



ASLA111 American Sign Language I

Credit Hours: 3

American Sign Language (ASL) provides language training and cultural enrichment for people who wish to learn ASL and the uniqueness of deaf culture. This class will not prepare students to become interpreters but is designed to introduce students to the language and culture. This class is particularly useful for students pursuing careers such as allied health, nursing, medical management, or other healthcare related fields as well as paralegal studies where clients may be deaf. The class is designed to allow students to complement their degrees with an ASL experience.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply basic language skills to produce ASL in a variety of ways to communicate effectively with deaf adults and children who depend on visual representations of English for communication.
- Use classifiers through directionality, word signs, noun placements and non-manual signals.
- Produce intermediate receptive comprehension and expressive information.
- Recognize the diversity of the deaf culture through theory discussion, guest speakers and local events.



ASLA121 American Sign Language II

Credit Hours: 3

This second semester American Sign Language course is a continuation of language skills and cultural enrichment introduced in ASLA111. The course will not prepare students to become interpreters but is designed to advance language skills and further promote understanding of deaf culture. This course is particularly useful for students pursuing careers such as allied health, nursing, medical management, or other healthcare related fields as well as paralegal studies where clients may be deaf. The class is designed to allow students to complement their degrees with an ASL experience. Prerequisite(s): ASLA111 with a C or better grade

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply the next level of language skills to produce ASL in a larger variety of ways to communicate effectively with deaf adults and children who depend on visual representations of English for communication.
- Use a broader array of classifiers through directionality, word signs, noun placements and non-manual signals.
- Produce a broader range of receptive comprehension and expressive information.
- Examine the diversity of the deaf culture through theory, discussion, guest speakers and local events.



BIOL110 Foundations of Cell Biology**Credit Hours: 3**

This course provides a foundation in fundamental biological and cellular concepts common to plants, animals, and microorganisms. Topics include the chemical and molecular basis of life, metabolism, cellular reproduction, principles of inheritance, and evolution. Co-requisite(s): BIOL110L

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate an understanding of scientific classification and the science of taxonomy.
- Express understanding of foundational chemistry principles including basic atomic structure, chemical bonding, chemical reactions and the pH scale
- Describe the structure of the macromolecules and their relationship to the living organism
- Analyze cell membrane structure, function and the various forms of membrane transport
- Discuss the importance of thermodynamics and the role of ATP in biological systems
- Compare aerobic and anaerobic pathways in cellular respiration
- Explain the process of photosynthesis
- Analyze the various types of communication between cells
- Distinguish between mitosis and meiosis and state the importance of each to the life cycle of an organism
- Describe the process of transcription and translation.
- Examine the concepts of Mendelian genetics, including the principles of dominance, segregation and independent assortment
- Predict genetic changes that affect cell cycle control and may result in cancer
- Analyze practical applications of DNA technology.
- Write and present a position paper that analyzes an issue in current biological sciences.



BIOL110L Foundation of Cell Biology Lab**Credit Hours: 1**

(2 contact hours) This course is designed to provide the laboratory fundamentals of biological science at the cellular level. Students will focus on the scientific method, cellular structure and function, cellular energetics, photosynthesis, cellular respiration, genetics, and heredity. A \$140.00 lab and insurance fee is charged in this course. Co-requisite(s): BIOL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe and apply the scientific method.
- Define and apply the metric system.
- Proficiently use a compound and dissecting microscope and prepare different mounts.
- Analyze, identify, and describe different macromolecules.
- Describe, list, identify cell structure and function.
- Describe the structure of lipid membranes and describe the effects of osmolarity.
- Explain how enzymes work and describe the effects of pH, temperature, and rates of chemical reactions on enzymatically controlled reactions.
- Compare aerobic and anaerobic pathways in cellular respiration.
- Identify and illustrate stages of mitosis and meiosis.
- Solve monohybrid and dihybrid crosses and apply the principles of genetics and heredity to scientific problems.
- Isolate and identify nucleic acids.
- Explain natural selection and describe the sequence of evolution



BIOL111 Organisms and Populations**Credit Hours: 3**

This second semester course provides a foundation in the study of biological systems at the organismal level. Students are introduced to structure and physiology of living organisms, evolution and general ecological principles. Co-requisite(s): BIOL111L or BIOL111V
Prerequisite(s): BIOL110 and BIOL110L or BIOL110V

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Compare and contrast the diversity of micro- and macroorganisms including the general form, function and structure of each.
- Identify how animal structure and function are related.
- Explain the origins and diversity of life in terms of natural selection and evolution.
- Explain the relationship between plant structure and function.
- Explain the interactions of organisms within their environment using ecological principles.



BIOL111L Organisms and Populations Lab**Credit Hours: 1**

(2 contact hours) This course is designed to provide the fundamental of biological science at the organismal level in a virtual lab setting. Students will focus on the scientific method, evolution, biodiversity, plant and animal physiology, and ecology. A \$140.00 lab and insurance fee is charged in this course. Co-requisite(s): BIOL111 Prerequisite(s): BIOL110 and BIOL110L

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply the scientific method by designing and conducting a novel scientific experiment using standard biological equipment.
- Compare and contrast the diversity of micro- and macroorganisms including the general form, function, and structure of each.
- Identify how animal structure and function are related.
- Explain the origins and diversity of life in terms of natural selection and evolution.
- Explain the relationship between plant structure and function.
- Explain the interactions of organisms within their environment using ecological principles.



BIOL120 Essentials Anatomy/Physiology**Credit Hours: 4**

This course provides the student with the essential principles of anatomy and physiology including introductory chemistry concepts, cell and tissues studies and the structure and function of the following organ systems: integumentary, musculoskeletal, nervous, sensory, endocrine, respiratory, digestive, cardiovascular, lymphatic, immune, urinary and reproductive systems. Students will study the human body using a system-by-system approach. There is an online \$85.00 software fee included in this course.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Summarize the interrelationships among bodily systems
- Organize the anatomical components of each body system into a single functional entity
- Apply terminology of healthcare diagnostic techniques and interventions to the structures and functions of the human body
- Comprehend the concept of homeostasis and predict the outcome of deviations from the homeostatic state
- Identify and describe the structure and function of the cell and its components.
- Differentiate among the various types of tissues with respect to location, structure and function.
- Describe the structures of the integumentary system and its importance to health.
- Assess biomechanical systems and actions with respect to the bones, joints and muscles operating in those systems.
- Discuss how hormones function, their specific effects and predict the outcomes of deviation from homeostasis.
- Identify major structures of the special senses, their functions and appropriate regions of the brain where senses are identified.
- Describe the function and composition of blood.
- Outline blood flow through the cardiovascular system.
- Explain the structures and functions of the lymphatic system and how they relate to immunity.
- Describe the major processes that occur during digestive system activity throughout the digestive system structures.
- Explain the process of urine formation and how its composition relates to health.
- Identify the major organs of the male and female reproductive systems and the importance of each structure.

- Apply knowledge-based research techniques (such as library, MEDLINE, web-based) and common software applications (such as word processing, spreadsheet, database, graphics) to facilitate learning outcomes.
- Write and orally present a paper on a selected topic in anatomy and physiology.

**BIOL131 Introduction to Human Disease****Credit Hours: 3**

This course introduces concepts of pathophysiology in a systemic manner by comparing the functioning of the human body in normal and diseased states. Students will integrate information relating to the etiology, presentation, evaluation, treatment, and prevention of common human diseases. Co-requisite(s): BIOL116 if required in degree choice Prerequisite(s): BIOL115 or BIOL120

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate clinically apparent disease processes in terms of common cellular mechanism of adaptation, injury, and aging.
- Evaluate pertinent data given in clinical case scenarios to determine the likely underlying disease processes of, and appropriate interventions for, the case subjects.
- Evaluate the utility of specific diagnostic tests and healthcare interventions in the preventions and treatment of common human disorders.
- Assess the risk of common diseases occurring as a result of genetic inheritance, gender, lifestyle choices, developmental processes, and aging.
- Compare normal functioning of bodily systems to the physiologic changes that occur as a result of disease at multiple corporal levels.
- Describe the interrelationships among bodily systems in both progressive disease and healing states.
- Discuss current topics in disease research, medical science, health and/or physiology.



BIOL211 Microbiology**Credit Hours: 3**

This course presents a comprehensive overview of the role of microbes in disease processes, and is designed for the student in health sciences. Students compare human microbial pathogens with respect to their structure, function, host selection, reservoirs, modes of transmission, host effects, and vulnerability to various treatment regimens. Co-requisite(s): BIOL211L Prerequisite(s): BIOL110 and BIOL110L

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Compare and contrast prokaryotic, eukaryotic organisms and acellular infectious agents (viruses).
- Summarize microbial metabolic pathways.
- Discuss microbial regulation of cellular activities.
- Describe inheritance, exchange and acquisition of genetic information in prokaryotes and acellular infectious agents (viruses).
- Analyze consequences of mutation and genetic recombination.
- Explain the dynamics of commensal, opportunistic, and pathological relationships particularly between microbes and humans.
- Evaluate and apply current techniques utilized for microbial identification , examination, and control through the analysis of sample scenarios and case studies.
- Compare and contrast the clinical characteristics for selected pathogenic microbes with regards to pathogenesis, epidemiology, treatment, and control.
- Discuss the importance of food and water safety.



BIOL211L Microbiology Lab**Credit Hours: 1**

(2 contact hours) This laboratory course presents a comprehensive overview of the role of microbes in disease processes, and is designed for the student in health sciences. Students learn skills applicable to the clinical laboratory, including aseptic techniques, microbial culture, and antimicrobial resistance testing. Students also compare human microbial pathogens with respect to their structure, function, reservoirs, modes of transmission, host effects, and vulnerability to various treatment regimens. A \$140.00 lab and insurance fee is charged in this course. Co-requisite(s): BIOL211 Prerequisite(s): BIOL110 and BIOL110L

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate proficiency in the use of laboratory equipment and basic microbiological techniques.
- Demonstrate the isolation and cultivation of selected microbes.
- Characterize an unknown microbe based on morphologic, biochemical and metabolic properties.
- Relate the process of selected staining methods in the differentiation of bacteria.
- Compare and contrast physical and chemical methods for controlling microbial growth.
- Demonstrate and interpret results of bacterial transformation.
- Perform PCR analysis and demonstrate specific research applications of the technology.



CHEM150 Foundations of Chemistry

Credit Hours: 3

This course emphasizes general chemistry principles, including introductory topics in organic chemistry and biochemistry for the health professions student. Co-requisite(s): CHEM150L
Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify common units of measure and perform conversions between metric units
- Explain the organization of the periodic chart
- Describe the three states of matter and classification
- Explain general structure and nomenclature of atoms
- Predict types of bond formations between atoms
- Apply the mole concept in the stoichiometry of reactions and solutions.
- Balance chemical equations and use stoichiometric relationships to calculate product and reactant amounts.
- Compare and contrast types of reactions and predict the outcome of these reactions.
- List properties of acids and bases, the pH scale and buffers
- Explain the behavior of solutions, suspensions, and colloids
- Describe the properties of gases
- Explain nuclear decay, the concept of half-life and the diagnostic and therapeutic uses of ionizing radiation
- Compare types of molecules occurring in inorganic systems with those found in organic systems
- Identify and compare the structure and function of proteins, enzymes, carbohydrates and lipids
- Describe the role of nucleic acids in biochemical protein synthesis
- Write a paper on the application of chemistry in solving problems in the student's field of professional study



CHEM150L Foundations of Chemistry Lab**Credit Hours: 1**

(2 contact hours) This course is an introduction to general chemistry laboratory principles and techniques that accompanies CHEM 150. Emphasis is placed on fundamental chemistry principles, organic chemistry, and biochemistry for the health professions student. A \$140.00 lab and insurance fee is charged in this course. Co-requisite(s): CHEM150 Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify common units of measure and perform conversions between metric units
- Explain the organization of the periodic chart
- Describe the three states of matter and classification
- Explain general structure and nomenclature of atoms
- Predict types of bond formations between atoms
- Apply the mole concept in the stoichiometry of reactions and solutions.
- Balance chemical equations and use stoichiometric relationships to calculate product and reactant amounts.
- Compare and contrast types of reactions and predict the outcome of these reactions.
- List properties of acids and bases, the pH scale and buffers
- Explain the behavior of solutions, suspensions, and colloids
- Describe the properties of gases
- Explain nuclear decay, the concept of half-life and the diagnostic and therapeutic uses of ionizing radiation
- Compare types of molecules occurring in inorganic systems with those found in organic systems
- Identify and compare the structure and function of proteins, enzymes, carbohydrates and lipids
- Describe the role of nucleic acids in biochemical protein synthesis
- Write a paper on the application of chemistry in solving problems in the student's field of professional study

**CHEM160 General Chemistry I****Credit Hours: 3**

First semester of a two semester course. This course introduces the student to the basic theories and concepts in chemistry. Topics that will be covered include: atomic structure, chemical bonding, stoichiometry, gas laws, thermochemistry, quantum theory, states of matter and solutions. Co-requisite(s): CHEM160L or CHEM160V Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Compare and contrast the chemical behavior and physical properties of common substances.
- Solve quantitative problems (stoichiometric) involving chemical formulas and equations
- Solve quantitative problems (stoichiometric) involving chemical formulas, equations, acid- base chemistry, and solution dilution and concentration .
- Distinguish the qualitative and quantitative relationships between matter and energy involved in chemical or physical processes
- Utilize chemical and physical properties to separate matter in to its components
- Relate the process of chemical bonding to the size, shape and nature of ions and molecules
- Apply the scientific method to solve a problem
- Classify the structure and behavior of atoms based on modern atomic theory

**CHEM160L General Chemistry I Lab****Credit Hours: 1**

(2 contact hours) This laboratory course supplements the learning in CHEM160. It is an introduction to fundamental principles and techniques of chemistry. Emphasis is placed on basic chemical theories, stoichiometry, properties of solutions, gas laws, and thermochemistry applications. A \$140.00 lab and insurance fee is charged in this course. Co-requisite(s): CHEM160 Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Construct a formal lab report, including materials methods, discussion, procedures, data, results and conclusions.
- Formulate and test hypotheses.
- Record, graph, chart and interpret data obtained from experimentation
- Demonstrate safe and proper use of standard chemistry glassware and equipment while performing laboratory experiment
- Perform fundamental aspects of statistical analysis including the calculation of averages, standard deviations and assess statistical validity of data points.
- Use the basic instrumentation employed in a general chemistry lab including a pH meter, spectrophotometer, and analytical balance
- Apply the fundamental aspects of stoichiometry in the execution of experiments.
- Identify an unknown compound applying experimental techniques acquired in the course



CHIN111 Beginning Chinese I**Credit Hours: 3**

This first semester Chinese course is an introduction to listening, speaking, reading and writing skills, and Chinese-speaking cultures. The course recognizes the practical importance of language with special emphasis on speaking skills. It assumes no previous knowledge of the language. Students learn basic vocabulary and language structure, and begin exploring diverse segments of Chinese-speaking cultures. Note: A grade of C or better is required to take the next course in the sequence.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate Chinese language elements necessary to communicate effectively at a beginning level
- Interpret at a beginning level both written and oral Chinese language messages
- Construct written and spoken Chinese sentences, paragraphs, and workplace messages using appropriate nouns, articles, verbs and adjectives.
- Compare the society and culture of diverse segments of Chinese-speaking peoples



CHIN121 Beginning Chinese II**Credit Hours: 3**

This second semester Chinese course is a continuation of language skills and cultural understanding in CHIN111. The course recognizes the practical importance of language with special emphasis on speaking skills. Students expand their vocabulary, language structure, and continue examining diverse Chinese-speaking cultures. Prerequisite(s): Completion of CHIN111 with a C or above

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate a beginning level of competence in Chinese structure and usage.
- Comprehend spoken and written Chinese at a beginning level.
- Construct written and spoken Chinese language messages at a beginning level using appropriate grammatical units.
- Demonstrate knowledge of the society and culture of diverse segments of Chinese-speaking peoples.



CHIN211 Intermediate Chinese I**Credit Hours: 3**

The third semester Chinese course is a continuation of language, skills and cultural understanding at an intermediate level. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and deepen their understanding of diverse Chinese-speaking cultures.

Note: A grade of C or better is required to take the next course in the sequence. Prerequisite(s): CHIN121

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate an intermediate level of competence in Chinese structure and usage.
- Construct written and spoken Chinese sentences, paragraphs, essays and workplace messages using appropriate grammatical units.
- Comprehend spoken and written Chinese at an intermediate level.
- Demonstrate appreciation and understand the society and culture of diverse segments of Chinese-speaking peoples.



CHIN221 Intermediate Chinese II**Credit Hours: 3**

The fourth semester Chinese course is a continuation of language skills and cultural understanding from CHIN211. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and build a well-rounded view of diverse Chinese-speaking cultures. Prerequisite(s): Completion of CHIN211 with a C or above

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate Chinese language elements necessary to communicate effectively at an intermediate level.
- Interpret at an intermediate level both written and oral Chinese language messages.
- Construct written and spoken Chinese sentences, paragraphs, essays, and workplace messages using appropriate grammatical units.
- Demonstrate an intermediate level of competence in Chinese structure and usage.
- Comprehend spoken and written Chinese at an intermediate level.
- Demonstrate a deeper understanding of the society and culture of diverse segments of Chinese-speaking peoples and be able to compare them.



CHIN311 Chinese for the Professions**Credit Hours: 3**

A course designed for students pursuing the language specialty. This course follows a language needs approach which consists of developing content based on the needs and interests of students and their prospective majors. Students will relate information studied in other subjects to their learning of foreign language. Concentration will be on preparing students with specific language and usage in relevant cultural contexts in their intended careers. Instruction will utilize target language. Prerequisite(s): CHIN221

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Understand spoken Chinese in a variety of authentic contexts.
- Utilize oral communication skills within a context of common business/technical and medical situations.
- Practice “need-to-know” language using key vocabulary essential to real situations in the business/technical and medical field.
- Promote cultural awareness of the Chinese community in order to better communicate with and relate better to patients, clients, and fellow workers.
- Appreciate the usefulness and vitality of Chinese in today’s world.



COMM120 Presentation Techniques**Credit Hours: 3**

This course introduces and applies the theories and principles of effective communication. Students learn to organize and present clear, logical messages to specific audiences. They develop confidence in public speaking and increase their ability to inform and persuade listeners. They also implement critical thinking and listening skills. Finally, students exhibit the skills and tools necessary to construct, organize, and deliver effective speeches. Note: Online sections will have a \$70.00 book fee included with charges.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify the importance of the fundamentals of communication theory, including listening and self-awareness.
- Identify and evaluate public speaking skills.
- Identify practices used to document sources and avoid plagiarism using the most current version of the American Psychological Association (APA) Style.
- Adapt presentation techniques appropriate to the purpose, situation, and audience.
- Employ appropriate communication elements necessary to deliver effective oral messages and presentations (including persuasive, informative and ceremonial speeches).
- Utilize presentation aids (include technology) to complete professional presentations.
- Using research, create a plan to convey effective messages and presentations.



COMM311 Organizational Communication**Credit Hours: 3**

This course is designed to develop the skills and attitudes necessary for effective communication in business and professional settings. Successful students will be able to evaluate the cultural dynamics of an organization as well as to develop effective strategies of leadership and to enhance internal and external communication, problem-solving and collaborative decision-making abilities.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate communication strategies within and between culturally diverse organizations.
- Analyze strategies to manage obstacles in organizational communication.
- Identify effective communication behaviors within organizational settings.
- Use American Psychological Association (APA) style to document sources, give attribution, and avoid plagiarism



DATA275 Introduction to Data Analytics**Credit Hours: 3**

The basics of data analytics are introduced including descriptive, predictive and prescriptive statistics, regression analysis, and data visualization. The instructional approach is an application-based introduction to data analytics practices such as data cleaning, data organization for analysis, and exploratory data analysis. A key component of instruction is an emphasis on hands-on practice with data analysis projects and presentation of results to multiple audiences. Techniques examined emphasize applicability in multiple organizational sectors including business, healthcare, and technology. There is a \$100.00 SPSS software fee included in this course. Prerequisite(s): STAT220

Learning Outcomes:

Upon successful completion of this course, the student will be able to:



ECON200 Microeconomics**Credit Hours: 3**

This course introduces students to economics. Students learn the basics of supply and demand; the market economy; elasticity; the foundation of consumer demand; the theory of the business firm and costs of production; the market structures of perfect competition, monopoly, oligopoly, and monopolistic competition; theories of labor unions and wages; antitrust policy; and the microeconomic view of international business. Prerequisite(s): ENGL109 and MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Assess how the theory of comparative advantage contributes to increased specialization, production and consumption.
- Explain how the economic forces of supply and demand work in a market system.
- Summarize the factors that affect consumer decisions.
- Differentiate among the four market structures.
- Determine how wages, labor unions, externalities, and taxation affect the economy.
- Explain the costs associated with production in the short run and in the long run.
- Explain the main sources of market failure and the possible remedies to each.

**ECON201 Macroeconomics****Credit Hours: 3**

This course introduces students to economics, the schools of economic thought, and international economics. Students learn the methodology, concepts, and terminology of macroeconomics, including principles, theories, and tools. They also study banking, money, the Federal Reserve System, and monetary theory. In addition, macroeconomic problems such as inflation, unemployment, economic growth, and globalization are discussed. Note: Online sections will have a \$90.00 fee included with tuition charges. Prerequisite(s): ENGL109 and MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Assess how the theory of comparative advantage contributes to increased specialization, production and consumption.
- Explain how the economic forces of supply and demand work in a market system.
- Explain what is being measured by GDP, unemployment rate and the CPI as well as the shortcomings in each measure.
- Be able to differentiate between long-run and short-run macroeconomic models and identify the arguments for and against government intervention.
- Explain the goals of fiscal policy and the impact of fiscal policy on the Federal budget.
- Differentiate between real and nominal measures in GDP, wages, and interest rates.
- Assess the effects of money, banking, the Federal Reserve System and monetary policy on the economy
- Explain the effect of major macroeconomic problems on the economy.



ENGL220 Literary Worlds**Credit Hours: 3**

This course introduces students to a variety of literary works, including poetry, drama, short fiction and the novel. Students learn to analyze the thematic and stylistic elements of literary works. They also learn to interpret literary works by developing a single point and supporting it with specific examples from the text. Students learn to identify historical, social, and intellectual trends that affect literary works. In addition, they will recognize how literature can enrich our lives by reflecting upon common personal and professional situations. Prerequisite(s): ENGL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify the common literary terms.
- Differentiate the characteristics of the literary genres: poetry, drama, short fiction, and the novel.
- Analyze literary works to distinguish differences in style and/or theme.
- Examine the effects of literature on an individual or group.
- Compose coherent essays while analyzing and/or synthesizing various texts in a given time period or theme.
- Implement practices used to document sources and avoid plagiarism.



ENVS125 Intro to Environmental Studies**Credit Hours: 3**

This course focuses on issues pertaining to environmental awareness and sustainability. Students will gain an understanding of the various components of the Earth System and the complex relationship between humanity and the global environment. Students will analyze and discuss current environmental issues, as well as currently proposed solutions, and debate their likely impact upon present and future generations. Relevant concepts from natural and social sciences will be utilized to critically and creatively evaluate specific issues of environmental awareness and sustainability as they relate to business, health, and technology.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Write and orally present results of independent and group projects.
- Define major environmental problems occurring today and identify potential solutions to those problems.
- Predict changes in the geosphere, atmosphere, hydrosphere, biosphere, and exosphere resulting from specific alterations in one or more of these subsystems.
- Summarize the challenges to society resulting from population pressure, and propose solutions to address these challenges.
- Apply basic scientific concepts and principles to relevant situations.
- Apply basic observational methods and logical reasoning to propose hypotheses and devise methods to test those hypotheses.
- Analyze data to determine potential regions of pollution in air, soil, and/or water.
- Examine common energy sources with respect to factors such as safety, potential for pollution, and cost/yield ratio.
- Weigh and critique the evidence for and against global and localized climate change.
- Compare the costs and benefits to society of limitations in biodiversity.



GEOL120 Astronomy

Credit Hours: 3

The general concepts of modern astronomy and cosmology are introduced in this class. Students will learn about the general structure of the Solar System including the distribution and physical characteristics of the Sun, satellites, planets, dwarf planets, and small solar system objects. The similarities and differences between the Earth and other astronomical bodies will be discussed. Theories will be debated concerning the origin and fate of the Universe, the Solar System and its place within the Universe, and the probability of life beyond Earth. Telescopes will be utilized to view objects within our Solar System. A \$65.00 off-site trip and insurance fee is charged in this course.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Write and orally present results of independent and group projects.
- Describe the basic physical attributes of the Sun, planets, dwarf planets, satellites, and small solar system objects within our Solar System.
- Name and recognize all of the planets and dwarf planets within the Solar System as well as a select group of satellites and small solar system objects.
- Locate and identify a variety of objects in the night sky through the naked eye, binoculars and/or telescopes.
- Describe and summarize the different regions of the Solar System.
- Apply basic scientific concepts and principles to relevant situations.
- Apply basic observational methods and logical reasoning to propose hypotheses and devise methods to test those hypotheses.
- Calculate distances to celestial objects within the Solar System, the Milky Way Galaxy, and the Universe.
- Examine the orbital path of objects and utilize these paths to anticipate the location of planetary bodies relative to each other within the Solar System.
- Consider the potential for life beyond the boundaries of Earth and hypothesize as to potential locations for life within our Solar System.



GEOL140 Physical Geology

Credit Hours: 3

Students are introduced to the scientific field of geology. Students also apply the scientific study of geology in a lab setting. The basic principles of biology, chemistry, mathematics and physics are integrated into a concise and straight forward application to the study of the Earth and earth processes. Topics will include an overview of rock and mineral identification and formation, weathering and erosion, earthquakes, volcanism, erosion and depositional environments, surface water and groundwater studies, and plate tectonics. A \$65.00 off-site trip and insurance fee is charged in this course.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Write and orally present results of independent and group projects.
- Describe how geologic processes shape the surface of Earth, including river, desert, coastal, mountainous, and glacial features.
- Describe how geologic processes shape the subsurface of the Earth distinguishing between subcontinental, submarine, and sublithospheric regions.
- Predict the likelihood of natural disasters occurring in various regions based on plate tectonics and the geologic history of the area.
- Explain depositional and erosion landforms and their impact on surrounding ecosystems based on knowledge of groundwater and surface water properties.
- Apply basic scientific concepts and principles.
- Apply basic observational methods and logical reasoning to propose hypotheses and devise methods to test those hypotheses.
- Prepare geologic maps, cross sections, and/or sketches to depict and help interpret the current geologic setting and/or geologic history of an area.
- Classify common minerals and rocks based on their individual physical properties, including the three rock types and the geologic processes associated with their formation.
- Recommend solutions to current problems faced by individuals, corporations, and/or governments based on geologic knowledge learned.



GRMN111 Beginning German I**Credit Hours: 3**

This first semester German course is an introduction to listening, speaking, reading and writing skills, and German-speaking cultures. The course recognizes the practical importance of language with special emphasis on speaking skills. It assumes no previous knowledge of the language. Students learn basic vocabulary and language structure, and begin exploring diverse segments of German-speaking cultures. Note: A grade of C or better is required to take the next course in the sequence.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate German language elements necessary to communicate effectively at a beginning level
- Interpret at a beginning level both written and oral German language messages
- Construct written and spoken German sentences, paragraphs, and workplace messages using appropriate nouns, articles, verbs and adjectives.
- Compare the society and culture of diverse segments of German-speaking peoples



GRMN121 Beginning German II**Credit Hours: 3**

This second semester German course is a continuation of language skills and cultural understanding in GRMN111. The course recognizes the practical importance of language with special emphasis on speaking skills. Students expand their vocabulary, language structure, and continue examining diverse German-speaking cultures. Prerequisite(s): Completion of GRMN111 with a C or above

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate a beginning level of competence in German structure and usage.
- Comprehend spoken and written German at a beginning level.
- Construct written and spoken German language messages at a beginning level using appropriate grammatical units.
- Demonstrate knowledge of the society and culture of diverse segments of German-speaking peoples.



GRMN211 Intermediate German I**Credit Hours: 3**

The third semester German course is a continuation of language, skills and cultural understanding at an intermediate level. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and deepen their understanding of diverse German-speaking cultures.

Note: A grade of C or better is required to take the next course in the sequence. Prerequisite(s): GRMN121

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate an intermediate level of competence in German structure and usage.
- Construct written and spoken German sentences, paragraphs, essays and workplace messages using appropriate grammatical units.
- Comprehend spoken and written German at an intermediate level.
- Demonstrate appreciation and understand the society and culture of diverse segments of German-speaking peoples.



GRMN221 Intermediate German II

Credit Hours: 3

The fourth semester German course is a continuation of language skills and cultural understanding from GRMN211. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and build a well-rounded view of diverse German-speaking cultures. Prerequisite(s): Completion of GRMN211 with a C or above

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate German language elements necessary to communicate effectively at an intermediate level.
- Interpret at an intermediate level both written and oral German language messages.
- Construct written and spoken German sentences, paragraphs, essays, and workplace messages using appropriate grammatical units.
- Demonstrate an intermediate level of competence in German structure and usage.
- Comprehend spoken and written German at an intermediate level.
- Demonstrate a deeper understanding of the society and culture of diverse segments of German-speaking peoples and be able to compare them.



HIST111 Early World History**Credit Hours: 3**

This course examines the history of world civilizations, from the beginnings of history in the Ancient Near East through the Renaissance, with a special emphasis on the ways that the events of the past shape the present and future. Students will learn about the historical causes and effects that accompany the rise and fall of world civilizations. Students will also learn about individuals who changed history. In addition, students will analyze the achievements of world civilizations, both Western and non-Western. The impact of ideologies and environmental crises will be put into perspective.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret major events and movements throughout the world from the beginnings of history in the Ancient Near East through the Renaissance.
- Analyze the chronology of significant events in human history.
- Compare the major components of multiple societies and understand the roots of his or her own society within that historical context.
- Discuss the historical construction of social, political, religious, economic, intellectual, technological, and artistic differences and similarities between groups and regions over time.
- Demonstrate an ability to identify and interpret a wide variety of primary sources including but not limited to personal and public documents, visual and oral representations, popular and material culture.
- Demonstrate an ability to analyze the historical method and construct a historical argument.



HIST112 Modern World History

Credit Hours: 3

This course examines the history of the modern world, from the Renaissance through the present, with a special emphasis on the ways that the events of the past shape the present and future. Students will analyze the achievement of modern and post-modern world civilizations within the context of exploration, colonialism, independence movements, the new world order, and the increasing destructiveness of warfare. Population increase, ethnic solidarity, religious divisiveness, technological advances, and the rise and fall of ideologies are examined.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret major events and movements in the modern world from the Renaissance through the present.
- Analyze the chronology of significant events in human history.
- Compare the major components of multiple societies and understand his or her own society within that historical context.
- Discuss the historical construction of social, political, religious, economic, intellectual, technological, and artistic differences and similarities between groups and regions over time.
- Demonstrate an ability to identify and interpret a wide variety of primary sources including but not limited to personal and public documents, visual and oral representations, popular and material culture.
- Demonstrate an ability to analyze the historical method and construct a historical argument.



HIST211 Early United States History**Credit Hours: 3**

This course teaches a survey of the history of the United States from pre-history through the Reconstruction period. Students will learn the foundations of democracy, including the development of the Constitution, and how the principles of the Declaration of Independence were tested by the Civil War. Students will learn how the Reconstruction period set the stage for civil rights abuses that persisted long after it.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret major events and movements on the North American Continent from before European contact through Reconstruction.
- Discuss the historical construction of social, political, religious, economic, intellectual, technological, and artistic differences and similarities between groups and regions over time.
- Analyze the chronology of significant events in U.S. history from the thirteenth century through 1865 with special consideration of a global context.
- Demonstrate an ability to identify and interpret a wide variety of primary sources including but not limited to personal and public documents, visual and oral representations, popular and material culture.
- Demonstrate an ability to analyze the historical method and construct a historical argument.



HIST212 Modern United States History**Credit Hours: 3**

This course teaches essential concepts of U.S. history from the end of Reconstruction through the growth of modern America. Students learn how the United States came to prominence as a world power through the events of the two world wars. Students will also learn the genesis of world events leading to September 11, 2001, and will evaluate future directions in the light of the past.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret the major events and movements in the United States from 1865 through the present.
- Discuss the historical construction of social, political, religious, economic, intellectual, technological, and artistic differences and similarities between groups and regions over time.
- Analyze the chronology of significant events in U.S. history from 1865 through the present with special consideration of a global context.
- Demonstrate an ability to identify and interpret a wide variety of primary sources including but not limited to personal and public documents, visual and oral representations, popular and material culture.
- Demonstrate an ability to analyze the historical method and construct a historical argument.



HUMN101 Arts and Culture**Credit Hours: 3**

This course will use an interdisciplinary approach to explore the fine arts, philosophy, and historical perspectives within and among various Western and non-Western cultural traditions. Students will develop an understanding of the ways in which our thoughts, perceptions, and expressions are constructed. Students will also experience the humanities by investigating art, philosophy and cultural traditions beyond the classroom setting.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Learning Outcomes:
- Evaluate major artistic, cultural, and historic themes, trends and movements
- Construct patterns of meaning across disciplines through reading, writing, talking, listening, and thinking
- Synthesize single events and items of information as they fit into our total history and shape our traditions
- Apply course knowledge of humanities to non-classroom contexts
- Examine historical periods for the social and political influences on the fine arts and philosophy
- Define and use appropriate terminology when describing themes, trends, and movements



MATH135 College Algebra**Credit Hours: 3**

This course is intended to further develop students' algebraic skills as well as prepare them for success in MATH210 (Business Calculus). The course focuses heavily on the necessary knowledge of mathematical concepts needed to solve a diverse and complex array of scenarios. These include polynomial, rational, exponential, and logarithmic functions and their properties. In addition, students will solve logarithmic and exponential equations, learn the symmetry of graphs, and sequences and series of numbers. Applications to the business, health, and/or technology professions will be emphasized throughout the course. Note: Both inseat and online sections will have an \$85.00 book fee and MyMathLab included with tuition charges.

Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Perform function operations.
- Solve logarithmic and exponential equations with particular focus on applications to the business, health, and/or technology professions.
- Graph polynomial, rational, exponential, and logarithmic functions.
- Solve exercises involving sequences and series.
- Determine the domains of polynomial, rational, logarithmic, and exponential functions.
- Apply properties of logarithms and exponents to simplify logarithmic and exponential expressions.
- Simplify, add, subtract, multiply, and divide rational expressions.
- Factor quadratic trinomials and 'difference of squares' binomials.
- Apply computerized spreadsheet techniques and technology as appropriate to the course content.



MATH140 Finite Mathematics**Credit Hours: 3**

This course introduces students to the fundamentals of non-calculus-based mathematics. Applications to Managerial Science and Computer Science serve as motivation for course material. Topics include the mathematics of finance (compound interest and annuities), optimization, and decision-making. The use of spreadsheets (Microsoft Excel) to handle more complex calculations will be introduced where appropriate. This course is strongly recommended for students in the Computer Science BS program. Note: Online sections will have a \$80.00 book fee included with tuition charges. Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Solve a linear programming problem for the optimal solution.
- Model and solve problems involving compound interest, present value, future value, and the amortization of a loan
- Determine optimal strategies using game theory techniques.
- Analyze trends and predict future successes using Markov chains.
- Perform simulations using probability models.
- Apply computerized spreadsheet techniques and technology as appropriate to the course content.
- Solve systems of equations using matrices.



MATH150 Pre-Calculus

Credit Hours: 4

This course is designed to prepare students for the traditional calculus sequence. Topics include: brief review of algebra, solving equations and inequalities, systems of linear and nonlinear equations, the properties and graphs of relations and functions (including polynomial, radical, rational, logarithmic, exponential, and trigonometric), zeros of polynomial functions, trigonometry, conic sections, polar coordinates. Online sections of this course will have an \$85.00 ebook/MyMathLab fee included with the course. Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Manipulate numbers and variables algebraically including the solving of equations.
- Given a function (linear, quadratic, polynomial, rational, logarithmic, exponential, or trigonometric), generate its graph including domain, range, intercepts, symmetries, asymptotes, and increasing/decreasing.
- Combine, translate, and manipulate (add, multiply, divide, compose, transformations, and find inverses) functions and generate the resulting graph.
- Demonstrate knowledge of logarithmic and exponential properties by simplifying expressions and solving equations.
- Use functions to build mathematical models in order to understand and predict physical phenomena.
- Demonstrate full understanding of trigonometric functions including definitions, trig values of standard angles, radian and degree measure, identities, graphs, inverses, and applications.
- Given a graph of a conic section (line, circle, ellipse, parabola, hyperbola), be able to determine its equation, and vice versa.
- Solve systems of two equations with two unknowns.
- Convert between polar and Cartesian coordinates and graph simple equations in polar coordinates.
- Demonstrate an elementary understanding of complex numbers including graphing, adding, and multiplying.
- Be acquainted with the central ideas of calculus (finding slopes of non-linear graphs and areas of regions under graphs via the process of taking limits).



MATH205 Applied Linear Algebra**Credit Hours: 3**

This course introduces the fundamentals of linear algebra (i.e., the notation and algebra of vector spaces and matrices). Because these items have the ability to handle masses of data as a single unit with relative ease, they are of particular interest to those in computer science. Those applications to programming (e.g., 3-D game design, simulation, and biometric security) will serve as context throughout the course. Topics include matrix operations, linear transformations, vector spaces, and 3D geometry. Note: Online sections will have an \$85.00 ebook/MyMathLab fee included with the course. Prerequisite(s): MATH140 and MATH135 or MATH150

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Perform the following matrix operations: addition, subtraction, scalar multiplication and multiplication.
- Find the inverse, transpose, and determinant of a matrix and perform LU-Factorization.
- Solve a system of equations using augmented matrices, row operations, and Gaussian Elimination. Use linear systems to model and analyze applied situations.
- Perform Linear Transformations (translations, reflections, projections, rotations, dilations, and contractions) using matrices.
- Solve problems using applications of matrices such as coding, graph theory, and computer graphics.
- Perform the following vector operations: sum, difference, dot product, scalar multiplication, cross products, and normalizing.
- Solve problems dealing with 3-D geometry such as finding bounding boxes or bounding spheres, and finding intersections of geometric shapes in 3-D.
- Compute eigenvalues and eigenvectors of a matrix.
- Utilize technology as appropriate to perform matrix operations.



PHYS100 Applied Physics**Credit Hours: 2**

This course introduces the basic physical principles relating to particle motion, transfer of energy, energy fields and waves, rotational motion, thermodynamics, electromagnetism, material properties, and relativity. Students will apply these principles to physical systems in the virtual or physical laboratory setting. For online sections only, there is an \$85.00 fee which covers software and eBooks. Co-requisite(s): PHYS100L Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate real world problems and identify potential solution methodologies to these problems using the scientific method.
- Apply physics concepts and equations to quantitatively solve real world problems.
- Analyze the contributions of physics to developments in the student's chosen degree program or profession.
- Formulate basic technical documentation by applying laboratory writing skills
- Explain the mechanics of Newton's laws, momentum, energy, and rotational motion.
- Explain the basic physical properties of matter, heat, wave motion, electromagnetism, and light.



PHYS100L Applied Physics Lab**Credit Hours: 1**

(2 contact hours) This course introduces the basic physical principles relating to particle motion, transfer of energy, energy fields and waves, rotational motion, thermodynamics, electromagnetism, material properties, and relativity. Students will apply these principles to physical systems in the virtual or physical laboratory setting. A \$30.00 insurance fee is charged in this course. There is a \$140.00 lab supplies and insurance fee for this In-seat course. Co-requisite(s): PHYS100 Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply the scientific method to evaluate real world problems and identify potential solution methodologies to these problems.
- Apply physics concepts and equations to quantitatively solve real world problems.
- Analyze the contributions of physics to developments in the student's chosen degree program or profession.
- Apply laboratory writing skills to formulate basic technical documentation.
- Apply the mechanics of Newton's laws, momentum, energy, and rotational motion.
- Apply the basic physical properties of matter, heat, wave motion, electromagnetism, and light.



POLS111 American Government**Credit Hours: 3**

This course introduces students to American politics, the political process, and the evolution of American government at the national, state, and local levels. Students will explore national and state constitutions, civil rights, citizenship, suffrage, public opinion, political parties, and the electoral system. Students also evaluate the relationship between the individual and the government in the United States. Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze the U.S. Constitution and its amendments
- Evaluate the various concepts of American federalism
- Evaluate the influence of interest groups on U.S. public policy
- Analyze American democracy and its political culture
- Analyze the concepts of civil liberty and civil rights
- Analyze U.S. domestic and foreign policy
- Understand current political issues facing the U.S. government
- Understand the U.S. electoral process, including the role of political parties



POLS230 Comparative Politics**Credit Hours: 3**

This course introduces students to comparative study of the domestic politics of nations throughout the world. Students explore the development of the modern state, the structures of political institutions in diverse nations, and the nature of political power. Students also examine the concepts of nationalism, nation-building, political change, and the political culture of various nations. Other topics for study include the nature of democracy, planned economies and market economies, the politics of the developing world, and international relations. Specific countries and their governments will be compared to provide students the means to evaluate different types of political systems. Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Understand the major topics and themes of comparative politics.
- Analyze the concept of the state and its institutions and explain the origins of the modern nation state.
- Evaluate the electoral systems of democratic states, and analyze the role of political parties.
- Analyze the various types of states including liberal democracies, new democracies, communist and post-communist states, and less-developed states
- Understand the public policymaking processes of various states.
- Analyze the U.S. political system and compare and contrast this with other political systems.
- Evaluate the political systems of various nations in both the developed and developing world.



PSYC101 Introductory Psychology

Credit Hours: 3

This course provides an overview of psychological principles. Students learn basic theories and concepts to understand the dynamics of human behavior in a variety of settings.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify and discuss early and contemporary theories of psychology
- Articulate an understanding of the major principles of sensation and perception
- Demonstrate an understanding of the relationship between psychological factors and physical health
- Evaluate and apply the theories of development across the lifespan
- Articulate the basic principles and major theories concerning learning, memory and cognition
- Discuss the symptomatology, etiology and treatment of psychological disorders
- Identify and discuss the major theories related to social psychology
- Demonstrate an understanding of the states of consciousness such as sleep, attention, dreaming and drug use
- Discuss and apply the major theories of motivation and emotion
- Identify and discuss the biological bases of behavior
- Identify the steps of the scientific method and explain how this method applies to psychology
- Demonstrate the ability to think critically and analytically in relation to psychological findings
- Demonstrate an understanding of the relationship between cultural/social factors on individual behavior



PSYC113 Stress Management for Life**Credit Hours: 3**

This course explores various techniques used to manage stress and promote personal health throughout life. Students will develop career skills useful for assisting health care clients in reducing stress. Various techniques that can be used in life to promote a sense of inner control and balance will also be provided.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Explore the role of stress in the development or exacerbation of many diseases and states of psychological or behavioral dysfunction, and support these arguments with scientific evidence.
- Compare the mechanisms by which specific stress management techniques improve physical and psychological functioning.
- Evaluate the role of exercise and lifestyle alterations as means of reducing stress.
- Create a personal plan for managing stress, following an appraisal of life patterns at school, in the workplace, in the family, and in society.
- Critique themselves and their peers in the delivery of quality instruction of a variety of stress management techniques.



PSYC127 Healthy Living**Credit Hours: 3**

This course explores the most recent, scientifically-based personal health information relevant to the entire lifespan. Students critically review health information from various sources and gain skill in analyzing their own health-related behaviors and attitudes. In the process, students learn strategies, techniques, and behaviors to optimize their own well-being and the well-being of their families.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Appraise health information from a wide variety of sources for scientific accuracy and usefulness in addressing health concerns.
- Evaluate a variety of case scenarios and health profiles from persons of diverse ages and cultures.
- Construct a personal health diary.
- Analyze personal health practices and beliefs, with respect to nutrition, exercise, drugs, sexuality and reproduction, use of professional health care services, stress management, interpersonal relationships, and exposure to environmental pathogens.
- Develop plans for minimizing health risk factors.
- Evaluate interventions to address identified health concerns.



PSYC201 Abnormal Psychology**Credit Hours: 3**

This course will provide an overview of abnormal behavior and psychological disorders. Research methods used in the field of abnormal behavior will be identified and relevant research findings will be compared. A variety of perspectives including biological, environmental, psychological and socio-cultural influences on the development of mental health disorders will be examined. The definition, classification and treatment of a variety of psychological disorders will also be explored. Legal considerations surrounding mental disorders and the mental health field will be addressed. Prerequisite(s): PSYC101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate an understanding of abnormal behavior from a historical perspective.
- Demonstrate an understanding of the differences between "abnormal" and "normal" behavior.
- Recognize and evaluate cultural and social issues as related to abnormal behavior.
- Demonstrate an understanding of current classification systems in use for the identification of psychological disorders.
- Apply biological, psychological, and socio-emotional theories as well as the integration of these perspectives to the causality of psychological disorders.
- Understand the process of assessing psychological disorders.
- Compare and contrast approaches that are used to treat psychological disorders.
- Identify and evaluate mental health issues as they relate to the law.
- Examine and critically review the research on psychological disorders.

**SOCY101 Introductory Sociology****Credit Hours: 3**

This course provides an overview of sociological theory. Students learn sociological models of society; basic units of social life and social institutions; and fundamental social processes derived from sociological theory and perspectives. Students also evaluate the role of the individual in society.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate the causes and effects of change on society
- Compare the theories of sociology
- Analyze the structure and interaction of parts of society
- Analyze various roles of individuals and groups in society
- Apply scientific methods and interpretation of data
- Recognize the variety of groups in society



SOSC201 Diversity in Society**Credit Hours: 3**

This course introduces students to the complex issues surrounding diversity in U.S. society and to the need for understanding difference in an increasingly globalized world. Students will explore the social-historical context of multiple experiences on individual, cultural and institutional levels. They will analyze the complex interactions regarding diversity in organizations. Students will also evaluate their own thoughts, attitudes, and behaviors in order to understand their roles in a diverse society. Note: Course sections which are designated (EL) in the title will have an \$85.00 field trip fee included with tuition.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Understand the social-historical backgrounds of subordinate groups in U.S. society.
- Analyze the social and cultural systems that develop out of adaptation to environmental and historical circumstances.
- Evaluate one's own culture, identity, biases, prejudices, and stereotypes toward diverse groups.
- Synthesize the theoretical arguments of the benefits of inclusion and the consequences of ignoring diversity in the workplace and society.
- Apply management practices to maximize the abilities of all employees from subordinate and dominant groups to meet organizational goals.
- Apply an understanding of the legal implications of discriminatory behavior.
- Analyze the value of cultural competence in the workforce and in local and global communities.



SOSC241 World Regional Geography**Credit Hours: 3**

This course teaches concepts and principles of world geography with particular emphasis on regions and places. Students learn the necessary geographic foundations to build an informed view of global current events. Students also learn to identify places and regions and understand the relationship of physical systems, human systems, and spatial patterns. Politics, economics, development, and war are explored in the global context, with specific examples. Students will study both the physical and cultural characteristics of the world as they develop insights into the relationship between environment and culture. Students learn to use maps that display and analyze data from the principle regions of the world.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate the essential themes of world regional geography.
- Analyze regional problems and world events critically from a geographical perspective.
- Analyze the consequences of cultural phenomena, including agriculture, urbanization, colonization, economic development, political boundaries, and ethnic diversity, in regions of the world.
- Illustrate the importance of physical geography to cultural development.
- Apply the principles of world regional geography to gain further understanding of the roles and responsibilities of the major world powers in key global issues.
- Apply geographical insights to personal and professional contexts.
- Identify the major physical and cultural regions of the world, noting differences and similarities.



SPAN111 Beginning Spanish I**Credit Hours: 3**

This first semester Spanish course is an introduction to listening, speaking, reading and writing skills, and Spanish-speaking cultures. The course recognizes the practical importance of language with special emphasis on speaking skills. It assumes no previous knowledge of the language. Students learn basic vocabulary and language structure, and begin exploring diverse segments of Spanish-speaking cultures. Note: A grade of C or better is required to take the next course in the sequence.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate Spanish language elements necessary to communicate effectively at a beginning level
- Interpret at a beginning level both written and oral Spanish language messages
- Construct written and spoken Spanish sentences, paragraphs, and workplace messages using appropriate nouns, articles, verbs and adjectives.
- Compare the society and culture of diverse segments of Spanish-speaking peoples



SPAN121 Beginning Spanish II

Credit Hours: 3

This second semester Spanish course is a continuation of language skills and cultural understanding in SPAN111. The course recognizes the practical importance of language with special emphasis on speaking skills. Students expand their vocabulary, language structure, and continue examining diverse Spanish-speaking cultures. Prerequisite(s): Completion of SPAN111 with a C or above.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate a beginning level of competence in Spanish structure and usage.
- Comprehend spoken and written Spanish at a beginning level.
- Construct written and spoken Spanish language messages at a beginning level using appropriate grammatical units.
- Demonstrate knowledge of the society and culture of diverse segments of Spanish-speaking peoples.



SPAN211 Intermediate Spanish I**Credit Hours: 3**

The third semester Spanish course is a continuation of language, skills and cultural understanding at an intermediate level. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and deepen their understanding of diverse Spanish-speaking cultures.

Note: A grade of C or better is required to take the next course in the sequence. Prerequisite(s): SPAN121

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate an intermediate level of competence in Spanish structure and usage.
- Construct written and spoken Spanish sentences, paragraphs, essays and workplace messages using appropriate grammatical units.
- Comprehend spoken and written Spanish at an intermediate level.
- Demonstrate appreciation and understand the society and culture of diverse segments of Spanish-speaking peoples.



SPAN221 Intermediate Spanish II**Credit Hours: 3**

The fourth semester Spanish course is a continuation of language skills and cultural understanding from SPAN211. The course recognizes the practical importance of language with special emphasis on speaking skills. Students continue to expand their vocabulary and language structure, and build a well-rounded view of diverse Spanish-speaking cultures. Prerequisite(s): Completion of SPAN211 with a C or above

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Select the appropriate Spanish language elements necessary to communicate effectively at an intermediate level.
- Interpret at an intermediate level both written and oral Spanish language messages.
- Construct written and spoken Spanish sentences, paragraphs, essays, and workplace messages using appropriate grammatical units.
- Demonstrate an intermediate level of competence in Spanish structure and usage.
- Comprehend spoken and written Spanish at an intermediate level.
- Demonstrate a deeper understanding of the society and culture of diverse segments of Spanish-speaking peoples and be able to compare them.



STAT220 Introduction to Statistics**Credit Hours: 3**

This is the basic statistics course in which students learn to collect, analyze, present and interpret data. Descriptive and inferential statistical methods are applied in problem-solving and decision-making situations. Analysis of large, real-world data sets will be performed using statistical software. Online sections will have an \$85.00 fee for eBook and MyMathLab. Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze a data set using graphic and numeric descriptive methods.
- Compare data sets using appropriate graphic and numeric measures.
- Use simple linear regression and correlation to study the relationship between two quantitative variables.
- Design, perform, and interpret the results of basic hypothesis tests.
- Construct appropriate confidence intervals and interpret the results.
- Use discrete and continuous probability distributions for modeling and inference.
- Understand the effect of sampling size and technique on statistical inference.
- Apply Minitab and other software as appropriate to the course content.



ACCT200 Accounting Basics for Managers**Credit Hours: 3**

This course is designed strictly for the non-business major. It is a comprehensive survey course of financial and managerial accounting concepts that discusses the financial aspects of starting and growing a business. Specifically, the course explores the role of accounting in business, examining the balance sheet, profit/loss statements, and cash flow reports. Students will also learn how to analyze financial statements and financial trends. Prerequisite(s): HLTH211, MGMT211 or CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Define and explain business activities, the role of accounting in business, and accounting principles.
- Understand accrual accounting concepts and apply knowledge to a merchandising business.
- Identify financial statements, apply analytical calculations to these statements and interpret results.
- Describe and discuss proper accounting treatment and reporting of cash; receivables; inventory; fixed and intangible assets; current liabilities; and stockholders' equity, including application of internal controls and regulations.
- Apply concepts of cost behavior, differential product analysis, product pricing, and capital investment in making business decisions.
- Develop budgets and understand their usage in evaluating variances and budgetary performance.



ACCT201 Accounting Foundations I**Credit Hours: 4**

This course is an introduction to accounting principles emphasizing the operation of a business as a sole proprietorship and covers the complete accounting cycle for merchandising and service entities. Partnership accounting is also covered. The application of computer technology to accounting processes is integrated into this course. Note: A grade of C or better is required to take the next course in the sequence. Co-requisite(s): BITS211 or CISP111 and MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create financial statements including multi-step income statement, statement of owner's equity, classified balance sheet
- Analyze and record business events for sole-proprietorships and partnerships.
- Apply applicable Generally Accepted Accounting Principles
- Apply applicable proper accounting treatment and reporting of cash, receivables, inventory, plant assets and current liabilities.



ACCT202 Accounting Foundations II

Credit Hours: 4

This course continues the study of accounting principles with special emphasis on corporations, and basic principles of managerial accounting. Note: A \$25.00 practice set fee is included in this course. Note: A grade of C or better is required to take ACCT301 Prerequisite(s): BITS211 or CISP111, MATH125, and completion of ACCT201 with a C grade or above.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create financial statements including multi-step income statement, statement of stockholder's equity, classified balance sheet and statement of cash flow.
- Create various managerial accounting reports
- Analyze and record business events for corporations using ratio analysis and other techniques.
- Apply applicable Generally Accepted Accounting Principles.



ACCT213 Cost Accounting**Credit Hours: 3**

This course is designed to provide an introduction to cost accounting and cost management techniques. The concepts of cost assignment to goods and services in the context of job order, process, and activity-based costing are covered. The behavior of costs, standard costing and variations-as well as schedules, summaries, and reports used in costing systems-are also introduced to the student. Prerequisite(s): ACCT202

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create appropriate management cost reports for manufacturing and service organizations.
- Evaluate the performance of an organization through budget and variance analysis.
- Analyze cost behavior.
- Apply proper accounting treatment and reporting of business transactions for manufacturing and service businesses within a(n):
 - (a) Job order cost system
 - (b) Process cost system
 - (c) Activity based costing system
- Apply applicable overhead allocation



ACCT220 Accounting Information Tech**Credit Hours: 3**

This course is a study of currently available accounting-business software and the related applications. Students will learn how to operate, evaluate, and apply various software with accounting systems and accounting information systems. Prerequisite(s): ACCT202

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply accounting terms, concepts, and processes to common business transactions using accounting software.
- Formulate standard financial statements and management reports using accounting software.
- Enter, manipulate and retrieve business data using accounting software.



BUSN210 Professional Ethics**Credit Hours: 3**

This course explores applied ethics, focusing on social and professional situations especially in the fields of business, law, and technology. Students learn ethical theory as they examine the complexities of ethical dilemmas. Students also compare and contrast ethical and moral systems. In addition, students apply creative and critical thinking to ethical dilemmas involving professional and social responsibility. A \$55.00 Peregrine assessment fee is charged in this course.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Examine how ethical concepts can be used in the business context to resolve ethical dilemmas and improve ethical decision-making.
- Compare ethical and moral belief systems
- Describe how professional and social ethical decision making influences employee behavior and organizational culture
- Explain the social and legal ramifications of unethical practices
- Describe what the appearance of unethical or compromising practices in business situations means and what businesses should do to avoid such circumstances.



BUSN225 International Business**Credit Hours: 3**

This course focuses on the international dimensions of business by clarifying and classifying country differences with regard to political economy. International Trade Theory, Foreign Direct Investment, and the Global Monetary System are explained. Emphasis is placed on competing in the global marketplace. International business situations dealing with trade, ethical dilemmas and globalization are examined with the use of proper case analysis techniques. Prerequisite(s): MGMT211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Compare and contrast international market entry strategies
- Analyze the impact of the political, legal, economic, social, cultural, technological environment on international business strategy and structure
- Explain international finance concepts including trade and investment, the international monetary system and balance of payments
- Describe international trade theories
- Summarize the differences between international and domestic business operations



BUSN265 Entrepreneurship**Credit Hours: 3**

This course provides foundational knowledge of the entrepreneurial process and its applications in new ventures and other aspects of business management. It addresses the elements of a good business plan, and explains how to build new venture teams and secure financial support. Using case analysis, simulations and experiential learning, the student will develop the ability to recognize and evaluate new business opportunities and define basic strategies for enterprise growth and development. This is the first course in the Entrepreneurship Specialty.

Prerequisite(s): MGMT211 and MKTG211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop basic business models and plans
- Explain the entrepreneurial concept and processes.
- Identify business opportunities using industry, competitor, and feasibility analysis methods.
- Identify the methods used to acquire financial support for a new venture.

**FINC211 Corporate Finance****Credit Hours: 3**

This course covers the fundamental principles of corporate finance. Students will be introduced to various methods of company analysis, the term structure of interest rates, the relationship between risk and return, time value of money principles, security analysis, cost of capital and capital structure, and capital budgeting techniques. Prerequisite(s): ACCT202

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret financial statements of a corporation using trend analysis, and industry comparisons.
- Describe the financial environment relating to markets, institutions, and interest rates.
- Illustrate the relationship between risk and return by applying the Capital Asset Pricing Model.
- Apply the techniques of time value of money to investments and capital budgeting decisions.
- Examine the capital structure of a corporation and its effect on corporation's cost of capital.



HRMG213 Human Resource Management**Credit Hours: 3**

This course is an overview of the responsibilities of a human resource management department in a business setting. The elements of job analysis, recruitment, selection, training and assessment, are described. Additionally, compensation and benefits administration, labor relations and the legislative and legal decisions affecting human resource policy are explored. Various workplace situations are examined through the use of problem solving exercises and discussion. Prerequisite(s): HLTH211, MGMT211 or SPMG211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply employment laws applicable to human resource management to manage issues of discrimination, safety, labor relations, wage and hourly compensation, and benefits.
- Examine differences in global human resources' practices.
- Explain the roles, responsibilities, and constraints in all functional areas of human resource management in the context of an organization.
- Identify the key functional areas managed by human resource departments within the organization.



LEGL101 Introduction to Legal Studies**Credit Hours: 3**

Students are introduced to basic legal vocabulary, the federal and state court systems, and legal ethics. They also become familiar with a variety of law-related working environments.

Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Recognize behavioral and ethical requirements that are imposed upon legal assistants, including confidentiality and prohibition of unauthorized practice of law.
- Apply effective interpersonal skills by interacting appropriately and efficiently with clients, court/agency personnel, co-workers, and supervisors.
- Explain legal terms commonly encountered in legal texts, research, writing, and documents.
- Discuss relevant substantive and procedural legal concepts, as well as the roles of paralegals in specific subject matter areas.
- Explain concepts relating to subject matter jurisdiction and court procedure.



LEGL210 Business Law Foundations**Credit Hours: 3**

This survey course covers the fundamental principles of business law, including the legal system, dispute resolution, government regulation torts, and crimes affecting business, contracts, sales, and agency. Court decisions are used to encourage analytical thinking. Co-requisite(s): ENGL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Explain the legal environment in which business functions including methods of resolving disputes through the courts and alternative dispute mechanisms, the role of the US Constitution in the regulation of business and the power and function of administrative agencies in the regulation of business.
- Describe the elements of contract formation, performance, breach and remedies.
- Define various forms of business organization and analyze the advantages and disadvantages of each form of organization.
- Apply concepts of business ethics and social responsibility to business decisions.
- Differentiate criminal law from tort law.
- Recognize the role of regulation in the areas of employment and labor law, consumer protection, environmental and international law.
- Discuss agency relationships, how they are formed and the duties and liabilities of each party.
- Define and distinguish various types of intellectual property and explain the importance of each.



MGMT211 Management Foundations**Credit Hours: 3**

This course provides a foundation in basic management principles with special application and focus on the supervisory level of management. The four universal functions of management (planning, organizing, leading, and controlling) are explored. Students learn the theories and study their impact on the history of management practices. Proper case analysis process is also examined and applied through the discussion of various supervisory/managerial case situations. Co-requisite(s): ENGL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe management using the lens of history and theories.
- Define, explain, and apply the planning function of management.
- Describe, explain, and analyze the organizing function of management.
- Define, discuss, demonstrate, and develop the leadership function of management.
- Identify, review, and analyze the control function of management.



MGMT321 Organizational Behavior**Credit Hours: 3**

This course is designed to provide students with an understanding of organizations, by combining theory with application relating to motivation, group behaviors, power, politics, conflict, leadership, decision-making, communications, organizational design, and change. Students examine the application of psychology, sociology, and social psychology to organizational management. Prerequisite(s): HLTH211 or MGMT211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate the culture, climate, structure, leadership and communication of an organization
- Analyze the theory and practices of human behavior in organizations
- Apply theories of leadership, teamwork and change to organizational situations and behavior
- Examine conflict and the negotiation process



LEGL211 Criminal Law**Credit Hours: 3**

This course examines Criminal Law in the United States, with an emphasis upon its basic functions and principal components. The substantive elements of crimes and defenses are explored along with an examination of the impact of crime on society. Co-requisite(s): ENGL110 Prerequisite(s): LEGL101 or LEGL210

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Employ effective interviewing skills, locate records and documents, and organize evidence gathered for presentation at all procedural stages of criminal prosecutions.
- Identify the elements of and defenses to crimes, and the evidence required to prove those elements and defenses.
- Apply substantive and procedural law to research, prepare, file, serve, and respond to documents encountered at all stages of selected criminal proceedings.
- Recognize, research, and analyze the substantive and procedural issues that arise in criminal prosecutions under the constitution, statutes, and court rules.
- Prepare, file, serve, and respond to documents encountered during investigations, arrests, charging, arraignments, preliminary examinations, pre-trials, sentencing, and post-trial proceedings.



MKTG211 Marketing Foundations**Credit Hours: 3**

This course explores the role of marketing in society and in the success of an organization. Students learn and apply the strategies, tactics and terminology used by market-oriented businesses. Through critical thinking exercises and case analysis, students become familiar with the primary tools of marketing including market segmentation, product, pricing, marketing communication, and marketing channel strategies. Co-requisite(s): ENGL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze the marketing mix and interpret the major decisions each component involves.
- Compare marketing activities with the other functional areas of an organization.
- Evaluate the concept of marketing segmentation and target market selection.
- Explain the relationship between marketing and its environments, and its role in society.
- Utilize secondary sources (i.e., library) in gaining insight into marketing problems and solutions.
- Demonstrate the importance of quality and customer satisfaction for the firm in today's competitive environment.
- Apply proper marketing terminology in problem solving situations.



MKTG212 Professional Selling**Credit Hours: 3**

This course introduces the theory and practical application of professional selling techniques with a focus on customer needs, behavior, and relationship building. Students learn the theory, practice, and procedures of successful selling while examining the personal attributes necessary for a successful sales career. Student presentation skills are enhanced through sales role-playing. Prerequisite(s): MKTG211 or SPMK210

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Prepare an effective sales presentation.
- Demonstrate personal selling techniques learned in a role playing sales situation.
- Discuss the nature of a professional sales career, including the opportunities, requirements, advantages and disadvantages.
- Describe the different types of closes and trial closes in appropriate sales situations.
- Describe the different methods of questioning for discovering prospect problems.
- Discuss the importance and techniques of establishing rapport during the approach stage of the selling process.
- Describe examples of objections and ways to counter them.
- List the steps in the selling process.



MKTG214 Public Relations Foundations**Credit Hours: 3**

This course introduces the principles for managing relationships with the organization's various audiences, including customers, employees, government, investors, and media. Students develop an understanding of public relations and learn to recognize, examine, interpret, and implement public relations activities and communications. Prerequisite(s): MKTG211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret public relations practices including management and planning, ethics, research, communications, and public opinion.
- Examine public relations activities as they appear in events and the media.
- Write a proper news release.
- Clarify public relations activities with strategic processes involving objectives, strategies, tactics, and budget processes.
- Outline the practical communication applications of public relations as used to influence public opinion.
- Relate public relations activities with key publics, including employees, multicultural communities, government, investors, consumers, and the media.



MKTG220 Principles of Customer Service**Credit Hours: 3**

Students acquire the skills and knowledge to create long-term customer satisfaction, while learning how to gain and retain customers and increase customer productivity. Customer expectations and service levels are explored and strategies to meet or exceed them are identified. Students also examine the methods that are used to carry out and measure the success of various customer service strategies including outbound and inbound telephone calls, service policies and practices, and the use of customer satisfaction surveys. Prerequisite(s): MKTG211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop a brief customer satisfaction survey that will define and measure customer satisfaction.
- Analyze several alternative customer service strategies employed by organizations with an emphasis on developing proactive efforts and correcting errors.
- Examine inter-relationships between customer service and other functional areas in organizations.
- Evaluate methods that may be used to carry out customer service strategy including outbound and inbound calls.
- Demonstrate ways to manage conflict in a customer service setting.
- Examine and discuss the ethical issues involved in managing customer service.



MKTG322 Digital Marketing**Credit Hours: 3**

This course offers an overview of online marketing strategies and techniques. Main topics include operating in a global marketplace, online marketing to individuals with personalization services, traffic building and branding. Prerequisite(s): CISP111 and MKTG211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Understand the role of digital marketing and the integration of digital marketing, ecommerce, and technology in the overall marketing strategy of a company
- Analyze the digital marketing tools utilized in designing and developing marketing programs
- Develop digital marketing strategies and program/plan for a brand or organization
- Understand and describe various methods of evaluating performance of and opportunities for digital marketing programs



PSMG250 Investigative Tech & Procedure**Credit Hours: 3**

This course provides an overview of the principles, methods and techniques used for conducting a criminal or civil investigation. The legal framework for investigation, including coverage of evidentiary rules and ethical issues are examined. Interviewing techniques are also explored with emphasis on the ethical and legal issues associated with conducting the interviews. Practical application techniques are reinforced using case studies and hands-on -exercises. Prerequisite(s): LEGL211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply ethical principles relating to investigation.
- Identify the principal types of investigation.
- Analyze fact situations to determine the appropriate investigation methodology.
- Analyze and draw conclusions regarding evidentiary issues relating to various types of evidence.
- Apply methods for locating witnesses, sources of information including public and privately held documents, and other types of evidence.
- Identify the elements of an investigation including, jurisdictional issues, crime scenes, surveillance collecting and preserving evidence and interrogation.
- Conduct an effective interview, use of case management, report writing, checklists and other information-gathering tools, use of effective interpersonal skills, and post-interview documentation



RMGI221 Risk Mgmt & Insur Analysis**Credit Hours: 3**

This course introduces the principles of risk management, risk mitigation and insurance processes. Students will focus on developing awareness of the challenges, the tools, and the process of designing and implementing a risk management program, including, but not limited to, utilizing insurance as a form of risk management. The course also explores how big data and data analytics provide key insights to risk management. Recommended Co-requisite(s): MATH125 and MGMT211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate areas of risk within a given organization
- Compare and contrast various risk management techniques
- Explain the concepts of risk, loss, exposure and insurance
- Identify data requirements to assess a specific risk



SPMG211 Sport Management Foundations**Credit Hours: 3**

This foundation level course provides a broad overview of the various skills and functional responsibilities of sport managers. Within a framework of sport management practices, students examine supervisory skills, ethics and governance, human resources, labor relations, facilities, marketing, accounting and finance. Proper case analysis process is examined and applied through the discussion of various sport management case situations. Co-requisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate legal and ethical issues with the sports industry and their impact on sports management.
- Examine sport governance within interscholastic, intercollegiate, professional athletic organizations and the global sport community.
- Understand the basics of facilities management including operations, accounting, budgeting and the management of staff.
- Discuss labor relations in the sports industry, including collective bargaining, free agency and anti-trust issues.
- Explain marketing, the marketing planning process and use of sponsorships in the sports industry.



SPMK210 Sport Marketing**Credit Hours: 3**

Students apply the fundamentals of marketing – target market, product, price, marketing channel, and marketing communication – to the sport industry. Students gain an understanding of sport as a product and its unique aspects. Prerequisite(s): ENGL110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply marketing concepts including target market, product, price, marketing channel, and marketing communication to the sport industry.
- Discuss the unique aspects of sport marketing including how sport as a product differs from traditional consumer products and services, and the historical development of sport marketing.
- Understand the needs of the sport consumer through analysis of demographics, psychographics, and behavioral patterns.
- Apply the marketing planning process, including the establishment of goals and objectives, situational analysis, and preparation of the annual marketing plan.
- Discuss the use of marketing tactics such as sponsorship, endorsement, merchandising, licensing, fundraising, special events, ticket promotions, marketing ratings, sales, venue & event marketing.
- Analyze the role of media in the marketing communication element of a successful sport-marketing program.



HINT110 Introduction to HIM**Credit Hours: 3**

4 contact hours This course introduces the student to the contents of the health record. The student will analyze, synthesize and evaluate the contents of the health record gaining a detailed understanding of documentation requirements, data governance, health law, health information technologies, analytics and decision support, health information exchange, revenue management. The student will comprehend the difference between data and information, classification systems and nomenclatures, and primary and secondary data sources. The student is introduced to HIPAA (the Health Information Portability and Accountability Act); legal and ethical issues pertaining to the contents of the health record, privacy, confidentiality and security, and professional ethics. The student gains comprehension of health care information systems acquisition and evaluation, data integrity, data security, and work process design. Through hands-on experiences the student will gain a detailed understanding of health information specialty systems for release of information, coding, chart management, registries, etc. A fee of \$75.00 is charged in this course for NEEHR Perfect access and use. This course requires two hours of lecture and two hours of lab per week (4 contact hours). Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): CISP111 or CISP112 (and HLTH110 for HIT/HIM students only)

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Recognize data content, structure, and standards (information governance). (2)
- Describe information protection methods.(2)
- Recognize the tools and trends of data use.(2)
- Explain healthcare compliance methods.(2)
- Summarize health information leadership strategies. (2)
- Define revenue management processes.(1)



HINT201 Health Information Technology**Credit Hours: 3**

4 contact hours This course provides a detailed understanding of health information systems (administrative, patient, registration, ADT, HER, PHR, lab, radiology, pharmacy and others) commonly available and in use in the U.S. health care delivery. An emphasis is placed on confidentiality, security and privacy policies and procedures. Students will work with an EHR to complete HIM processes within this course. Students are provided an overview of the technology selections process including negotiation and evaluation of a HIM technology. Students are introduced to Systematized Nomenclature of Medicine (SNOMED-CT) including a brief overview of its role in the health care delivery system as the basis for an electronic health record. This course also provides an introduction to data collection, warehousing and system architecture. A fee of \$75.00 is charged in this course for NEEHR Perfect access and use. This course requires two hours of lecture and two hours of lab per week (4 contact hours). Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): HINT110 Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply health information management processes and technologies to facilitate decision-making.
- Describe graphical tools for data presentations created using health data.
- Identify privacy and security measures, policies, and standards.
- Identify leadership strategies related to project, vendor, and enterprise information management.
- Describe graphical tools for data presentations created using health data.



HINT209 Quality/Perf Improve Hlth Care**Credit Hours: 3**

This course is an introduction of the methods used to define, describe, recognize and apply total quality management in health care. The principles of the quality assessment process and risk management will be emphasized. The course will provide an opportunity for the student to gain skills in collecting and analyzing data through a team approach. A fee of \$75.00 is charged in this course for NEEHR Perfect access and use. Note: A grade of C or better is required to pass this course successfully. Prerequisite(s): HINT203 or HLTH210

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply the internal and external documentation requirements of HIM. (3)
- Apply legal, privacy and security measures to comply with quality standards. (3)
- Identify clinical documentation and compliance activities that meet requirement standards. (3)
- Explain analytics, decision support, research methods, information integrity, and data quality.(2)
- Recognize leadership functions and roles related to quality measures. (2)



HINT221 ICD Coding**Credit Hours: 4**

This course introduces students to the International Classification of Diseases 10th Revision, Clinical Modification (ICD-10-CM) volumes I and II, and International Classification of Diseases 10th Revision, Procedural Classification System (ICD-10-PCS). The focus of this course is diagnostic coding and inpatient procedural coding. Students gain a detailed understanding of the Official ICD-10-CM/PCS Guidelines for coding and reporting and apply these guidelines in a structured context for accurate code assignment. Emphasis is also placed on coding compliance and adherence to official guidelines. Students gain an understanding to the importance of data quality and data integrity. Students compare and contrast the new ICD-10-CM/PCS to ICD-9-CM (the previous classification system). Students are introduced to other classification systems such as, DSM-IV and ICD-O. Students will learn how to maneuver in different computerized encoding systems by assigning codes and using various references available. A fee of \$25.00 is charged in this course for 3M Encoder. Note: A grade of C or better is required to pass this course successfully. Prerequisite(s): BIOL116, BIOL131 and HINT110

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Map terminologies, vocabularies and classification systems. (4)
- Demonstrate an understanding of clinical documentation components. (3)
- Adhere to guidelines, policies, procedures for accurate ICD coding. (3)
- Apply diagnostic and procedural codes and groupings according to current ICD coding guidelines. (3)
- Define the clinical data required by various payment and reimbursement systems. (1)



HINT251 Hlth Care Reimbursement Applic**Credit Hours: 3**

This course continues with computer applications in facility claims processing and in physician billing for health care carriers such as Blue Cross/Blue Shield, HMO's, Medicare, Commercial, Worker's Compensation, Disability, and the Federal Employees' Program. Current hospital and physician software packages will be used. The course provides a "hands-on" approach in which students will learn all formats and techniques necessary in the claims process for hospitals, nursing homes, freestanding facilities, rehabilitation centers, and physician offices. This course requires two hours of lecture and two hours of lab per week. Note: A grade of C or better is required to pass this course successfully. Prerequisite(s): HINT221, HINT222, and HLTH250

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Generate clean CMS1450 (UB-04) and CMS1500 claims using current hospital and physician practice management (patient accounting) software.
- Practice accounts receivable management.
- Demonstrate principles and applications of CPT and HCPCS coding systems.
- Demonstrate principles and applications of the ICD-10-CM/PCS classification system.
- Analyze physician practice data as based on system reports.
- Create accurate and valid databases for facility services and claims processing.
- Combine knowledge-based research techniques (such as library, MEDLINE, web-based) and common software applications (such as word processing, spreadsheet, database, graphics) to facilitate learning outcomes.
- Identify the major health carriers and their respective claims management requirements.
- Identify and apply ethical and legal issues as applied to medical insurance reimbursement.
- Translate the CMS1450 (UB-04) paper claim to the electronic Health Insurance Portability and Accountability Act of 1996 Accredited Standards Committee (HIPAA ASC) 837 Institutional electronic claim format.
- Translate the CMS1500 paper claim to the electronic Health Insurance Portability and Accountability Act of 1996 Accredited Standards Committee (HIPAA ASC) 837 Professional electronic claim format.
- Explain the components and benefits of a compliance plan and the impact of a compliance plan on the quality of patient care and the possibility of fraud or abuse.
- Assess professional and practice-related ethical issues as they pertain to the medical billing profession.



HLTH110 Medical Terminology**Credit Hours: 3**

This course introduces the concept of a system-based approach to learning the professional language of those who are directly or indirectly engaged in health care. Word building through knowledge, use of prefixes, suffixes, root words, and combining forms is a central theme of this course. Spelling, pronunciation, abbreviations, medical symbols, and use of a medical dictionary are also emphasized. Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Translate medical language.
- Evaluate medical terms to reinforce knowledge of basic anatomy and physiology
- Understand the origin of common medical terms
- Spell, pronounce, define, and identify words and word parts
- Use medical terms and abbreviations correctly in written work
- Identify scholarly articles related to medical terminology.
- Define the complete meaning of a medical abbreviation



HLTH202 Death and Dying**Credit Hours: 3**

This course examines issues and concerns involved in helping patients and family members facing the problems of terminal illness and death. Students will be introduced to death-related issues for everyday life, including suicide, bereavement, euthanasia, and hospice care. Living will and advanced directives are discussed. This course also examines current medical concerns regarding the care and treatment of a terminal patient. Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze and compare the changing social, psychological, cultural, religious, spiritual, ethical and historical changing patterns of death beliefs and traditions related to varying modes of death, across the lifespan.
- Investigate individual and family grief and bereavement issues through recognition of theories, models of coping, spiritual, religious, and cultural beliefs, and end of life practices and institutions, including care facilities, burial practices, funeral homes, crematoriums, and cemeteries.
- Describe the physiology of death and dying.
- Compare the effectiveness of the medical model of dying and palliative model of dying on end of life care from an individual, family, and cultural perspective.
- Assess the impact of legalities and legal instruments on end of life decision making for individuals and families from diverse religious and cultural backgrounds.



HLTH210 Health Care Orgnztns & Systems**Credit Hours: 3**

This course provides the student with an introduction to health care organizational systems and related resources. Discussions will include history and development of health care in the United States. Students gain a theoretical understanding of various health care provider roles in the overall organizational planning, management, quality, and assessment pertaining to major health policy issues and disciplines in the United States. Topics will compare and contrast the delivery of health care to those of other countries. Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): ENGL110 Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Synthesize the knowledge of the delivery, organization, and structure of healthcare services in the United States with identification of various healthcare roles, functions, and professional disciplines.
- Assess professional and practice-related ethical issues pertaining to healthcare delivery in the United States.
- Assess and debate healthcare organizations' structure and operation and the impact on cost, quality, and access.
- Compare and contrast the US healthcare system with other healthcare systems.
- Compare and contrast external healthcare standards, regulations, and initiatives with governmental mandates.
- Evaluate the role of healthcare financing and the impact on the delivery of healthcare in the United States.
- Apply knowledge-based research techniques and software applications commonly utilized in healthcare.



HLTH211 Healthcare Management**Credit Hours: 3**

This course provides a foundation in management principles with special application and focus on the health care industry. The course will focus on organizational resource management in the health care industry including strategic planning, governance, leadership, change management, communication, human resource management, training and development, organizational development, financial management, ethics, project management and contract management. Case analysis will be applied through the discussion of various health care management-related situations. Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): ENGL110 and HLTH230 Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate ethical principles in diversity and business practice through case study analysis.
- Identify information management principles used for strategic planning. (3)
- Identify leadership roles as it pertains to change, human resources, interdisciplinary, strategic and organizational management. (3)
- Evaluate finance, project and vendor/contract management methodologies. (3)
- Describe appropriate methods for training and development.(2)



HLTH220 Pharmacology**Credit Hours: 3**

This course focuses on the principles of understanding basic Pharmacology and the effects medications have on the body and disease. Names of the top fifty most commonly used medications, their classification, and side effects will be discussed. Safety with respect to calculation and administration of medications will be emphasized. Note: A grade of C or better is required to pass this course successfully. Recommended Prerequisite(s): BIOL120, BIOL115 or BIOL221 and BIOL221L Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Formulate effective communication in reports of the action, rationale for use, common and/or life-threatening side effects and patient teaching issues for each major classification of medications.
- Rank major classifications of pharmacotherapeutics by prototypes as used in the treatment of commonly occurring diseases.
- Evaluate pharmacological terminology pertinent to specific categories and classifications of medications in relation to drug effects on commonly occurring diseases.
- Differentiate pharmacology use and its effects across the lifespan, when administering medications to culturally diverse populations for commonly occurring diseases.
- Distinguish between legal and ethical principles related to research and practice of medication administration.
- Compare and contrast physiology and pathophysiology that must be considered in assessing correct dosages administered to “at risk” populations such as the fetus, infant, child, pregnant woman, and the frail elderly.
- Predict potential drug-drug interactions and drug-food interactions based on physiologic responses to pharmacological agents and apply critical thinking skills for appropriate intervention.
- Explain the correct measures to ensure the prevention of medication errors, employing critical thinking skills to determine the effectiveness of medication administration on care outcomes.
- Identify the roles of the healthcare professional in relation to medication administration and education in both acute care and community health settings.
- List the five concepts of human functioning to assess appropriate/inappropriate responses to therapy.

- Cite historical perspectives contributing to the development of pharmacology through the present.



HLTH230 Health Care Law and Ethics**Credit Hours: 3**

This course will provide the opportunity to explore basic law as it is applied to health related issues and the health care community. The student will be introduced to the concepts of medical ethics and will explore the major ethical issues currently facing health care professionals, with an emphasis on maintaining the highest legal, moral, and ethical standards in their profession. Note: A grade of C or better is required to pass this course successfully. Prerequisite(s): ENGL109

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Interpret and monitor current confidentiality policies and procedures, privacy and security in various healthcare settings.
- Describe the legal and ethical impact of health information and records management laws and regulations (patient rights, advocacy, advanced directives, etc.)
- Identify and articulate practical decision-making relative to ethical dilemmas commonly found in the current healthcare setting.
- Describe the legal system and fundamental legal concepts applicable to the healthcare field.



HLTH250 Healthcare Reimbursement Mgmt**Credit Hours: 3**

This course is an introduction to health care reimbursement systems used throughout the United States. Students will gain a detailed understanding of various payment methodologies currently used (i.e. managed care, third party payers, federal programs, etc.), and apply this understanding to the monitoring and management of the revenue cycle. Students will verify completeness of clinical documentation, manage the use of clinical data systems used in claims management and utilize the principles of health care finance to monitor healthcare facility revenue. Current HIPAA guidelines will be covered along with financial ethics and the identification and eliminations of financial fraud and abuse. Note: A grade of C or better is required to pass this course successfully. Prerequisite(s): ENGL109 and MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply revenue cycle and reimbursement principles. (3)
- Identify fraud surveillance activities in healthcare organizations. (3)
- Identify documentation in the health record that supports billing reimbursement processes to meet regulatory requirements. (2)



HSAD301 Cultural Issues in Health Care**Credit Hours: 3**

In this course, the student will be able to demonstrate an understanding of diverse cultures, values, and belief systems. Emphasis will be on diverse healthcare needs of varied communities, including global healthcare delivery issues, communication styles (language), religious and demographic differences of individuals who are consumers of healthcare practices. Note: A grade of C or better is required to pass this course successfully. Co-requisite(s): SOSC201

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate dietary practices and traditions of various cultures as they relate to health.
- Compare and contrast methods of healing and healthcare practices in different cultures.
- Compare and contrast sociocultural attributes of different groups.
- Differentiate various death rituals and responses to death and grief.
- Explain professional and practice-related ethical issues.
- Explain cultural differences in perception and response to illnesses.
- Identify high-risk behaviors in different cultures related to health issues.
- Recognize verbal and nonverbal communication of various cultures.
- Identify reproductive health practices of different cultures.



MEDA259 Medical Office Applications**Credit Hours: 3**

Students will master the administrative duties of medical office management. This will include communication skills both verbal and non-verbal, computerized office management, scheduling, accounting practices, financial management, third party billing and reimbursement, and daily operations. Students will have hands-on interaction in the use of electronic medical records. There is a \$75.00 fee for NEEHR Perfect access and use. Note: This course requires two hours of lecture and two hours of lab per week. A grade of C or better is required to pass this course successfully. Prerequisite(s): CISP111, HLTH110, and MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Generate paper and electronic health information to include organizing patient records and filing while applying appropriate legal, regulatory agency, and ethical guidelines.
- Use multiple clinical and administrative functions in electronic medical records.
- Demonstrate professional behavior in the healthcare setting.
- Demonstrate written and verbal communication skills.
- Perform basic accounting procedures.
- Perform duties within legal, regulatory and ethical guidelines.
- Discuss interpersonal skills and human behavior related to patients throughout the lifespan.



BITS101 Computer Essentials**Credit Hours: 3**

This course is designed for novice computer users. The primary focus is the development of keyboarding ability since this skill is a prerequisite to computing success. Other areas to be studied include configuring the Windows desktop and managing files with Windows Explorer. Students will also learn the basics of operating a computer for simple word processing tasks, searching the Internet, and effectively using e-mail.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- key straight copy for 3 minutes at a rate of 25 correct words per minute with a maximum of three errors
- efficiently use the Windows interface to move, resize, minimize, maximize, and close windows as well as to control windows properties
- customize the Windows desktop
- create, move, copy, delete, and rename files and folders with Windows Explorer
- create, save, open, and print a document in word processing software
- effectively perform Internet searches for specific information
- send and receive e-mail with his/her Davenport account
- send and open an attachment to an e-mail message
- save and open a file downloaded from the Internet
- identify basic terminology related to the Windows environment and the Internet



BITS209 Dynamic Presentations**Credit Hours: 1**

Students create dynamic, computerized presentations using the advanced tools of professional-caliber presentation software. Students will learn to enhance presentations with custom animations, transitions, action controls, and a variety of multimedia objects. In addition to design techniques, students study the tools for professionally delivering a presentation within various environments. This course is recommended for all students who will need to make polished presentations in their career. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create dynamic PowerPoint presentations using advanced software tools such as custom animations, transitions, layout variations, and action controls
- Incorporate text, graphics, and multimedia objects to enhance the message of a computerized slide show
- Prepare portable presentations for various media and environments including web-based and tutorial applications
- Demonstrate creativity while applying key presentation design techniques
- Use a digital camera, scanner, and projector to create and present slide shows
- Enhance a presentation through the use of speaker's tools
- Integrate related software files within PowerPoint
- Use time-saving features such as slide master and templates to create a presentation quickly yet consistently.



BITS211 Microcomp Appl Spreadsheet**Credit Hours: 3**

Students create and manipulate spreadsheets with MS Excel to solve business applications. It is expected that students have a familiarity with spreadsheet software, as the course quickly progresses to advanced features, including data validation, linked workbooks, pivot tables, lookup functions, solver, and scenario manager. By the end of the semester, students will have the prerequisite skills to take applicable certification testing. Recommended Prerequisite(s): CISP100 Prerequisite(s): MATH125

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Plan, create, and format an Excel spreadsheet to solve business applications
- Create formulas manually and with the formula function.
- Create and format a variety of charts and their components.
- Apply special spreadsheet commands such as sorting, filtering, linking workbooks, pivot tables, and lookup functions.
- Analyze spreadsheet data through solver, goal seek, data tables, and scenario manager.
- Export and import data with varied sources.
- Demonstrate the prerequisite spreadsheet skills for MS Excel expert certification.



BITS212 Microcomputer Apps Database**Credit Hours: 3**

Students learn to create and manipulate databases to solve business applications. The course begins with the basic structure and configuration of tables, queries, forms, and reports. It then advances to more complex queries, custom forms and reports, macros, and the integration of databases with the web and other programs. At the end of the semester, students combine these features into a functional database which has a user-friendly interface. By the end of the semester, students will have the prerequisite skills to take applicable certification testing.

Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create and modify tables with various field properties.
- Create and modify table relationships.
- Solve business questions by filtering, sorting, and creating simple condition and complex queries including parameter, list-of-values, pattern match, find unmatched, find duplicates, and crosstab.
- Apply action queries such as make-table, append, history, delete, and update to appropriate business scenarios.
- Create and modify database forms for user-friendly input.
- Create and modify database reports for professional and meaningful output.
- Import and export data with various sources
- Create and link a database file with web pages and HTML documents.



BITS213 Microcomputer Apps Desktop Pub**Credit Hours: 3**

Students learn to design high-quality, marketable publications with industry-standard page composition software. Sample projects include newsletters, brochures, letterheads, business cards, and on-line materials. Publication design principles and software competency are integral components of this course. Students work on team projects and pre-press activities which are critical components of desktop publishing. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create professional-quality publications such as newsletters, brochures, flyers, letterheads, and business cards using Adobe InDesign CS2.
- Apply software functions such as font and color attributes, page layout, and graphic features to produce attractive publications which adhere to standard design theory
- Plan and produce an original publication as a team effort
- Critique publications as to their effectiveness for the intended audience and purpose
- Critique publications on acceptable design practices by using appropriate publishing terminology



BITS214 Microcomputer Applications**Credit Hours: 3**

This course expands on prior word processing knowledge. Students study advanced commands and features of industry-standard word processing software for production of various business documents. Some areas of study include macros, mail merge, sharing data, compiling specialized tables, collaborative tools, and forms. Upon successful completion of this course, students will have the prerequisite skills to take applicable certification testing. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate business documents for accuracy in style, format, grammar, and spelling.
- Integrate word processing functions with Internet activities and MS Office Suite applications.
- Create/incorporate macros, mail merge, templates, and shared document features to improve word processing efficiency.
- Design visually-appealing documents through the use of font attributes, borders, clip art, WordArt, SmartArt, drawn objects, and charts.
- Create tables, columns, styles, sorts, fill-in forms, envelopes, and labels.
- Assemble long documents with section breaks, indexes, table of contents, page numbers, bookmarks, headers/footers, and footnotes/endnotes.
- Demonstrate the prerequisite word processing skills for MS Word expert certification.



BITS301 Image Editing Applications**Credit Hours: 3**

Students create, edit, and prepare graphics for print publications and web sites using professional image editing software. A project approach gives students an advanced-level of understanding of photo editing and design for a variety of media formats. Students will create dynamic artwork using layers, color commands, painting tools, filters, typeface design, and many other image techniques. Upon successful completion of this course, students will have the prerequisite skills to take applicable certification testing. Recommended Prerequisite(s): CISP100 and CISP220

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create a graphic image with professional graphic-editing software.
- Create, position and transform an object using professional illustration software.
- Design and organize images through the use of layers.
- Create web elements such as buttons, document slices, rollovers, and basic animations.
- Create special effects with filters using selection techniques to modify image attributes.
- Illustrate examples of image-editing terminology.
- Apply painting tools and color attributes to enhance the aesthetic affect of an image.
- Apply special Photoshop features such as liquefy, mesh, mask, and transform



BITS302 Graphic Illustration Software**Credit Hours: 3**

This course introduces students to professional digital illustration software. Students will learn to create everything from simple graphics, icons, and text to complex, multi-layered illustrations for print publications, multimedia presentations, or the web. Students learn to draw illustrations electronically, transform objects, work in layers, and create special effects with patterns, brushes, and filters. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create, position, and transform an object using professional illustration software.
- Apply color and transparency techniques to Illustrator objects.
- Use anchor points, paths, and the clipping mask to modify a drawing.
- Organize artwork through effective use of layers
- Use patterns and brushes to create unique artwork
- Incorporate filters, gradient meshes, envelopes, and blends in illustrations
- Work with graphs and grouped objects.
- Create and edit graphs.
- Create and edit symbols.
- Prepare an Illustrator graphics for prepress, printing, and the web.



CISP100 Introduction to Computers**Credit Hours: 3**

This course introduces students to computer hardware, software, and terminology. Hands-on lab exercises will be extensive and focused on Internet usage, file management, and microcomputer software (word processing, spreadsheet, database, and presentation). Recommended Prerequisite(s): Keyboarding 25 wpm

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create word processing documents with integrated objects including tables and pictures.
- Create proficient PowerPoint presentations.
- Create spreadsheets with multiple sheets and charts.
- Create a database and output reports based on database queries and filters.
- Demonstrate proficient file management on a PC.
- Discuss current ethical and legal issues related to computers in society.
- Locate and share information on the Internet (www and e-mail).
- Discuss current events specific to Information Technology.
- Define basic computer terms such as hardware, software, kilobyte, operating system, etc.
- Demonstrate proficient email skills including attachments.



CISP111 Requirements Planning/Develop**Credit Hours: 3**

This course surveys the main components of the business systems cycle. The five phases of the systems development life cycle (SDLC) (systems planning, system analysis, systems design, systems implementation, and system operation and support) will be investigated. Students will look at how many of the typical business needs are incorporated into a business system. These may include invoicing, accounts receivable, order entry, inventory, accounts payable, payroll, manufacturing, and sales/marketing. Participation in a group project, site visit, or case study will give students a sense of group dynamics in real-world systems development projects. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe major system's components such as: hardware and software requirements (including system flowcharts), type of computer programs, types of computer files, systems documentation, computer programming fundamentals, and batch control.
- Describe each of the five phases of the SDLC.
- Identify and employ logical steps and practical problem-solving processes in program/project development.
- Describe how information systems, including the Internet, intranets, and extranets support business requirements in today's intensely competitive environment.
- Describe how systems analysts interact with users, management, and other information systems professionals in a typical business organization.
- Create context diagrams, data flow diagrams (DFDs), organizational charts, and Gantt charts using commonly available software such as Microsoft Visio and Microsoft Project.
- Demonstrate the ability to work as a team member in the development of a technical project or system analysis.
- Analyze business cases to determine optimum problem-solving, data analysis, and systems analysis techniques.



CISP211 E-Business Technologies**Credit Hours: 3**

This course is an introduction to Internet and Web based technologies, and methods improving purchase and logistics activities. Main topic areas include web-based technologies used to create new business opportunities, business strategies for e-commerce, hardware and software requirements, security concerns, payment systems, MRP, ERP concepts, cloud technology. Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe web and internet technologies supporting businesses.
- Describe the infrastructure and components of the internet.
- Explain how web-based technologies have impacted business practices to become more transparent.
- Explain security, privacy, and legal issues relating to e-business.
- Explain ERP and MRP concepts and how such applications integrate all facets of a business' operation.
- Describe the flow of material and information in a supply chain and where internet web-based technologies make an impact



CISP220 Web Page Applications**Credit Hours: 3**

This foundational course in web page design and development provides hands-on experiences in HyperText Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript to develop, validate, link, publish, design, and maintain web pages using industry standard tools. Topics covered include HTML forms, responsive design, interactive content, media usage, cascading style sheets, and the publishing process. Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop a working website using HTML, CSS, and JavaScript
- Implement inline, embedded and external style sheets
- Utilize various types of forms, lists, positioning, media and special effects
- Publish content to web servers using industry standard deployment tools
- Explain web accessibility initiatives and internationalization guidelines



CISP238 Server Side Scripting I**Credit Hours: 3**

Students learn to combine front-end and back-end web development using the Model-View-Controller software pattern. Students create database-driven web pages that can retrieve and manipulate data contained in a database using an entity framework to solve specific problems. Note: This course requires a C or better grade in order to take the next course in the sequence. Prerequisite(s): CSCI232, CSCI234, CSCI239, or CISP242

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create asynchronous front end web pages using JavaScript and XML (Ajax)
- Utilize data access frameworks.
- Implement data validation, such as regular expressions, to insure data is validated on both the client and server
- Utilize source code control
- Publish to a remote server using FTP and web deployment tools
- Explain each component for the MVC design pattern.
- Execute a program including debugging and tracing the flow, from the client side through the back end web server to the database
- Utilize tools and methodologies that integrate security best practices throughout the software development life cycle to mitigate
- risks, reduce attack surfaces, and increase the quality of software development efforts



CISP242 Visual BASIC Programming II**Credit Hours: 3**

This course is a continuation of Visual BASIC Programming I. Emphasis will be placed on how to work with databases from within Visual Basic. Other topics include utilizing class modules, creating DLL's, utilizing common controls and the Windows API functions, and deploying and debugging an application. Prerequisite(s): CSCI231

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss object-oriented concepts and techniques and how they apply to the design of a program.
- Apply problem-solving techniques in identification and analysis of program needs.
- Design a logical program solution.
- Test and debug the Visual Basic application.
- Demonstrate the ability to deploy a Visual Basic application.
- Demonstrate how to apply object-oriented concepts to promote code reuse both within a program and across multiple programs.
- Describe how a Visual Basic program interacts with a database and how to retrieve and manipulate the data within the database.



CISP246 3D Modeling**Credit Hours: 3**

This course provides the student with an introduction to 3D modeling. Students will utilize polygonal and NURBS modeling to develop surfaces, shapes, and basic animations. Topics covered include lighting, rendering, paint effects, and particles. Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Implement models using Polygonal Modeling.
- Implement models using NURBS Modeling.
- Demonstrate basic animation techniques.
- Demonstrate character setup and rigging.
- Implement lighting and texturing for animations.



CISP247 Database Design**Credit Hours: 3**

This course will examine the major types or data models of Database Management Systems (DBMS): hierarchical, network, relational, and object-oriented. The principles and problems of database design, operation, and maintenance for each data model will be discussed and compared. Topics that will be covered include design theory, query language, relational expressions, SQL, stored procedures, client-server interfaces, entity relationship diagrams, normalization, and database security. Prerequisite(s): CISP111, IAAS221 or IAAS224

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss the advantages and disadvantages of the four types of database design; hierarchical, network, relational, and object-oriented.
- Discuss the role of SQL in database application development.
- Demonstrate the different modeling and design techniques for a DBMS.
- Demonstrate normalization and ERD diagramming.
- Discuss the importance of database security.
- Describe the developing changes in database design and implementation, including XML applications.



CISP253 Perl/Python Scripting**Credit Hours: 3**

Perl and Python programming languages are both cross platform in nature and can be used on Windows, Linux/Unix and Mac OS systems. This broad-based capability makes the Perl/Python Scripting languages highly useful in the field of technology. Both languages are highly capable in stream editing of data, data manipulation and parsing, which are programming capabilities required in IT Forensics. Prerequisite(s): CISP111, IAAS221 or IAAS224

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Design structured programs.
- Demonstrate the ability to code loops, branches, and logical structures.
- Write mathematical expressions, function calls, and functions.
- Demonstrate built-in and user-defined data types.
- Use the Perl and Python language for structured and interactive programming.
- Demonstrate the use of linked lists, strings, arrays, and records.
- Demonstrate the ability to code input and output within a program.



CISP303 Web Development

Credit Hours: 3

This class focuses on front-end web development. Students enhance their web programming skills using industry standard applications. Emphasis is placed on the functions of setting up a development environment, managing code versions, programming responsive flexible sizing displays, and using development tool(s) to help debug code. Recommended Prerequisite(s): BITS301 Prerequisite(s): CISP220

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop functional, responsive, and multi-page web sites using industry standard tools
- Utilize JavaScript libraries such as JQuery for validation of form and event handling
- Demonstrate the use of source code control
- Create responsive web sites for various devices using frameworks such as Bootstrap
- Use a common development tool to assist in debugging web pages
- Publish, validate, maintain, and manage a web site



CISP309 Database Systems**Credit Hours: 3**

This course covers the use of a relational database management system (RDBMS) in the design and development of database systems. Topics include the use of SQL, DDL, stored procedures, indexes, constraints, triggers, user management, query optimization, and administrative tasks. Prerequisite(s): CISP247

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss advantages and disadvantages of relational database processing.
- Explain the functions of a DBMS.
- Demonstrate how to properly document a database design by utilizing a data dictionary, database object naming conventions, and entity-relationship diagrams.
- Develop DML (SQL) code to select, insert, update, and delete records within a database.
- Develop DML code to alter the structure of database objects.
- Demonstrate the implementation of stored procedures, triggers, and check constraints.
- Demonstrate the proper use of transactions to ensure the integrity of data within a database.
- Demonstrate the use of the normalization process to produce a database design at 3NF or better.



CISP310 Server Side Scripting II**Credit Hours: 3**

This course builds upon the concepts learned in Server-Side Scripting I. Advanced concepts in server-side scripting will be applied, including webserver configuration, SSL, caching, web service development, and authentication. Students will design, develop, test, and deploy database applications to local and remote environments. Prerequisite(s): CISP238 completed with a grade of C or better.

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Design and implement web services such as RESTful APIs
- Apply authentication and role-based access control to protect resources and processes
- Implement the process of importing the SSL certificate to a web server to support https protocol
- Apply appropriate use of caching and state management to improve performance
- Apply testing tools to insure quality
- Utilize tools and methodologies that integrate security best practices throughout the software development life cycle to mitigate risks,
- reduce attack surfaces, and increase the quality of software development efforts



CISP316 Web Design**Credit Hours: 3**

In this intermediate to advanced web design course students apply the main web site production processes with particular emphasis on design elements involving layout, navigation and interactivity. Hands-on web design exercises will be taught using state of the art software. Design techniques will be discussed and implemented into a functional website that the student will create in the course. Prerequisite(s): CISP303

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Gather requirements from a client for the design and implementation of a real-world website.
- Incorporate web graphics into a website using best practices.
- Describe website architecture, workflow, and production processes.
- Demonstrate fundamental online graphic design principles, including appropriate interactivity, content-sensitive navigation schemes, and user interface criteria.
- Select task-appropriate software tools for the implementation of a website.
- Demonstrate web animation techniques.
- Demonstrate the use of website accessibility.
- Apply website implementation and hosting.
- Create a functional website following industry best practices for a real-world company as part of a team.



CISP330 Software as a Business**Credit Hours: 3**

This course will survey issues related to the commercialization of a software product. Topics will include innovation, entrepreneurialism, business organization options, funding, software development options, intellectual property, and other aspects related to getting from an idea to a successful business. Students will be responsible for designing, developing, and beginning the process of creating a technology start-up company. Prerequisite(s): CISP111 and MGMT211

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify key software industry trends and attractive software market opportunities
- Demonstrate how to create a successful software company by: Identifying, creating, and managing successful management and development teams; Matching the funding options to a business opportunity, Matching the exit option
- Identify the challenges of the software industry: Turning value into revenue, making the distinction between a technology, a product, and a market-maker, finding the right business model and mix of tools and services; finding the right distribution channel for a software product.
- Demonstrate how to minimize and manage software development and support costs
- Develop a competitive IP strategy and patent portfolio



CISP340 Mobile Application Development I**Credit Hours: 3**

This course explores the tools, platforms, and techniques required to develop applications for highly mobile and compact devices. Mobile applications will be designed, developed, tested, and deployed that provide computing services to the mobile user. The design implications between traditional desktop application development and mobile application development will be investigated during the course of application development. Note: A grade of C or better is required to take the next course in the sequence. Prerequisite(s): CSCI231

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Design network aware mobile applications.
- Design appropriate user interfaces for varying screen sizes and orientations.
- Configure a mobile application development environment.
- Implement data storage and retrieval mechanisms that are appropriate for both the application and the device.
- Utilize specialized sensors available on the device, including global positioning, accelerometers, and proximity sensors.
- Explain the deployment and support of mobile applications.
- Utilize tools and methodologies that integrate security best practices throughout the software development life cycle
- to mitigate risks, reduce attack surfaces, and increase the quality of software development efforts.



CISP341 Mobile Application Development II**Credit Hours: 3**

This course continues exploring the tools, platforms, and techniques required to develop applications for highly mobile and compact devices. Advanced topics in mobile applications will be discussed with emphasis placed upon the application lifecycle post initial distribution. Topics include debugging, cross-platform development, version management, application distribution, and integrating with web-based services. Prerequisite(s): Completion of CISP340 with a C or better grade

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Design the distribution and deployment across platforms.
- Manage source code versioning using various methods.
- Debug issues with code when implemented on various platforms.
- Examine mobile programming cross platform software and frameworks.
- Utilize tools and methodologies that integrate security best practices throughout the software development
- life cycle to mitigate risks, reduce attack surfaces, and increase the quality of software development efforts.



CISP401 Systems Analysis and Design**Credit Hours: 3**

The major concepts of systems analysis and design are reinforced. The student will learn how to provide management for projects that employ the methods of data gathering, fact-finding and input/output design. Using case problems, students will implement the techniques of system development and project management. In preparation for the role of a systems analyst or designer, students will be expected to use all of the skills and techniques of an advanced analyst to research a complex project. Prerequisite(s): CISP111, CISP247 and either CSCI232, CSCI234, CSCI239.or CISP242

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop, synthesize, and gain concurrence of a problem statement.
- Create Data Flow Diagrams (DFD's).
- Design input/output and data structures.
- Specify, design, and create data dictionaries.
- Develop recommended specifications for a project that will be outsourced.
- Normalize record design.
- Identify the tools necessary to manage large-scale systems projects.
- Demonstrate the use of CASE development tools.
- Identify and document critical analysis of projects created using the Structured Development Life Cycle.



CSCI222 Biometric Fundamentals**Credit Hours: 3**

This course will present an overview of the topics fundamental to Biometrics. Those topics will include an introduction to the Biometric modalities currently being used today (such as Face, Finger, and Iris). Performance evaluation of biometric systems will be explored as well as understanding the components that make up a biometric system. An overview of the sciences that allow biometrics to be used today will also be briefly covered (Computer Vision, Pattern Recognition, Machine Learning, and Statistical Inference) Prerequisite(s): IAAS221 or IAAS224

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate a basic understanding of Biology; the structure of cells, how cells produce and use energy, how they reproduce, and how inheritance works.
- Demonstrate a basic understanding of fingerprinting, iris scanning, speaker verification, hand geometry, and dynamic signature recognition technologies.
- Demonstrate a basic understanding of statistical testing and analysis methodologies.
- Demonstrate a basic understanding of pattern recognition techniques.
- Apply biometric methods that are applicable to specific problems.
- Understand the legal, social and ethical issues concerning the application of biometric techniques to Information Assurance.
- Demonstrate an understanding of identification using physiological and behavioral traits.
- Demonstrate an understanding of common aspects of biometrics systems, including theoretical (statistical decision theory) and practical (issues of acceptability).
- Demonstrate an understanding of current identification using traditional (fingerprints, face, voice) and recent (iris, retina, ear, dynamic signature) biometric systems.
- Demonstrate identification techniques using pattern recognition, including feature extraction and matching.
- Apply Biometrics and Biometric authentication devices to solve real-world human-machine authentication issues.



CSCI231 Introduction to Programming**Credit Hours: 3**

This is an introductory course in object-oriented programming. Students learn fundamental programming concepts including structured programming, operations on data and decision-making, looping, recursion, pointers, scope and class of variables strings, numeric arrays, sorting, and an introduction to data structures. Emphasis will be placed on the design, development, and testing of programs used to solve practical problems. Note: A grade of C or better is required to take the next level of programming courses CSCI 232, CSCI 234 AND CSCI239 Co-requisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Design structured programs.
- Demonstrate the knowledge of loops, branches, and logical structures.
- Write mathematical expressions, function calls, and functions.
- Demonstrate basic knowledge of loops, selections, and conditions.
- Demonstrate built-in and user-defined data types.
- Use the C# language for structured and interactive programming.
- Demonstrate the use of linked lists, strings, arrays, and records.
- Demonstrate the knowledge of input and output on a program.
- Utilize security tools and methodologies to address security requirements
- in the design phase of a software development project that identifies threats
- and reduces the attack surface of the system under development.



CSCI232 Object-Oriented Program w/ C++**Credit Hours: 3**

This course is a continuation of object-oriented programming utilizing C++. Students learn to design, code, test, and debug programs using object-oriented techniques. Emphasis is placed upon topics such as problem solving, programming structure, arrays, strings, pointers, classes, inheritance, polymorphism, constructors, copy constructors, destructors, overloading operators, virtual functions, I/O file streams, and data files. Students learn how to strengthen problem solving skills and analytical techniques as they apply to their programs a variety of data types, input/output, operators, decisions, looping, and functions. Prerequisite(s): CSCI231 completed with a grade of C or better

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Write simple computer programs in C++ using Classes, Inheritance, and Polymorphism.
- Create and destroy objects dynamically.
- Redefine operators to work with Classes.
- Demonstrate use of concept Inheritance.
- Use the concept of Polymorphism.
- Allocate memory dynamically and delete it when it is not needed.
- Write output of a program to a file on the disk and read data from a file on the disk.
- Use single and multidimensional arrays, searching and sorting techniques.
- Utilize security tools and methodologies to address security requirements
- in the design phase of a software development project that identifies threats
- and reduces the attack surface of the system under development.



CSCI234 Object-Oriented Program w/ C#**Credit Hours: 3**

This continuing course in object-oriented programming exposes students to C# programming and object-oriented analysis and design techniques. Students will design, develop, and test applications used to solve practical problems. Topics explored include classes, inheritance, polymorphism, interfaces, database access, extensible markup language, and network programming. Prerequisite(s): CSCI231 completed with a grade of C or better

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Write simple computer programs in C# using Classes, Inheritance, and Polymorphism.
- Create and destroy objects dynamically.
- Redefine operators to work with Classes.
- Demonstrate use of concept Inheritance.
- Use the concept of Polymorphism.
- Allocate memory dynamically and delete it when it is not needed.
- Write output of a program to a file on the disk and read data from a file on the disk.
- Use single and multidimensional arrays, searching and sorting techniques.
- Utilize security tools and methodologies to address security requirements
- in the design phase of a software development project that identifies threats
- and reduces the attack surface of the system under development.



CSCI239 Object-Oriented Program w/Java**Credit Hours: 3**

This course investigates advanced topics in object oriented programming using the Java programming language. Data structures, Trees, Linked Lists, Abstract Data Types, Binary Trees, Graphs, Searching and Sorting Algorithms are covered. Prerequisite(s): CSCI231 completed with a grade of C or better

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss and define object-oriented concepts and techniques.
- Design Graphical User Interfaces.
- Identify/Describe the Java variables, primitive data types, and arithmetic operators.
- Demonstrate the knowledge of loops, branches, and logical structures.
- Demonstrate the use of objects, strings, and arrays.
- Demonstrate the knowledge of structured error handling.
- Demonstrate the ability to solve problems and create stand-alone programs utilizing
- JAVA programming techniques and methodologies.
- Describe multithreading benefits and issues.
- Design applications which interact with information contained in database systems.
- Utilize security tools and methodologies to address security requirements
- in the design phase of a software development project that identifies threats
- and reduces the attack surface of the system under development.



CSCI258 Introduction to Game Design**Credit Hours: 3**

This course introduces students to the game development process from storyboarding the initial concept to the final marketing documentation. During this course, students will utilize multiple game development methodologies to move a project through the major stages of game design with each student assuming one or more of the development team roles. Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create a budget that accurately reflects the estimated work required to complete a project.
- Develop a working game prototype or simulation based on current industry standards.
- Demonstrate the use of prototyping, storyboarding, character and genre development in the preproduction of development of game.
- Create viable testing plans addressing the critical phases in the development lifecycle.
- Differentiate between different gaming theory methods.
- Describe the behavior in games using the concepts of game theory methods.
- Explain key development team roles and responsibilities.
- Describe the game development process from pre-production to post-production.



CSCI260 Software Engineering**Credit Hours: 3**

The key objective of this course is to learn modular design of software and documenting the design using symbolic representations, i.e., UML diagrams. The course will cover software life-cycle models and different phases of the software development process. Object-oriented techniques are key to the course. However, this is not a programming course. Prerequisite(s): CSCI231

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Apply modular design of software development and documentation.
- Understand and apply each of the phases of software development processes.
- Apply logical steps and practical problem-solving processes in software development.
- Understand and Apply software engineering techniques when developing software
- Create symbolic representations to document software design
- Analyze and critique a demonstrable software package as a team using software engineering process.



CSCI268 Assembly Lang & Comp Arch**Credit Hours: 3**

This course will examine the fundamentals of machine organization, assembly language, and machine language to expose the student to the fundamental operating principles of a central processing unit and related components. Topics may include instruction set architecture, assembling and linking, memory addressing modes, parameter-passing conventions, pipelining, cache and virtual memory organization, I/O and interrupts, registers, RISC vs. CISC, and data representation. Prerequisite(s): CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss how different data types are represented and organized in hardware and the mechanisms utilized to detect and handle errors.
- Diagram the organization of hardware components of a contemporary CPU.
- Discuss the steps in the instruction execution cycle and how superscalar designs and pipelining may be employed to increase performance.
- Demonstrate the design and implementation of assembly language programs that perform I/O and utilize interrupts.
- Compare and contrast the RISC architecture and the CISC architecture discuss the appropriate use of RISC vs. CISC in development scenarios.



CSCI280 Artificial Intelligence**Credit Hours: 3**

This course will present an introduction to the field of Artificial Intelligence. Topics will include problem solving, search techniques (including game playing), inductive learning, decision trees, reasoning, and natural language understanding. Prerequisite(s): CSCI231 and MATH250

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Understand and apply 'Search'.
- Demonstrate Game playing.
- Demonstrate Logic and Automated Reasoning.
- Demonstrate Reasoning with Uncertainty (Probabilistic reasoning)
- Understand Machine Learning.
- Understand Natural Language Processing.



CSCI312 Data Structures/Algorithms**Credit Hours: 3**

This course is a continuation of object-oriented programming that investigates advanced topics in technically oriented programming. Algorithmic analysis using computational complexity and big-O notation will be applied to classic data structures, including but not limited to arrays, vectors, linked lists, stacks, queues, trees, binary trees, binary search trees, and graphs. The computational complexity of classic searching and sorting algorithms will also be investigated. Prerequisite(s): CSCI232, CSCI234, or CSCI239

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Utilize sorting algorithms to order objects contained within linear data structures.
- Utilize algorithms to search for objects within linear and non-linear data structures.
- Implement a solution that utilizes the appropriate data structure(s) that meets the goals of a specific program.
- Analyze the strengths and weaknesses of linear data structures including arrays, vectors, linked lists, Stacks, and Queues.
- Compare and contrast the use of Trees, Binary Search Trees, and Graphs.
- Discuss the asymptotic complexity of a retrieval and insertion operation on a given data structure utilizing Big-O notation.
- Utilize tools and methodologies that integrate security best practices throughout the software development life cycle to
- mitigate risks, reduce attack surfaces, and increase the quality of software development efforts



CSCI325 Deep Learning

Credit Hours: 3

This course will introduce the student to the theory and application of deep learning. Machine learning concepts will be covered such as hyperparameters, validation sets, overfitting, underfitting, bias and variance. Methods for regularization of deep learning methods will be discussed as well as the optimization and application of deep learning algorithms to real world problems. Other concepts that may be discussed could include convolutional networks and autoencoders. Prerequisite(s): CSCI280

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Evaluate deep learning method(s) to solve a given problem
- Analyze the theoretical foundations intrinsic in deep learning algorithms.
- Select the appropriate method(s) to tune a deep learning network selecting the appropriate method(s).
- Identify key architectural components of deep networks.
- Describe the effect of numerical computation and optimization on a deep learning algorithm



CSCI326 Biometric Spoofing

Credit Hours: 3

This course will cover the inverse problem to Biometrics: Biometric Spoofing! The course will cover concepts and techniques that are used to spoof Biometric Systems. Topics that may be covered will be liveness detection, encryption, template reverse engineering, and cancellable biometrics. The final project for this course typically involves challenging the student to a hands-on experiment where the student will spoof a common biometric device with a variety of attacks. Prerequisite(s): CSCI222 and CSCI231

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze the components involved in synthesizing a biometric
- Apply countermeasures to spoofing techniques.
- Understand current Countermeasures and Spoofing (e.g., liveness detection, biometric encryption, template security, cancellable biometrics, etc.)
- Understand fully the advantages of certain biometrics over others given their ease of spoofing
- Apply an understanding of how to recreate images from a biometric template



CSCI335 2D Game Development

Credit Hours: 3

This course will cover the conventional models and methodologies of computer game design and development. This course builds upon the introductory gaming course using 2D games and simulations. Lectures and hands-on exercises will stress game design, virtual reality simulations, and the evaluation of human play experiences. Prerequisite(s): CSCI231 and CSCI258

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop working 2D games using standard game design and storyboarding concepts.
- Apply interactive control via keyboards, mobile devices and connect.
- Apply 2D animation techniques.
- Apply 2D collision detection.



CSCI342 Adv ObjectOriented Programming**Credit Hours: 3**

This course continues exploring the tools and techniques required to perform object-oriented analysis in an effort to design and build reusable, extensible, efficient, and maintainable software. Design patterns, UML, and object-oriented techniques will be utilized throughout the development lifecycle to design, develop, and test software that meets functional and non-functional requirements. Prerequisite(s): CSCI312

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop software using appropriate design patterns, including the singleton, memento, observer, and factory patterns.
- Implement maintainable systems that can evolve by using inheritance, interfaces, and polymorphism.
- Choose and use the appropriate data structures and algorithms in the construction of programs.
- Develop and implement use appropriate software testing strategies.
- Demonstrate the ability to design and document non-trivial software systems using UML and object-oriented terminology to convey abstract ideas and concepts.
- Utilize security tools and methodologies to address security requirements in the design phase of a software development project that identifies threats and reduces the attack surface of the system under development.



CSCI370 3D Game Development

Credit Hours: 3

This course will extend the concepts learned and applied in Game Design (CISP335) to the 3D environment. Topics will include advanced design and architecture, creation of 3D game and simulation development, and interactive virtual environments. Lecture and hand-on exercises will stress application creation and execution in a 3D context. Prerequisite(s): CSCI335

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Develop 3D games using a variety of animation and collision detection.
- Utilize models, camera, shaders and particle systems in games.
- Demonstrate adding 3D assets to 3D environments.
- Examine the complexity of message passing in games.
- Explain the use of TCP/UDP packet protocols for messaging in games played on a network.



GPMT287 Principles of Project Mgmt**Credit Hours: 3**

Students gain an essential understanding of the discipline and approach to the management of projects in a global environment. Topics explained include project definition, resource planning, project scheduling with Gantt charts, project control, as well as planning and scheduling with limited resources. Topics are explored from both a quantitative and qualitative perspective. Students learn and utilize project software throughout the course. Various techniques used in planning, scheduling, ROI, and controlling projects will be explored and applied through the use of simulations. A \$65.00 simulation access fee is charged in this course. Prerequisite(s): HLTH211, MGMT211 or CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Course Learning Outcomes
- Discuss the role of the Project Management Institute (PMI).
 - Role of the project manager as outlined by PMI
 - Ethical and social responsibilities outlined by PMI
- Examine a project life cycle and be able to differentiate its components.
- Describe and present a project initiation strategy which includes:
 - project selection
 - selection of project manager
 - project organization
 - project planning
 - Scope definition
 - negotiation and conflict resolution strategies
- Discuss project implementation strategies by preparing
 - budgeting/costs estimates
 - schedules
 - resource allocation
 - information systems
 - project control processes
- Summarize project termination procedures including
 - project auditing and evaluation
 - project termination
 - handling unresolved issues
 - assessing multicultural issues
- Describe the risk management process and procedures

- o Risk evaluation
- o Risk matrix



IAAS221 Security Foundations**Credit Hours: 3**

This course will provide an overview of information security from both the perspectives of the organization and that of personal computing. Topics include security management practices, physical security, security architecture, business continuity and disaster recovery planning, access control systems, security controls, cryptography, telecommunications and network security, operations security, law and ethics, and personal computer security. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- discuss effective security management practices.
- discuss the rationale and methods for controlling access to network systems.
- describe cryptography and symmetric & asymmetric key cryptography
- discuss security models and operations security.
- discuss software application and database security issues.
- discuss disaster recovery, business continuity, and legal & ethical issues.
- describe the threats to physical security.
- discuss topics relevant to security for personal computers.



IAAS224 Implementing Network Security

Credit Hours: 3

This course will provide hands-on, practical techniques for implementing security in today's environment. The current risks and threats to an organization's data, along with methods of safeguarding this data, will be discussed. Students will build on previous knowledge to implement basic security services on any type of computer network. This course prepares students for the CompTIA Security+ exam. Prerequisite(s): NETW141

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe the security purpose and function of network devices and technologies.
- Explain risk related concepts, and the importance of incident response procedures, business continuity plans, and disaster recovery plans.
- Identify different types of threats and vulnerabilities, as well as defense techniques.
- Carry out procedures to establish application, data, and host security.
- Implement authentication, authorization, and access control services.
- Apply various cryptographic tools."



IAAS245 Disaster Recovery**Credit Hours: 3**

This course will provide an overview of characteristics of disasters, their impact on population, infrastructure, economy, and disaster management cycle. Topics include the role, organization, and management of business continuity planning in planning for and surviving the impact of disaster, continuing to operate to serve clients or customers, and rapidly recovering to full operations. Other areas of interest include the business impact analysis process, how to manage it, and how to use the analysis as the first step in business continuity plan development.

Prerequisite(s): IAAS221 or IAAS224

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe the information security lifecycle,
- Explain the issues related to Prevention, Detection, and Response,
- Justify the preferred approach for handling an incident
- Explain cryptography, business continuity, and disaster recovery from a business perspective,
- Make the decisions related to company data security and explain the impact of those decisions on an organization,
- Decide what the most appropriate solution for a company is - building internal capabilities vs. outsourcing.
- Develop, either individually or in a team, a DRP.



IAAS256 Windows Digital Forensics**Credit Hours: 3**

This course surveys the technical knowledge of the Windows operating system that any digital forensic analyst should know to examine digital media. The course focuses on collecting and analyzing data from a Windows operating system to provide information that can be used for both civil and criminal litigation. User based activity and software/hardware artifacts are analyzed along with acquisition of digital media in a Windows based environment. Co-requisite(s): NETW141 Prerequisite(s): IAAS221 and NETW101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe Windows supported file systems (i.e.: Fat, NTFS, exFat)
- Discuss Windows processes and what they mean to a forensic examination.
- Identify, secure and image Windows based systems (PC's, Physical and Virtual servers).
- Identify and describe Windows forensics artifacts and what they mean to a forensic examination.
- Research and discuss new and updated applications and what they mean to a forensic examination.
- Evaluate Hardware and software required to build a digital forensics lab used for Windows investigations.
- Perform a basic forensic examination on digital media of a Windows system.



IAAS321 Securing the Infrastructure**Credit Hours: 3**

This course covers those skills necessary to further protect the network infrastructure. Topics covered include advanced TCP/IP, IPSec, securing routers and Windows and Linux computers. Also covered are contingency planning and understanding attack techniques. Upon successful completion of this course, students will have the prerequisite skills to take applicable certification testing. Recommended Prerequisite(s): NETW217 Prerequisite(s): IAAS224, NETW101, and NETW152 or NETW241

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Analyze advanced TCP/IP within a Windows computer.
- Implement and examine IPSec configurations.
- Secure access to Linux services & harden Linux.
- Implement Windows security configuration tools and secure Windows resources.
- Configure router security and logging.
- Analyze contingency planning goals.
- Identify the attack points on the Internet.
- Discuss attack techniques and methods to protect against them.



IAAS322 Network Defense/Countermeasure**Credit Hours: 3**

This course covers the technologies required to defend a network. Topics covered include implementing of firewalls, VPNs and intrusion detection systems, performing a risk analysis, and managing security policies. Upon successful completion of this course, students will have the prerequisite skills to take applicable certification testing. Recommended Prerequisite(s): NETW217 Prerequisite(s): IAAS224, NETW101 and NETW151 or NETW220

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- describe the concepts of defensive technologies in creating a layered defense.
- create a firewall policy based on provided statements.
- apply firewall concepts and knowledge to a scenario.
- configure and examine a complete VPN environment.
- examine the principles of intrusion detection analysis.
- describe the process of risk analysis.
- examine a detailed, complete security policy template.



NETW101 PC Operating Systems

Credit Hours: 3

This course is a general overview of microcomputer operating systems. A basic understanding of computers and the use of Windows is assumed. Emphasis is on operating system concepts, management, maintenance, and resources required. Topics covered include installing and maintaining operating systems, creation of batch files or scripts, customizing and troubleshooting a computer system, and managing files and disks. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems. Recommended Prerequisite(s): CISP100

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe computer operating systems including: processes, multi-programming, the development of operating systems.
- Demonstrate how to use essential text-based commands, and command-line interface including file and disk management:
 - batch file use, customizing and configuring a system, managing memory.
- Demonstrate how to perform the following with a Graphical User Interface: file and disk management; troubleshooting;
- customizing the environment; launching batch files and DOS sessions from windows environment; run system utilities.
- Describe the procedure to install and upgrade Microsoft Windows operating systems.
- Illustrate how to maintain a Windows installation by installing devices, running system utilities such as defrag and
 - backup, and installing patches and software.
- Describe several operating systems currently used on PC's, including variations of Windows, LINUX, Macintosh, or others.
- Demonstrate troubleshooting techniques to solve operating system problems.
- Illustrate basic networking concepts and troubleshooting techniques.
- Demonstrate basic security concepts and troubleshooting techniques.
- Describe mobile devices and their effects on current trends in today's operating systems.
- Describe virtualization as it relates to operating systems



NETW141 MS Client and Server OS

Credit Hours: 3

This course covers installing, configuring, and administering Microsoft Windows client and server operating systems. The course includes extensive use of hands-on exercises. Co-requisite(s): NETW101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss
 - Features of Windows client and server operating systems
 - Deploying Windows 7 in the enterprise
 - Basics of IP addressing and network connectivity
 - Components of Active Directory
 - Remote Access
- Install, upgrade, and configure Windows operating systems
- Use the Microsoft Management Console and Control Panel to create users and groups
- Manage disk storage and the NTFS
- Configure hardware and applications
- Configure security policies
- Manage access to network resources
- Configure Remote Desktop and Remote Assistance
- Monitor system performance
- Configure backup options



NETW151 Cisco Networking Fundamentals**Credit Hours: 3**

(4 contact hours) This course introduces students to 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. Students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Lab work is designed to simulate real-world networking. This course is the first of four networking courses to prepare students for the Cisco Certified Network Associate (CCNA) certification exam. Co-requisite(s): MATH125 and NETW101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify and describe the role of protocol layers in data networks.
- Explain fundamental Ethernet concepts such as media, services, and operations.
- Identify and describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments.
- Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks.
- Explain fundamental Ethernet concepts such as media, services, and operations.
- Build a simple Ethernet network using routers and switches.
- Perform basic router and switch configurations using command-line interface.



NETW152 Cisco Routing & Switching**Credit Hours: 3**

(4 contact hours) This course 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. Students will learn 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. Lab work is designed to simulate real-world networking. This course is the second of four networking courses to prepare students for the CCNA certification exam. Prerequisite(s): NETW151

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Configure and troubleshoot basic operations of a small switched network.
- Identify and describe enhanced switching technologies such as VLANs, VLAN Trunking Protocol (VTP), Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Protocol (PVSTP), and 802.1q.
- Identify and describe the purpose, nature, and operations of a router, routing tables, and the route lookup process.
- Identify and describe dynamic routing protocols, distance vector routing protocols, and link-state routing protocols.
- Configure and troubleshoot basic operations of routers in a small routed network.
- Configure and troubleshoot VLANs and inter-VLAN routing.
- Configure, monitor, and troubleshoot ACLs for IPv4 and IPv6.
- Configure and troubleshoot NAT operations.



NETW201 PC Maintenance and Management**Credit Hours: 3**

This course introduces the student to a PC, its components, common troubleshooting techniques, and adjustments. Additional topics include PC and network security methods, computer hardware and software package selection, and managing the PCs within a company--keeping track of all serial numbers, warranties, and software licensing utilizing either a spreadsheet or database. This course is 90% hands-on. This course will not teach students to repair all problems; not all problems can be fixed. This course will also help prepare the student to take the CompTIA A+ examination. Prerequisite(s): NETW101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Examine and define PC components, common troubleshooting techniques and adjustments.
- Analyze symptoms to identify problems.
- Demonstrate general preventative maintenance and repair on a PC including:
 - Replacing/upgrading video and sound cards
 - Replacing power supplies, motherboards and various other components
 - Upgrading the PC's RAM and hard drive
- Evaluate selection and installation of computer hardware and software packages.
- Create and manage an interactive hardware listing which will keep track of all PCs, hardware and the software used on each PC within a company.
- Identify, install and configure laptop and portable devices.
- Demonstrate proficiency with installation and configuration of printers and scanners.
- Demonstrate problem solving techniques by troubleshooting software and its interaction with hardware.



NETW217 UNIX Operating Systems

Credit Hours: 3

This course covers operating system concepts in the UNIX environment. Topics include terminology, UNIX features and commands, UNIX system administration, and UNIX as a network server. Prerequisite(s):NETW101

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe the UNIX architecture.
- Describe processes and threads, coordination and synchronization, scheduling, interrupts, and deadlock.
- Construct UNIX commands to control hardware functions.
- Describe memory management, input and output, and file systems.
- Describe UNIX shell programs and processes.
- Explain how UNIX is used as an operating system to control multi-user computer networks.
- Compare the strengths and weaknesses of UNIX as a network server.
- Describe how to perform system administration in a UNIX environment.
- Demonstrate problem-solving skills by troubleshooting operating system problems.



NETW220 Data Communications & Networks**Credit Hours: 3**

This course focuses on fundamentals of data communications systems and networks. Topics to be covered will include communications hardware and software, data transmission, protocols to include the LDAP, the OSI Reference Model, local area networks, wide area networks, and the Internet. Prerequisite(s): MATH125 and NETW101 or CISP111

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss the terminology, concepts, and capabilities of data communication systems.
- Compare different data transmission media and discuss the factors that influence the choice of a medium.
- Compare and contrast network topologies.
- Discuss the uses of the Internet.
- Explain data flow, transmission error sources, and methods of error detection and correction.
- Describe the functions of the seven layers of the OSI Reference Model.
- Discuss networking hardware, including: hubs, bridges, routers, modems, CSU/DSUs.
- Discuss data security issues.
- Demonstrate written proficiency by preparing a research paper on data communications topics.



NETW235 UNIX/Linux Server Admin**Credit Hours: 3**

This course builds on previous experience in a UNIX environment to provide students with all the standard and advanced techniques necessary to set up and maintain a secure, effective Linux environment. Emphasis will be on using UNIX/Linux as a network server. Students will create and maintain users and groups, set up web, mail, and FTP services, and perform other UNIX/Linux server administration tasks. Prerequisite(s): NETW217

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Create and maintain users and groups.
- Create Web services.
- Create Mail services.
- Create FTP services.
- Demonstrate Unix server administration tasks.



NETW241 MS Implement Network Infrastr**Credit Hours: 3**

This course covers installing and configuring network protocols and services, such as DHCP, DNS, WINS, Remote Access Services, routing, Network Address Translation, and Certificate Services in a Windows Server environment. The course includes extensive use of hands-on exercises. Prerequisite(s): NETW141

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss and compare IPv4 and IPv6 addressing.
- Configure Dynamic Host Configuration Protocol (DHCP).
- Configure name resolution using Domain Name System (DNS).
- Manage file server resources.
- Configure Distributed File System (DFS).
- Set up print services.
- Configure Routing and Remote Access Services (RRAS), including routing and Virtual Private Network (VPN) access.
- Configure Network Policy Server (NPS).
- Implement Windows Server Update Services (WSUS).



NETW243 MS Administer SQL Server**Credit Hours: 3**

The course covers installation, configuration, administration, and troubleshooting the Microsoft SQL Server database management system. The course includes extensive use of hands-on exercises. Prerequisite(s): NETW141

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe basic relational database concepts.
- Install Microsoft SQL Server.
- Implement login security and database permissions.
- Demonstrate the use of administrative tools to create and administer SQL Server databases.
- Discuss database backup strategy and replication technique.
- Monitor SQL Server performance.



NETW251 Cisco Scaling Networks**Credit Hours: 3**

(4 contact hours) This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. Students will learn to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Lab work is designed to simulate real-world networking. This course is the third of four networking courses to prepare students for the CCNA certification exam. Prerequisite(s): NETW152

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Configure and troubleshoot DHCP and DNS operations for IPv4 and IPv6.
- Identify and describe the operations and benefits of the Spanning Tree Protocol (STP).
- Configure and troubleshoot STP operations.
- Identify and describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP).
- Configure and troubleshoot VTP, STP, and RSTP.
- Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6.
- Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6.
- Manage Cisco IOS® Software licensing and configuration files.



NETW252 Cisco Connecting Networks**Credit Hours: 3**

(4 contact hours) This course discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network. Lab work is designed to simulate real-world networking. This course is the last of four networking courses to prepare students for the CCNA certification exam. Prerequisite(s): NETW251

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Identify and describe different WAN technologies and their benefits.
- Identify and describe the operations and benefits of virtual private networks (VPNs) and tunneling.
- Configure and troubleshoot serial and broadband connections.
- Configure and troubleshoot IPsec tunneling operations.
- Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow.
- Design network architectures, including virtualization and collaboration technologies.
- Demonstrate problem solving techniques in troubleshooting network issues.



NETW311 Cisco Networking Adv Routing**Credit Hours: 4**

(5 contact hours) This course introduces advanced routing concepts. Students will be introduced to the knowledge and skills necessary to use advanced IP addressing and routing in implementing scalable and secure Cisco ISR routers connected to LANs and WANs. Topics include: EIGRP, OSPF, and BGP routing protocols; route redistribution; IPV4 & IPV6 coexistence; and policy based routing. Lab work is designed to simulate real-world networking. This course prepares students for the CCNP ROUTE (642-902) certification exam. Prerequisite(s): NETW252 or CCNA Certification

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Plan complex network requirements and design models for implementing advanced routing services in an enterprise network.
- Implement EIGRP and OSPF in an enterprise network.
- Exchange routing information between interior gateway protocols.
- Implement IPv6 in an enterprise network.
- Describe a basic implementation for branch office and mobile worker connectivity.
- Implement BGP to allow an enterprise network to connect to an ISP.
- Implement various mechanisms for controlling routing updates and traffic.



NETW312 Cisco Networking Secure WANs**Credit Hours: 4**

5 contact hours) This course introduces network device security. Students will be introduced to the knowledge and skills necessary to install, secure, troubleshoot and monitor network devices and their associated networks to maintain integrity, confidentiality and availability of data and devices. Topics include: secure remote access, Implementing AAA, Site-to-Site Virtual Private Networks (VPNs), Cisco IOS Firewall/IPS features, symmetric/asymmetric encryption, and strategies to mitigate Layer 2/3 attacks. Lab work is designed to simulate real-world networking. This course prepares students for the Cisco IINS (640-553) certification exam. Prerequisite(s): NETW252 or CCNA Certification

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe the security threats facing modern network infrastructures.
- Secure network device access and implement AAA on network devices.
- Mitigate threats to networks using ACLs.
- Implement the Cisco IOS firewall and IPS feature sets.
- Implement site-to-site IPSec VPNs.
- Develop and administer effective security policies.
- Implement secure network management and reporting.
- Mitigate common Layer 2 attacks.



NETW325 Wireless Networking & Security**Credit Hours: 3**

This course covers the wireless technologies in the networking industry. Topics covered will include planning, installing, configuring, and securing wireless networks. Physical-layer standards and wireless hardware will be examined. Hands-on exercises will reinforce the implementation and troubleshooting of wireless networks. Prerequisite(s): NETW101, and NETW151 or NETW220, and IAAS221 or IAAS224

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe wireless networking concepts.
- Discuss wireless networking standards.
- Configure wireless networking devices including Access Points and NICs.
- Design wireless networking topologies.
- Implement security in a wireless network.
- Troubleshoot and monitor a wireless network.
- Describe emerging wireless technologies.



NETW326 IP Telephony**Credit Hours: 3**

This course is a survey of the basics of converged IP communications networks. It provides exposure to technologies common to many IP Telephony implementations, then focuses on the Cisco router based CallManager Express (CME) technology to illustrate situations common to small business environments. Specifically, students will learn Cisco CallManager Express (CME) architecture, components, functionality, and features as they configure Cisco routers, switches, and IP phones. They will also learn Voice over IP (VoIP) and Quality of Service (QoS) technologies and apply them in a Cisco CME environment. Upon successful completion of this course, students will have the prerequisite skills to take applicable certification testing.

Prerequisite(s): NETW252 or CCNA Certification

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Demonstrate proficiency with the Call Manager Express.
- Connect to a PSTN network.
- Connect from one router across a WAN to another router using CME.
- Connect from one CME enabled router to another CME enabled router.



NETW341 MS Plan & Implement Active Dir**Credit Hours: 3**

This course covers planning, implementing, and administering the Windows Server directory services infrastructure. Hands-on exercises are used to reinforce concepts. Prerequisite(s): NETW241

Learning Outcomes:

Upon successful completion of this course, the student will be able to:

- Describe the purpose of and relationship between components of Active Directory.
- Explain operations master roles.
- Create components of Active Directory.
- Delegate administrative control of objects in Active Directory.
- Apply Group Policy: to manage user environments, to assign and publish software.