African American History (within US History itself) and analyze their impact on African American society today. African American History is a course studying the experiences, lives, and contributions of African Americans in American history from European arrival in the Americas to the present.

HIST 1140 American Women's History

3 credits

American Women's History is a survey course studying the experiences, lives, and contributions of women in American history from the colonial period to the present. This course traces the changing roles of women throughout history as well as their experiences on racial, ethnic, class, and political basis. The problems and solutions women have faced, along with their many achievements, are discussed with an emphasis on understanding the important roles women have played in American history.

HIST 1151 World History I

3 credits

This course is a survey of World History from the Paleolithic Era to 1500 AD. This course will examine major developments in the political, social, economic, religious, cultural, intellectual, and technological life of world history from early civilizations to the 16th century. The course will begin with an examination of the early civilizations (such as Egyptian, Indus River Valley, Greek/Roman and Mesoamerican) and then trace the development of civilizations through 1st and 2nd millennia. The course will also examine world religions and how they have impacted the modern world.

HIST 1152 World History II

3 credits

This course is a survey of World History from 1500 AD to modern times. This course will examine major developments in the political, social, economic,

religious, cultural, intellectual, and technological life of world history from the 16th century to modern times. The course will begin with an examination of the age of European exploration and expansion and the rise of colonial revolutions. The course will then trace the development of modern eastern and western cultures. The course will then examine the rise of industrial nations, democracies, world wars, our world progressing in the digital age.

HIST 1199 Seminar 1-6 credits

This course will be a discussion of particular problems related to the student's chosen program and areas of interest.

HUMAN AND SOCIAL SERVICES - HSSR

HSSR 1105 Survey of Substance Use Disorders 3 credits

This course explores chemical dependency issues from a historical, cultural, biological, and legal perspective. Major topics include recognizing signs and symptoms of substance abuse, prevention of substance abuse, and differences in helping strategies with substance abusers, pharmacology, and psychopharmacology. *This course meets the required hours for the student's CDCA, as listed by the Ohio Chemical Dependency Professionals Board.*

HSSR 1110 Introduction to Social Services and Ethical Procedure 3 credits

This course introduces students to the fields of human services, counseling, case management, and other mental health-related fields. The foundation of the human services system and social work is presented. It explores the etiology of social problems among the general population, minorities, and out-groups; the history and development of mental health services; legal and ethical issues; and various settings in which services are provided. This course provides a framework of human services practice meant to prepare students for their actual experience in a human services agency. Ethical and legal issues related to interventions with individuals, groups, organizations, and communities in generalist practice and chemical dependency are emphasized. Seminar format provides for and integration of experiences with academic courses. Creative problem solving and human services values are featured. Exposure to differing theoretical perspectives will be explored. Goals of the human services system and the role of the social work assistant will be included.

HSSR 1135 Affective Education & Group Process 3 credits

This course emphasizes the principles of therapeutic group facilitation; interpersonal and interpersonal communication processes; and personal growth and

development in the generalist practice and chemical dependency settings. Topics include group formation, group leadership skills, examining motives for entering the helping professions, conflict resolution, rapport building, verbal and non-verbal communication. Current issues, ethics, and specific needs of various populations will be featured. The course features heavy emphasis on experiential learning, awareness of group dynamics, and practice of group leadership skills through participation as a group member in the laboratory setting.

HSSR 1140 Racial and Cultural Diversity in the Helping Professions 3 credits

This course provides an introduction to the general concepts and history of cultural diversity in U.S. society, and stresses the importance of understanding diversity in mental-health careers and the helping professions. It focuses on the history of many cultural/minority groups and provides an understanding of culturally-based help-seeking behaviors among racial, ethnic, and other subpopulations. Emphasis is on general diversity issues as well as issues specific to becoming culturally competent in the helping professions.

HSSR 1150 Case Management & Writing in the Helping Professions 3 credits

Prerequisite: ENGL 1101

A writing intensive course focusing on the various forms of professional writing typically encountered in the helping professions, and on the use of behavioral observations and writing to document client interactions and behaviors. Students will learn beginning skills needed to maintain records and case management necessary for rendering professional services to clients. Students will learn to analyze professional writing situations and apply the principles of effective writing to documentation, measurable goals and objectives, grant/proposal writing, letters, memos, case management, and treatment planning in generalist practice and chemical dependency. Topics will include: case assignment, planning, assessment, goal setting, observation, documentation, intervention, evaluation, and referral.

HSSR 2210 Counseling Theories 3 credits
Prerequisite: HSSR 1101 or HSSR 1110 and PSYC 1110

This course presents the major counseling theoretical orientations and philosophies including discussion of major concepts and techniques, impact on the client-helper relationship, advantages and disadvantages of different theories. This course will emphasize practical application.

HSSR 2211 Counseling Techniques 3 credits
Prerequisite: HSSR 2210

The course builds on the basic counseling and

interviewing theories studied in HSSR 2210, with emphasis on learning basic counseling skills that are appropriate to the counseling process in generalist practice and chemical dependency settings. Topics include techniques related to attending skills, facilitating growth, active listening, nonverbal behavior, action responses, motivational interviewing, and determining personal style. Special needs of diverse populations will also be featured.

HSSR 2215 Social Gerontology 2 credits
Prerequisite: HSSR 1101 and PSYC 1110

This class takes a multidisciplinary approach to examining the issues facing people in late adulthood. Students will explore the demographic, sociocultural, and mental health aspects of aging. Problem solving techniques will be covered, along with future trends necessary with the approach of an aging population. Physical, cognitive, and psychosocial aspects of aging will be discussed.

HSSR 2216 Prevention, Diagnosis & Treatment of Chemical Dependency 3 credits
Prerequisite: HSSR 1105

This course systematically studies chemical dependency as well as the theory and practice modalities related to treatment. The course will cover skills needed to recognize the enormity of this problem, how to assess and diagnose it and how to treat individuals and families who come for assistance. Strategies and community resources for diverse populations will be featured. Materials useful in preventing chemical dependency and/or relapse are also presented.

HSSR 2220 Developmental Disabilities 2 credits
 This course covers developmental and lifecycle stages, etiology, psychosocial services, treatment, and education of the developmentally disabled. It also presents an overview of past, present, and future trends in the field. Terminology and legal issues will be discussed.

HSSR 2225 Psychology of Addiction & Family Systems 3 credits
Prerequisite: HSSR 1105

This course will cover a broad range of issues related to addiction including various theories of addiction, how addiction is defined, how it develops, how it is treated, and how it can be prevented. The coursework will include study of biological, developmental, motivational, familial, and cultural aspects of addiction. The course will focus on many types of addiction, including alcohol addiction, drug addiction, tobacco addiction, sex addiction, eating disorders, compulsive gambling, and other emerging forms of addictive behavior. Class activities will include researching and reading journal articles, class discussion, as well as study from the assigned textbooks. This course will also focus on the

impact of addiction on the family system and other relationships. Students will be exposed to the alteration of family patterns due to the presence of addiction. This course features a heavy reliance on academic research (scholarly journals) to supplement the material presented in the texts. (Students who have completed PSYC 2225 may not receive credit for this course.)

HSSR 2265 Diagnosis and Treatment of Mental & Emotional Disorders 3 credits

This course is designed to give an overview and provide an understanding of abnormal behavior in the context of the diagnostic categories as described in the most recent edition of the Diagnostic and Statistical Manual of Mental Disorder (5th Ed.) [DSM-5] and the diagnostic system. A focus of the course will be on the appropriate use of the current edition of the Diagnostic and Statistical Manual for Mental Disorders and an understanding of the International Classification of Diseases [ICD-10], including limits and weaknesses of these approaches—especially with regard to cultural differences and alternatives to them. This course presents the current theories and research concerning the causes, symptoms, and treatment of various mental and behavioral disorders. Focus will be on learning the process of assessment, diagnosis, how to conduct mental status examinations, treatment of mental and emotional disorders including factors influencing these, and on the development and recognition of a framework for identifying symptomology, etiology and psychodynamics of mental and emotional disorders. This course incorporates the use of case studies as a tool to learn how to use diagnosis in developing effective treatment plans.

HSSR 2271 Human Services Practicum I 3 credits

Prerequisites: Must be enrolled in HSSR program, have a minimum of 24 semester hours with a C or better in every course completed in the plan of study, or permission of instructor.

This course consists of a 240 hour placement in a local social services agency under professional supervision which will provide on the job training for students including development of human services skills, integration of human services theories and skill based training, professional documentation. The course includes a one hour per week seminar on-campus, focusing on discussion of learning experiences encountered in the practicum setting. Students will become familiar with the operations of a human services agency including client/staff interaction and employee responsibilities.

HSSR 2272 Human Services Practicum II 3 credits

Prerequisites: Must be enrolled in HSSR program, have a minimum of 24 semester hours with a C

or better in every course completed in the plan of study, or permission of instructor.

This course is designed as a continuation of practical experience and provides an additional 240 hours in a human services agency. Students will increase their level of responsibility in implementing human services skills. Supervision will be provided by a qualified professional. The course includes a one hour per week seminar on-campus, focusing on discussion of learning experiences encountered in the practicum setting. Students will become familiar with the operations of a human services agency including client/staff interaction and employee responsibilities.

HSSR 2280 Crisis Intervention and Trauma-informed Treatment *3 credits*

A writing intensive course covering the nature of mental illness and mental health, organization of community mental health services, history of mental health services, and crisis intervention strategies. Topics include community based and residential treatment, societal impact of deinstitutionalization, assessment of crisis situations, use of short-term interventions to deescalate crisis situations, strategies for meeting the needs of individuals and communities within a diverse population.

MATHEMATICS - MATH

Math Substitution Policy: In programs requiring a specific math course the following substitutions of higher level courses may be made:

MATH 1124 for MATH 1115

MATH 1142 or 2221 for MATH 1120

MATH 1141, MATH 2221 or MATH 2241 for MATH 1118, MATH 1124 sequence (an elective can be used to make up any difference in credit hours) MATH 1141, MATH 2221 or MATH 2241 for MATH 1124

MATH 1106 Pre-Algebra *3 credits*

Prerequisite: A student must meet one of the following criteria to register for this course:

- Two High school STEM or Core Math courses with grades of C or higher

- Accuplacer QAS with a score of 225 or higher

This course is an introduction to elementary algebra. It includes rational numbers, like terms, exponents, and linear equation solving. This course may not be used to meet general education or math requirements in a program. Check with an advisor to see if this course can be used as an elective credit toward a degree.

MATH 1115 Math for the Business and Social Sciences *3 credits*

Prerequisite: Student must meet one of the following criteria to register for this course:

- MATH 1106 with a grade of C or higher

- Two High school STEM or Core Math courses with grades of C or higher

- Accuplacer QAS with a score of 243 or higher

This course is designed for students in technologies related to the social sciences or business. Students will experience mathematical language, notation, and problem solving. Competencies will include Numeracy (critical thinking, problem solving, rates, ratios, dimensional analysis, proportions and percentages), Mathematical Modeling (personal finance, loans, investments, linear functions), and Probability/Statistics (measures of central tendency and spread, interpretation of data presented in graphical form, use of probability in decision making).

MATH 1116 Beginning Algebra *3 credits*

Prerequisite: A student must meet one of the following criteria to register for this course:

- Math 1106 with a grade of B or higher

- Students with a C in 1106 must meet with an advisor before registering

- Three High school STEM or Core Math courses with grades of C or higher

- Accuplacer QAS with a score of 243 or higher

This course includes the basis concepts and techniques of elementary algebra. Topics include solving first degree equations and inequalities, coordinate system graphing of linear equations and inequalities, creating the equation of a line and solving systems of linear equations. This course cannot be used to meet general education or math requirements in a program. This course may be able to be used as elective credit toward a degree. Check with an advisor.

MATH 1118 Intermediate Algebra *4 credits*

Prerequisite: Student must meet one of the following criteria to register for this course:

- Math 1117 or Math 1116 with a grade of B or higher

- Students with a C in MATH 1116 must meet with an advisor before registering.

- Three High school STEM or Core Math courses with grades of B or higher

- Accuplacer QAS with a score of 253 or higher

This course is a continuation of algebra concepts. Topics include a review of elementary algebra concepts, rational expressions, linear equations, polynomials and factoring, radicals, quadratic equations, functions and graphs, exponents, logarithms, and systems of equations. This course cannot be used to meet general education or math requirements in a program. Check with an advisor to see if this course may be able to be used as elective credit toward a degree.

MATH 1119 College Algebra *2 credits*
Corequisite

Prerequisite: Any of the following:

- Grade of C in Math 1118 Intermediate Algebra.
- This course is recommended when repeating Math 1141 College Algebra.
- Three High school STEM or Core Math courses with grades of B or higher (typically Algebra I, Geometry and Algebra II).
- Score of 20 or 21 on the math portion of the ACT
- QAS placement test score of 261 or 262.
- EA placement score of 80 – 89.

Corequisite: Math 1141 College Algebra

This developmental level course is designed to be taken concurrently with Math 1141 College Algebra by students who need some extra support to be successful in Math 1141. This course will closely follow the topics being covered in the concurrent Math 1141 class and will include, as necessary, review topics from Math 1118 Intermediate Algebra. The student should expect intense review or practice and collaboration with other students.

MATH 1120 Technical Mathematics *3 credits*

Prerequisite: A student must meet one of the following criteria to register for this course:

- Math 1118
- Three High school STEM or Core Math courses with grades of C or higher
- Accuplacer QAS with a score of 253 or higher

This course contains skills and applications related to the engineering technologies. Emphasis is on formulas, graphing, trigonometry, vectors, exponential and logarithmic functions.

MATH 1123 Finite Math Co-Requisite *2 credits*

Prerequisite: Any of the following:

- Grade of C in Math 1116 Beginning Algebra
- This course is recommended when repeating Math 1124 Finite Math
- Three High school STEM or Core Math courses with grades of B or higher (typically Algebra I, Geometry and Algebra II)
- Score of 20 or 21 on the math portion of the ACT
- QAS placement test score of 261 or 262
- EA placement score of 80 – 89

Corequisite: Math 1124 Finite Math

This developmental level course is designed to be taken concurrently with Math 1124 Finite Math by students who need some extra support to be successful in Math 1124. This course will closely follow the topics being covered in the concurrent Math 1124 class and will include, as necessary, review topics from Math 1116 Beginning Algebra. The student should expect intense review or practice and collaboration with other students.

MATH 1125 Quantitative Reasoning *4 credits*

Prerequisite: A student must meet one of the following criteria to register for this course:

- Math 1116 with a grade of C or higher.
- Math 1118
- Three High school STEM or Core Math courses with grades of B or higher
- ACT Math score of 22 or higher
- SAT Math score of 530 or higher
- Accuplacer QAS with a score of 263 or higher

This college level mathematics course is designed for students seeking non-STEM degrees. It is a quantitative reasoning course focusing on thought processes involved when investigating situations described by measurements. Three threads define the curriculum: 1) Numeracy. Students will develop and use concepts of numeracy to investigate and explain quantitative relationships and solve problems in a variety of real world contexts. 2) Mathematical Modeling. Students will make decisions by analyzing mathematical models, including situations in which the student must recognize and/or make assumptions. 3) Probability and Statistics. Students will use the language and structure of statistics and probability to investigate, represent, make decisions, and draw conclusions from real-world contexts. The classroom is designed to be an active learning experience supported by student communication.

MATH 1128 Aviation Technician Mathematics *3 credits*

Prerequisite: A student must meet one of the following criteria to register for this course:

- Math 1118
- Three High school STEM or Core Math courses with grades of C or higher
- Appropriate score on College Placement Test.
- Accuplacer QAS 253 or above

This course contains skills and applications related to the Aviation Maintenance Technician program. Emphasis is on formulas, graphing, trigonometry, vectors, fractions, basic math operations, decimals, ratios, proportions, percentages, powers, functions, scientific notation, basic algebra, area, and volume.

MATH 1135 Allied Health Math *3 credits*

Prerequisite: Student must meet one of the following criteria to register for this course:

- MATH 1117 or MATH 1116 or higher
- Three High school STEM or Core Math courses with grades of C or higher
- Accuplacer QAS score of 243 or higher

This course introduces math topics used in allied health fields. The topics covered include metric and household (English) systems, conversion factors, medical dosage calculations for oral medications, parenteral medications, and syringes; pediatric dosages; solutions; safe dosages; infusions; and case studies.

MATH 1141 College Algebra *4 credits*

Prerequisite: MATH 1118 with a B or higher; Students with a C in MATH 1118 must meet with an advisor before registering; Three High school STEM or Core Math courses with grades A, A, B or higher; ACT Math Score of 22 or higher; SAT Math Score of 530 or higher; QAS Placement Test with a score of 263 or higher and Algebra 2 with a B or higher; AAF Placement Test with a score of 263 or higher.

This course emphasizes the use of algebra and functions in problem solving and modeling. Appropriate use of technology and applying mathematics to real-world situations is emphasized. Topics include linear, quadratic, polynomial, rational, radical, exponential, logarithmic, and piece wise equations and functions. Students whose programs recommend a college algebra course or who need to prepare for calculus should take this course.

MATH 1142 College Trigonometry *4 credits*

Prerequisite: One of the following:
 - Four High school STEM or Core Math courses with grades A, A, B, B or higher.
 - MATH 1141
 - ACT Math Score of 26 or higher

This course includes a study of trigonometric functions and their applications. Topics include circular functions, trigonometric functions, trigonometric identities, trigonometric equations, vectors, the complex plane, polar coordinates, conic sections, and applications of these concepts.

MATH 1150 Precalculus *3 credits*

Prerequisites: A student must meet one of the following criteria to register for this course:

- ACT Math score of 24 or higher.
- SAT Math score of 570 or higher.
- Accuplacer AAF score of 263 or higher.
- Four High School Math courses with grades of AAB or higher.
- A in Math 1118.
- Students with a B in Math 1118 must speak to an advisor before registering.

This is an accelerated course designed to prepare students for Calculus. It includes a study of polynomial, rational, exponential, logarithmic, and trigonometric functions, systems of linear equations, trigonometric identities, non-right triangles, vectors, conic sections, an introduction to sequences and series, and an introduction to Calculus. This course emphasizes the use of algebra and trigonometry in problem solving and modeling. Appropriate use of technology is emphasized.

MATH 1160 Statistical Concepts *3 credits*

Prerequisites: Student must meet one of the following criteria to register for this course:
 - Math 1118 or the equivalent with a grade of C or higher
 - Math 1124 or Math 1141
 - Three High school STEM or Core Math courses with grades of B or higher
 - Appropriate score on the College Placement Test
 - ACT Math Score of 22 or higher
 - SAT Math Score of 530 or higher
 - Accuplacer EA with a score of 90 or higher

This course serves as a non-technical introduction to fundamental ideas in statistics. Statistical ideas are introduced through examples, showing how statistics has helped solve major problems in various fields. Students who already earned credit for MATH 281 or MATH 2281 may not earn credit for MATH 1160.

MATH 1199 Seminar *1–6 credits*

This course will be a discussion of particular problems related to a chosen program or area of interest.

MATH 2221 Calculus I *5 credits*

Prerequisite: One of the following:
 - Math 1141 with a grade of B or higher and Math 1142
 - Four High school STEM or Core Math courses with grades A, A, B, B or higher.
This must include a course covering trigonometry
 - ACT Math score of 26 or above.

This course introduces calculus using analytic geometry and transcendental functions. Topics include limits and continuity, derivatives, optimization, related rates, graphing and other applications of derivatives, definite and indefinite integrals, and numerical integration.

MATH 2222 Calculus II *5 credits*

Prerequisite: Math 221 or Math 2221, or the equivalent

This course is a continuation of Math 2221 Calculus I and includes applications of integration such as areas between curves, volumes of rotation, work, arc length, applications to physics and engineering; techniques of integration; parametric equations and polar coordinates; and infinite sequences and series.

MATH 2223 Calculus III *4 credits*

Prerequisite: Math 222 or Math 2222, or the equivalent

This course concerns multivariable calculus and is a continuation of Math 2222. It includes applications of vectors and vector functions; partial derivatives and their applications, including gradients; multiple integration in rectangular, polar, cylindrical and spherical coordinates; vector fields, line integrals, curl and divergence, and Green's, Stokes' and Divergence Theorems.

MATH 2230 Differential Equations 4 credits

Prerequisite: MATH 2222, MATH 223, or the equivalent of two semesters of Calculus

This course is an introduction to ordinary differential equations. Topics include first-order and higher order differential equations, power series solutions, polynomial operators, Laplace transforms, and numerical methods for solving ordinary differential equations. Applications to physical problems will be emphasized.

MATH 2237 Math for the Elementary Teacher I 4 credits

Prerequisite: MATH 118 or MATH 1118, or 3 years of college preparatory math with a minimum grade of "C".

This course includes math topics that are fundamental to elementary education. Topics include a review of problem solving, set theory, numeration systems, whole numbers, decimals, fractions, signed numbers, and the basic binary operations, with an emphasis on the use of manipulatives and visual representations to teach elementary mathematics.

MATH 2238 Math for the Elementary Teacher II 4 credits

Prerequisite: MATH 118 or MATH 1118, or 3 years of college preparatory math with a minimum grade of "C"

This course includes math topics that are fundamental to elementary education. Topics include a review of statistics, probability, Euclidean geometry, measurement, and transformations, with an emphasis on the use of manipulatives and visual representations to teach elementary mathematics.

MATH 2241 Calculus for Business, Social and Life Sciences 5 credits

Prerequisite: Math 141 or Math 1141, or 4 years of college preparatory math

This course is designed for business majors or other majors who will need a calculus based applications course. Topics will include limits, rates of change, optimization and other applications involving derivatives, exponential and logarithmic functions, and applications of integrals. Students who have earned credit for MATH 2221 may not earn credit for this course.

MATH 2250 Linear Algebra 4 credits

Prerequisite: MATH 223 or MATH 2222, or the equivalent

This course serves as a standard introduction to linear algebra. Topics include matrix, operations, vector spaces, inner product spaces, linear transformations, determinants, eigenvalues and eigenvectors.

MATH 2281 Introductory Statistics 4 credits

Prerequisite: A student must meet one of the following criteria to register for this course:

- Finite Math 1124 or College Algebra 1141
- MATH 1118 with a grade of C or higher or - MATH 1125 with a grade of C or higher
- Three High school STEM or Core Math courses with grades of B or higher
- ACT Math Score of 22 or higher
- SAT Math Score of 530 or higher
- Accuplacer QAS score of 263 or higher

This course is designed for students needing a non-calculus-based introduction to statistics. It covers sampling methods, experimental design, descriptive analysis and presentation of data, probability, binomial and normal distributions, the Central Limit Theorem, confidence intervals, hypothesis tests for means and proportions, linear correlation and regression, and chi-square tests.

MEDICAL ASSISTING - MAST**MAST 1101 Introduction to Medical Assisting & Procedures** 3 credits

Prerequisite: Acceptance in the Medical Assistant Technology Program

Corequisite: ALTH 1160, MAST 1111, MAST 1115, MAST 2218, MAST 2240

This course presents introductory level procedures for assisting the physician with patient/client examination. Instruction includes an introduction to medical assisting, certification requirements, orientation to the laboratory, and progresses through theory and techniques utilized by the medical assistant. Content includes communication skills, infection control, aseptic technique, and progresses to office procedures, room preparation, patient/client assessment and education, nutrition, inventory, and equipment maintenance. Competency examination for patient/client history, biohazardous spill, contaminated glove removal, handwashing, vital signs, positioning and draping, and specialty examinations are included.

MAST 1111 Medical Administrative Procedures 3 credits

Prerequisite: Acceptance in Medical Assistant Program

Corequisite: ALTH 1160, MAST 1101, MAST 1115, MAST 2218, MAST 2240

This course is designed to introduce the student to administrative and general duties found in a medical office, and includes appointment scheduling, records management, electronic health records, written communications, preparation of medical records, ICD-10-CM and CPT medical coding, health insurance, billing and collections, transcription of letters and medical reports, and telephone procedures. Office simulations

and administrative competency based examinations are included.

MAST 1115 Medical Terminology *2 credits*

This course is designed for the health science student and includes the principles of building a medical vocabulary. Emphasis is placed on the use of word parts including prefixes, suffixes, and root words used with a combining form to establish medical terms. The course provides an overview of body systems, their anatomy and physiology, diseases, conditions, current medical and diagnostic procedures, treatments, and pharmaceutical agents, used in conjunction with terminology. Authentic medical records with activities to enhance the application of medical terminology to the “real world of medicine” are included. Correct spelling, definition, and pronunciation of medical terms is stressed. Communication both written and verbally between health care professionals, and between the health professional and patient, is emphasized.

MAST 1118 Human Diseases *2 credits*

Prerequisites: MAST 1115

This course includes basic information about common medical conditions, diseases, and the disease process. Emphasis will be placed on documentation of symptoms, patient assessment, case management - including diagnostic tests indicated, treatment indicated, client teaching required and ways to validate a patient’s understanding of their disease and treatment. Course content includes major conditions organized by body system and a nine-part format consisting of description, etiology, signs and symptoms, diagnostic procedures, treatment, complimentary therapy, client communication, prognosis and treatment. Current ICD-10-CM coding systems are discussed and codes are listed for each disease reinforcing the importance of proper coding for reimbursement and research.

MAST 1126 Clinical Practicum I *1 credit*

Prerequisites: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218, MAST 2240

Corequisites: MAST 1118, MAST 2205, MAST 2215, MAST 2230, MAST 2226 MAST 2297

The Medical Assistant Practicum Program is an unpaid practicum, under professional supervision, in an ambulatory healthcare setting. The practicum program allows students to continue hands on learning for safe and effective performance of patient care in the medical office. Students will demonstrate knowledge gained and the psychomotor skills and affective behaviors acquired, from previous learning performances of core curriculum in the administrative and clinical duties of a medical assistant.

MAST 1199 Seminar

1-6 credits

Prerequisite: Refer to syllabus addendum for any pre-requisites.

This course will be a discussion of particular problems related to the student’s chosen program and areas of interest.

MAST 2205 Medical Law & Ethics *2 credits*

This course is an introduction to the legal and ethical challenges faced in the practice of health care. Topics include requirements for licensure, certification, and registration of medical professionals. Discussion and class exercises relate to the correlation of medical office employees to the public, civil and criminal acts, negligence, contracts, bioethics, litigation in the medical workplace, HIPPA, use of consent forms, patient rights and confidentiality, the medical record and related topics in the news.

MAST 2215 Medical Laboratory Techniques *3 credits*

Prerequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218, MAST 2240

Corequisite: MAST 1118, MAST 1126, MAST 2205, MAST 2226, MAST 2230. MAST 2297

An introduction to diagnostic laboratory procedures performed in the physician’s office and medical laboratory science. Principles of laboratory procedures will be studied by observation, discussion, and practice in the laboratory sessions with emphasis on collection, proper handling, including blood and body fluid restrictions, and identification of specimens, basic hematology procedures, routine urinalysis, rapid strep, pregnancy tests, and venipuncture for competency.

MAST 2218 Medical Billing & Coding *3 credits*

Prerequisite: Acceptance in Medical Assistant Technology

Corequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2240

The course begins with the fundamentals of initiating, tracking and processing insurance forms for commercial insurance carriers. Basic theory and coding principles utilizing Current Procedural Terminology (CPT), International Classification of Diseases (ICD-10-CM), and Healthcare Common Procedure Coding System (HCPCS) for completion of medical insurance claims. Use of appropriate terminology is emphasized along with accurate abstracting of information from the office medical record. A Competency Based Exam (CBE) for accurate completion of CMS-1500 is completed.

MAST 2226 Clinical Practicum II *1 credit*

Prerequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218, MAST 2240

Corequisites: MAST 1118, MAST 1126, MAST 2205, MAST 2215, MAST 2230, MAST 2297

The Medical Assistant Practicum Program is an unpaid practicum, under professional supervision, in an ambulatory healthcare setting. The practicum program allows students to continue hands on learning for safe and effective performance of patient care in the medical office. Students will demonstrate knowledge gained, and the psychomotor skills and affective behaviors acquired, from previous learning performances of core curriculum in the administrative and clinical duties of a medical assistant.

MAST 2230 Pharmacology for Medical Assisting *3 credits*

Prerequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218, MAST 2240

Corequisites: MAST 1118, MAST 1126, MAST 2205, MAST 2215, MAST 2226, MAST 2297

Presentation of the principles of pharmacology relating to the medical assisting profession. Instruction introduces the student to patient education regarding medications, researching drugs in a drug reference and correlation of drug therapy and pathophysiologic conditions. Knowledge and experience is gained through research of drug generic and trade names, usage, action, side effects, and contraindication in a drug reference book, and recording the information on pharmacology index cards. Course content includes pharmacology math, routes of medication administration and parenteral techniques most commonly administered in the medical office. Emphasis is placed on competency based skills and worksheet documentation to record oral and parenteral medications administered, dispensed, or prescribed during classroom simulation and the practicum experience.

MAST 2240 Clinical Procedures *3 credits*
Prerequisite: Acceptance in the Medical Assistant Technology Program

Corequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218

Presents the theory and techniques required by the medical assistant to perform fundamental skills at intermediate and advanced levels. Procedure skills include those associated with Gastroenterology, Urology, Neurology, Obstetrics, Gynecology, Geriatrics, family medical practice, surgical, and specialty practices. Emphasis is placed on competency based skills and techniques used in male and female catheterization, enemas, patient/client instructions for GI testing, pre- and postnatal exams, Pap smears, assisting with minor surgical procedures, assisting with technical diagnostic procedures, and technique.

MAST 2297 Medical Assisting Review *2 credits*
Prerequisite: ALTH 1160, MAST 1101, MAST 1111, MAST 1115, MAST 2218, MAST 2240
Corequisite: MAST 1118, MAST 1126, MAST 2205,

MAST 2215, MAST 2226, MAST 2230

This course is designed as a review tool for the Medical Assisting student in preparation for successful completion of credentialing examination, to aid students in discovery of content areas needing review, recalling administrative, clinical and trans-disciplinary medical assisting principles, medical assisting guidelines, skill competency review, and practice of computer-based test-taking skills.

NURSING - NRSG (ADN)

NRSG 1107 Nursing Ethics *2 credits*

Prerequisites: English 1101 and NRSG 1500

This course will assist the beginning nurse to understand the ethical foundation of nursing practice. Learning assignments are designed to provide a comprehensive overview of the provision of ethical nursing care across the lifespan.

NRSG 1200 Pathophysiology *2 credits*

Prerequisite: Acceptance into the Nursing Program

Corequisites: BIOL 1510, BIOL 1511, MATH 1135, and NRSG 1500

This course provides a foundational study of pathological processes and their effect on homeostasis across the lifespan. Using a concept-based approach, normal physiological processes, variations from normal, risk factors, assessment findings, and diagnostic tests will be explored in relation to nursing practice.

NRSG 1300 Pharmacology *2 credits*

Prerequisite: BIOL 1510, BIOL 1511, MATH 1135, NRSG 1200, and NRSG 1500

Corequisites: BIOL 1520, BIOL 1521, ENGL 1101, NRSG 1600, and PSYC 1111

This course promotes the development of basic pharmacologic principles across the lifespan, with an emphasis on clinical application and decision making in nursing practice.

NRSG 1500 Nursing Concepts I: Normal Findings *6 credits*

Prerequisite: Acceptance into the Nursing Program

Corequisites: BIOL 1510, BIOL 1511, MATH 1135, and NRSG 1200

This course promotes the development of basic nursing skills through use of evidence based practice, critical thinking and the nursing process.

NRSG 1600 Nursing Concepts II: Wellness and Basic Chronic Conditions *6 credits*

Prerequisite: BIOL 1510, BIOL 1511, MATH 1135, NRSG 1200, and NRSG 1500

Corequisites: BIOL 1520, BIOL 1521, ENGL 1101, NRSG 1300, PSYC 1111

This course promotes the development of holistic, therapeutic nursing care, with an emphasis on development of critical thinking and clinical judgment to provide safe and high-quality care to adults.

NRSG 2200 LPN to RN Bridge *3 credits*

Prerequisite: Acceptance into the Nursing Transition Pathway

Corequisites: NRSG 2300, BIOL 2300, BIOL 2301

This 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.

NRSG 2300 Concepts of Maternal Care *2 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, ENGL 1101, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, and PSYC 1111

Corequisites: BIOL 2300 and BIOL 2301

This course promotes the development of holistic, patient centered care with an emphasis on utilizing clinical judgment to provide safe care for the mother and newborn baby.

NRSG 2400 Mental Health Nursing *2 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, BIOL 2300, BIOL 2301, ENGL 1101, ENGL 1102, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, NRSG 2300, NRSG 2500, NRSG 2700, PSYC 1111, and SOCI 1170

This course will provide guidance in the formation of clinical judgment that can be applied to the nursing care of those with mental illness. Topics such as effective communication and the use of the therapeutic nurse-patient relationship are covered.

NRSG 2500 Nursing Concepts III: Acute and Chronic Conditions *5 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, BIOL 2300, BIOL 2301, ENGL 1101, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, NRSG 2300, and PSYC 1111

This course is designed to promote the development of clinical judgment in the beginning nurse that can then be applied to the nursing care of those with acute and chronic health conditions in an acute care setting. Assignments are provided to foster the ability of the learner to recognize priorities of patient care for each individual patient.

NRSG 2600 Nursing Concepts IV: Complex & Higher Acuity Conditions *4 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, BIOL 2300, BIOL 2301, ENGL 1101, ENGL 1102, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, NRSG 2300, NRSG 2500, NRSG 2700, PSYC 1111, and SOCI 1170

Corequisites: NRSG 1107, NRSG 2400 and NRSG 2800

This course is designed to promote the development of clinical judgment in the student nurse that can then be applied to the nursing care of those with acute and complex health conditions in an acute care setting. Learning assignments are provided to foster the ability to recognize priorities of patient care for each individual patient and to prepare the student for nursing practice.

NRSG 2700 Concept of Child Nursing Care *3 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, BIOL 2300, BIOL 2301, ENGL 1101, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, NRSG 2300 AND PSYC 1111

Corequisites: ENGL 1102, NRSG 2500, SOCI 1170

This course promotes the development of holistic family centered nursing care, with an emphasis on growth and development and providing safe care to children and their families.

NRSG 2800 Nursing Capstone *4 credits*

Prerequisite: BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, BIOL 2300, BIOL 2301, ENGL 1101, ENGL 1102, MATH 1135, NRSG 1200, NRSG 1300, NRSG 1500, NRSG 1600, NRSG 2300, NRSG 2500, NRSG 2700, PSYC 1111, and SOCI 1170

Corequisites: NRSG 1107, NRSG 2400, and NRSG 2600

This course is designed to allow the student to synthesize and apply acquired knowledge in preparation for transition into the role of the Registered Nurse.

OFFICE INFORMATION TECHNOLOGY - OFIT

OFIT 1106 Keyboarding Techniques I *3 credits*

In this course, students will master the computer keyboard by touch for personal use or in preparation for work in a business setting. Students will learn proper keyboarding technique while keying alphabetic, numeric, and 10-key numeric keypad characters. Students will complete activities online, where drills will facilitate learning the keyboard and developing speed and accuracy. In addition, students will use Microsoft Word 2016 to demonstrate basic level production formatting of emails, memos, business correspondence, tables, business reports, manuscripts, and research paper.

OFIT 1130 Word Processing I *3 credits*

Beginning word processing course using adopted Microsoft Word release edition. Focus will be on creating, formatting, editing, saving, retrieving, and printing documents using word processing software. Included will be maintenance and customization of documents, creating and formatting tables and enhancing documents with special features in preparation for the Microsoft Word 77-725 Exam.

OFIT 1145 Interpersonal Skills *3 credits*

This course provides training in interpersonal skills and tips for managing people at work and is designed to help students focus on developing and practicing interpersonal skills in team-building, negotiating, conflict resolution skills, and empowerment through creative role-playing and constructive feedback.

OFIT 2231 Windows 7 *3 credits*

This course will provide an understanding of Windows Operating System basics as it pertains to files, folders, programs, desktop customization, adding software and hardware, troubleshooting and repair, security, and sharing of information.

OFIT 2232 Introduction to Business Management *3 credits*

This class introduces the student to the fundamentals of business. Special emphasis is placed on business in the global economic environment, organization and management, operations and technology, personal finance management.

OFIT 2236 Desktop Publishing & Office Applications *3 credits*

An overview of the purpose and description of desktop publishing. Basic layout and design capabilities using a hands-on approach on the computer. Students will be able to develop a portfolio of published assignments, desktop terminology and critiques of effective and poor design concepts in desktop communications. Included will be the understanding of the desktop publishing process, preparing internal documents, creating letterheads, business cards, personal documents, brochures, booklets, promotional documents, and creating newsletters utilizing Microsoft Office.

OFIT 2290 Internship *4 credits*

Prerequisite: Students must have completed 25 credit hours in the Office Information Technology studies area with a grade of “C” or above in each course.

A supervised on or off-campus office work experience applying knowledge and skills learned in the classroom or on-line learning experience. Twenty-one (21) hours of work per week required for three credits. An on-campus seminar or online learning seminar will

be included for one credit hour. Students must have completed 25 credit hours in the Office Information Technology studies area with a grade of “C” or above in each course.

OFIT 2299 Research Project *1 to 5 credits*

Prerequisite: sophomore standing

Independent study in the area office administration technology and office administration in a formal report, research paper, project, or a combination of these. Selection of the area of study or project is made in consultation and approval of the instructor.

PHILOSOPHY - PHIL**PHIL 1100 Critical Thinking** *3 credits*

This course is designed to improve the critical thinking skills associated with various forms of reasoning. The process of reasoning emphasized in this course involves identifying, analyzing, evaluating, and constructing arguments. Students will be able to identify formal and informal logical fallacies, both to avoid these in their own thinking and to criticize these in thinking presented to them. Throughout the course, we will emphasize the principles of critical thinking as they apply to several different forms of reasoning including scientific, causal, statistical, legal, and/or moral reasoning.

PHIL 1101 Introduction to Philosophy *3 credits*

Prerequisite: ENGL 1101

This course is an introduction to theories and techniques in philosophy that may range from ancient to contemporary traditions. Is there such a thing as truth? Can you know you are not dreaming while you read this sentence? Does science tell us everything there is to know? Are some things more real than others? Are our minds purely physical, or are they something else? Are there better and worse ways to answer such questions? We will explore questions like these and many more!

PHIL 1102 Introduction to Western Philosophy *3 credits*

Prerequisite: ENGL 1101

This course is designed to acquaint students with the value and various methods of philosophically examining life experiences, as well as to acquaint them with the historical development of Western philosophy from the Greeks to the modern age. Students are required to read at least one primary work by a major Western philosopher as well as to write short philosophical papers. In addition, students will be encouraged to raise philosophical questions about knowledge, experience, value systems, and so forth.

PHIL 1107 Ethics *3 credits***Prerequisite:** ENGL 1101

What kind of person should I be? How should we treat others? What makes actions right or wrong? Is there any reason to be moral? Is morality relative or subjective? How, if at all, can such questions be answered? This course is designed to acquaint students with formal theories and basic frameworks for ethical thinking, as well as with many of the major ethical issues and moral questions that dominate contemporary life. Students will gain familiarity with some canonical texts and develop skills of close-reading and group discussion when it comes to ethical inquiry.

PHYSICAL SCIENCE - PHYS**PHYS 1101 Introduction to Physical Science** *3 credits*

An introductory course designed to allow students to explore the basic concepts of physical science. Students will be introduced to the history and nature of science. The course includes an introduction to the fundamental concepts of physics, chemistry, astronomy, and earth science. Students will be encouraged to explore the relationship between science and everyday life.

PHYS 1104 Physical Geology *4 credits*

This course introduces the concepts and principles of the Earth's materials and processes. Topics include: concepts of plate tectonics, mineral identification, rock formation, soils, stream development, ground water, seismology, volcanism, glaciation, energy and mineral resources, and their effects on man's environment and society.

PHYS 1115 Applied Physics II (Heat, Light, Sound) *3 credits*

Prerequisite: MATH 1118 or the equivalent
Corequisite: MATH 1120, or MATH 1141, or MATH 1142

This course introduces the student to concepts of temperature and effects of heat, heat and change of state, heat transfer, thermodynamics, harmonic motion, waves, sound, light and illumination, reflection, refraction, and dispersion of light and optical instruments. Demonstrations and laboratory work to complement class work.

PHYS 1117 Applied Physics I (Mechanics) *3 credits*

Prerequisites: MATH 1118 or the equivalent
Corequisite: MATH 1120, or MATH 1141, or MATH 1142

An introductory, algebra based, survey course suitable for applied science and pre-med assisting majors covering the topics of measurement, space, time, vectors, one dimensional and multi-dimensional motion,

dynamics, forces, work and energy, conservation of energy, systems of particles, collisions, rotational motion, rotational dynamics. Laboratory component is included.

PHYS 1121 Applied Physics III (Electricity and Magnetism) *3 credits*

Prerequisites: MATH 1118, or the equivalent
Corequisite: MATH 1120, or MATH 1141, or MATH 1142

An algebra based introductory course in electrostatics, magnetism, electromagnetism, electromagnetic induction and sources and effect of electric current, alternating current, circuits and introduction to concepts of atomic energy. Demonstrations and laboratory work to complement class work.

PHYS 1130 Astronomy *3 credits*

This course will explore the captivating world of astronomy, delving into both foundational principles and cutting-edge discoveries in cosmology. From the evolution of stars to the vastness of the universe, we will unravel the mysteries of celestial phenomena and recent advancements in our understanding of the cosmos. Embark on a journey through the cosmos, where ancient mysteries meet modern science. Join us as we explore the wonders of the universe and uncover its secrets in this immersive Introduction to Astronomy course.

PHYS 2201 General Physics I (Algebra Based) *4 credits*

Prerequisites: MATH 1141 and 1142, or equivalent.
Or: MATH 1120 or MATH 1141 Students with the following majors: EENG, ENDS, AVIT, and CSCI.

An introductory algebra-based survey course suitable for science and pre-med majors, covering the topics of measurement, space, time, vectors, one dimensional and multi-dimensional motion, dynamics, forces, work and energy, conservation of energy, systems of particles, collisions, rotational motion, rotational dynamics, elasticity, fluids, gravitation, waves and sound, heat and thermodynamics. The lab portion of the course provides concurrent hands on experiments, which require imperial data to be collected, analyzed, and synthesized to solidify the physical concepts in PHYS 2201.

PHYS 2202 General Physics II (Algebra Based) *5 credits*

Prerequisite: PHYS 2201

Continuation of PHYS 2201. Introduction into electric charge, capacitance, resistance, inductance, circuits, magnetism, optics, quantum, atomic and nuclear physics. The lab portion of the course provides concurrent hands on experiments, which require imperial data to be collected, analyzed, and synthesized to solidify the physical concepts in PHYS 2201.

PHYS 2221 College Physics for Scientists & Engineers I *4 credits*
(Calculus Based)

Prerequisites: MATH 1141 and MATH 1142

Corequisites: MATH 2221 and PHYS 2231

An introductory, calculus based, survey course suitable for science and pre-med majors, covering the topics of measurement, space, time, vectors, one dimensional and multi-dimensional motion, dynamics, forces, work and energy, conservation of energy, systems of particles, collisions, rotational motion, rotational dynamics, elasticity, fluids, gravitation, waves and sound, heat and thermodynamics. Lab PHYS 2231 must be taken concurrently.

PHYS 2222 College Physics for Scientists & Engineers II *4 credits*
(Calculus Based)

Prerequisites: MATH 2221 and PHYS 2221

Corequisites: MATH 2222 and PHYS 2232

A continuation of PHYS 2221 including topics of electric charge, electric fields, Gauss' law, electric potential, capacitance, current and resistance, basic DC circuits, introductory magnetism, Ampere's law, optics, quantum, atomic and nuclear physics. Lab PHYS 2232 must be taken concurrently.

PHYS 2231 College Physics for Scientists & Engineers Lab I *1 credit*

Corequisite: PHYS 2221

Lab must be taken concurrently with PHYS 2221 College Physics for Scientists and Engineers I.

PHYS 2232 College Physics for Scientists & Engineers Lab II *1 credit*

Prerequisite: PHYS 2221

Corequisite: PHYS 2222

Lab must be taken concurrently with PHYS 2222 College Physics for Scientists and Engineers I.

POLITICAL SCIENCE - PSCI

PSCI 1104 American Government *3 credits*
(The American Democracy I)

This course examines the institutions, processes, and influences of American political institutions and political behavior, including history and theories of American democracy, institutions of national government, federalism, and political processes (parties, elections, interest groups and public opinion).

PSCI 1105 American Government *3 credits*
(The American Democracy II)

This course is a survey of the fundamental theories, events and personages of American political thought. Through the lens of politics, policy diplomacy and war, political change and its repercussions will be examined. The socialization of thought and public opinion via the major two-party political system will be discussed. Interest group theory, along with the rise of the mass media and the role they play in the political system, will be topics of study. Besides these issues, the economic policy of the United States will be traced from its Hamiltonian origins to its major transformation during the New Deal era. Lastly, the foreign and defense policy from the inception of the Republic to the present day, with its evolution from a weak de-centralized confederacy to the world's pre-eminent superpower, are to be investigated.

PSCI 1199 Seminar *1-9 credits*

This course will be a discussion of particular problems related to the student's chosen program and areas of special interest.

PSCI 2206 International Relations *3 credits*

Prerequisite: PSCI 1104

This course examines and applies the basic theoretical perspectives in international relations. It addresses important global issues including the origins of war, economic relations, and human rights, as well as the role of international institutions in global governance.

PSCI 2207 State & Local Government *3 credits*

Prerequisite: PSCI 1104

This course examines the political processes and institutions of U.S. state and local government. Topics include: state and local politics; state constitutions; municipal corporations and charters; political participation; institutions and processes; intergovernmental relations; political parties and interest groups; and, policy issues and outcomes in state and local government with special reference to Ohio.

PSCI 2208 Comparative Government & Politics *3 credits*

Prerequisite: PSCI 1104

This course examines basic concepts, approaches to and comparisons of different political systems, including institutions and political processes, political cultures, ideologies, participation, and interest groups.

PRACTICAL NURSING - PRAC**PRAC 1200 Pathophysiology** *2 credits***Prerequisite:** Acceptance into the Practical Nursing Program.**Corequisite:** BIOL 1510, BIOL 1511, MATH 1135, and PRAC 1500

This course addresses the pathophysiology of selected disorders across the lifespan and the nursing implications of this knowledge.

PRAC 1300 Pharmacology *2 credits***Prerequisite:** BIOL 1510, BIOL 1511, MATH 1135, PRAC 1200 and PRAC 1500**Corequisite:** BIOL 2206 and PRAC 1600

This course introduces the nursing student to the pharmacologic practice of the licensed practical nurse.

PRAC 1500 Practical Nursing Concepts I *5 credits***Prerequisite:** Acceptance into the Practical Nursing Program.**Corequisite:** BIOL 1510, BIOL 1511, MATH 1135, and PRAC 1200

This course introduces the Practical Nursing student to nursing care of the patient with normal findings.

PRAC 1600 Practical Nursing Concepts II *5 credits***Prerequisite:** BIOL 1510, BIOL 1511, MATH 1135, and PRAC 1200, and PRAC 1500**Corequisite:** BIOL 1520, BIOL 1521, PRAC 1300

This course will guide the Practical Nursing student to develop nursing knowledge and skill related to wellness, health promotion, and to care for the patient with basic chronic conditions.

PRAC 1700 Practical Nursing Concepts III *7 credits***Prerequisite:** BIOL 1510, BIOL 1511, BIOL 1520, BIOL 1521, MATH 1135, PRAC 1200, PRAC 1300, PRAC 1500, and PRAC 1600**Corequisite:** ENGL 1101

This course will guide the Practical Nursing student to develop nursing knowledge and skill related to wellness, health promotion, and to care for the patient with acute and chronic conditions.

PSYCHOLOGY - PSYC**PSYC 1104 Industrial Psychology** *3 credits***Prerequisite:** None - PSYC 1110 Principles of Psychology is recommended.

This course is designed to give broad overview of the field of industrial psychology.

PSYC 1108 College Success *2 credits*

This is a performance-based course comprised of two components designed to: 1) introduce students to basic computer skills, Microsoft Word, Excel and PowerPoint, internet and library resources, and 2) increase student success in college by developing self-esteem, personal responsibility, self-motivation, resource management, study skills and academic and career planning.

PSYC 1110 Principles of Psychology *3 credits*

Survey course which examines the complex individual, the many factors believed to drive the individual, and the resulting behavior. Application of the scientific method as a tool in the discovery of individual functioning.

PSYC 1111 Life Span Human Development *3 credits*

Application of the scientific method to study physical/neurological, socio/emotional, and cognitive development across the lifespan.

PSYC 1199 Seminar *1-6 credits*

Discussion of particular problems related to chosen program and areas of interest.

PSYC 2207 Human Growth & Development *3 credits***Prerequisite:** PSYC 1110

Application of the scientific method to study physical/neurological, socio/emotional, and cognitive development in childhood and adolescence.

PSYC 2210 Social Psychology *3 credits***Prerequisite:** PSYC 1110

This course explores basic concepts in Social Psychology and includes a review of social perception, social influence, and social relations. Additionally, the way that we perceive ourselves and others; how people influence others; and what causes us to like, love, help, or hurt others will be examined. Students will also learn how social psychology research is applied to address social problems in diverse fields.

PSYC 2225 Psychology of Addiction & Family Systems *3 credits***Prerequisite:** HSSR 1105

This course will cover a broad range of issues related to addiction including various theories of addiction, how addiction is defined, how it develops, how it is treated, and how it can be prevented. The coursework will include study of biological, developmental, motivational, familial, and cultural aspects of addiction. The course will focus on many types of addiction including alcohol addiction, drug addiction, tobacco addiction, sex addiction, eating disorders, compulsive gambling, and other emerging forms of addictive behavior. Class activities

will include researching and reading journal articles, class discussion, as well as study from the assigned textbooks. This course will also focus on the impact of addiction on the family system and other relationships. Students will be exposed to the alteration of family patterns due to the presence of addiction. This course features a heavy reliance on academic research (scholarly journals) to supplement the material presented in the texts.

PSYC 2241 Educational Psychology *3 credits*
Prerequisite: PSYC 1110 & EDUC 1000

This course deals with the major theories of human development and learning, motivation, instructional strategies, assessment, and examines similarities and differences in learners. The role of factors in the students' learning and development are considered.

PSYC 2275 Abnormal Psychology *3 credits*
Prerequisite: PSYC 1110 or equivalent

This course is an overview of the current theories and research concerning the causes, symptoms, and treatment of various mental and behavioral disorders. Current mental health resources are examined and evaluated as to their effectiveness.

REAL ESTATE - REST

REST 1171 Principles of Real Estate *3 credits*

Principles of Real Estate is an introductory course for the pre-licensing requirements of the Ohio Real Estate Salesperson Exam. It provides an overview of the real estate industry and a study of sales agent principles and practices. It introduces basic real estate concepts, terminology and operations. This course is required for the Ohio licensing exams. Your Ohio Real Estate License test encompasses 80% of this material.

REST 1173 Real Estate Law *3 credits*

Real Estate Law teaches students the basics of Ohio and federal laws as they relate to the real estate transactions. This course is required for the Ohio Real Estate Salesperson License exams.

REST 2275 Real Estate Finance & Appraisal *3 credits*

Real Estate Finance and Appraisal is a study of the role of financing in the real estate industry, ranging from nation-wide cycles of the finance market to the particularities of PMI, Fannie Mae, and FHA loans. REST 2275 also focuses on the theory and methodology of real estate appraisal. Contextual materials, such as market analysis and mathematical study, and a detailed study of the three basic appraisal techniques are included. This course is required for the Ohio licensing exams.

SOCIOLOGY - SOCI

SOCI 1107 Introduction to Diversity *3 credits*

This course focuses on the similarities and differences among racial, ethnic, cultural and minority populations in the United States. The goal of this course is to provide an introductory sociological perspective of diversity. Basic theories of race, ethnic, cultural, and gender relations will be examined as well as the consequences of conflict, prejudice, and discrimination in the United States.

SOCI 1120 Cultural Anthropology *3 credits*

This course will explore the fundamental principles of cultural anthropology, such as knowledge of the discipline, theories, research methodologies, the diversity of global culture, diversity in basic human institutions such as marriage, family, the economy, politics, religion, as well as variations in other areas such as sex and gender, race and ethnicity, and the basis of social stratification. In general, this course will explore the sociohistorical nature of humanity, from what we know from the past to the present, as well as the various ways of life human beings socially construct their realities relative to differing times and place.

SOCI 1150 Marriage & Family *3 credits*

Analysis of the socio-historical evolution of families through the utilization of major theoretical frameworks (Functionalism, Conflict, and Symbolic Interactionism). Examines the diversity of family forms and processes in contemporary society and explores the connections between families and other social institutions. Assessment of families as agents of socialization and as potential sites of social problems (violence and/or crisis).

SOCI 1170 Introduction to Sociology *3 credits*

Introduction to the theoretical foundations and methods used to gather, interpret, and evaluate data in sociology. Insight into how society is organized by focusing on the structure and function of social institutions, the impact of culture and socialization on individuals and groups, and systems of stratification among various racial and ethnic, social class, gender and sexuality groups.

SOCI 1199 Seminar *1-6 credits*

This course will be a discussion of particular problems related to chosen program and areas of interest.

SOCI 2230 Social Problems *3 credits*

This course is a comprehensive sociological inquiry into the nature and prevalence of modern social problems. This course will explore the origins, current social implications, and possible solutions for each of these problems.

SOCI 2231 Juvenile Delinquency 2 credits

This course will examine and comparatively analyze a number of theories in the study of juvenile delinquency and also explore a range of criminogenic social factors associated with delinquent behavior. This course will also offer a survey into the nature and extent of juvenile delinquency and provide an extensive overview of the juvenile justice system and its stages of operation.

SOCI 2232 The Criminal Justice System 3 credits

This course will provide an overview of the criminal justice system by examining legal and political institutions as well as the behavioral nature of crime. The role of law enforcement, the courts, and corrections will be analyzed through the development of case law and practical application.

THEATER - THEA**THEA 1101 Acting Studio 3 credits**

Students will participate as actors in a Southern State Community College theatre production. An audition is required.

THEA 1104 Technical Studio 3 credits

Students will participate as stage managers or crew members (set, properties, costumes, lighting, sound, house, dramaturgy, etc.) in a Southern State Community College theatre production. An application/interview is required.

THEA 1121 Introduction to Theatre 3 credits

This course is a broad overview of the theater. It includes a basic view of the art form itself, audience and criticism, the play, the history and development of theater as well as an overview of the processes involved in production. Trends in theatre today will also be explored.

THEA 1131 Acting I 3 credits

This course is an introductory study of acting and the actor. Emphasis will be placed on developing the actor's instrument (voice and body), ensemble work, improvisation, pantomime, and monologue/scene performance. Various acting techniques and styles will be explored. Students will also learn and utilize basic acting terminology.

THEA 1132 Acting II 3 credits

Prerequisite: THEA 1131 or Permission of Instructor

This course is a continuation of the study of acting and the actor. Emphasis will be placed on developing the actor's instrument (voice and body), ensemble work, improvisation, pantomime, monologue and scene performance. Students will also explore different acting techniques and styles. Acting and stage vocabulary will be reinforced.

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Makeup supplies will be studied as well as techniques for corrective, old-age, character, stylized and special effects makeup.

THEA 1140 Stagecraft 3 credits

This course is an introduction to scenic design and construction. Emphasis will be placed on practical application of knowledge and skills in the following areas: safety, tools, materials, construction, painting, and stagehand duties. Costumes, lighting, and sound will also be explored to some degree.

THEA 1150 Stage Makeup 3 credits

This course focuses on the history of makeup and basic approaches to applying makeup for the stage and screen.

THEA 2204 Advanced Theatre Studio 3 credits

Prerequisite: Permission of Instructor

Students will participate as actors, designers or crew members in a Southern State Community College Theatre production. Areas of production include: acting, stage management, dramaturgy, publicity, house, lighting, sound, set, props, costumes and makeup. An audition or interview is required.

THEA 2220 Script Analysis 3 credits

Prerequisites: THEA 1121 & ENGL 1101

This course focuses on play structure, research, analysis, and bringing the script to life on the stage. Plays from several periods and genres will be examined from the point of view of the playwright, dramaturg, director, designer/technician, and actor.

THEA 2231 Advanced Acting 3 credits

Prerequisite: THEA 1132 or Permission of Instructor

This course is a continuation of the study of acting and the actor. Emphasis will be placed on developing the actor's instrument (voice and body), ensemble work, improvisation, pantomime/mime, monologue, and scene performance. Students will also explore different acting techniques and styles. Acting and stage vocabulary will be reinforced.