COURSES

ACADEMIC RELATED (ACA)

ACA-115 Success & Study Skills **Lec 0 Lab 2 Clinic 0 Credit 1**
This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

Co-Requisites: None
Pre-Requisites: None

ACA-122 College Transfer Success **Lec 0 Lab 2 Clinic 0 Credit 1**
This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions.

Co-Requisites: None
Pre-Requisites: None
Competencies: Develop a strategic plan for completing community college academic goals, including certificates, diplomas, and/or associate degrees. Develop a strategic plan for transferring to a university and preparing for a new career. Identify the rights and responsibilities of transfer students under the Comprehensive Articulation Agreement (CAA), including Universal General Education Transfer Component (UGETC) designated courses, the Transfer Assured Admissions Policy (TAAP), and the CAA appeals process. Evaluate learning strategies, including note-taking, test-taking, information processing, time management, and memorization techniques, and identify strategies for improvement. Identify essential college resources, including financial aid, advising, registration, tutoring, library services, computer labs, and counseling services and recognize the importance of these resources on student success. Identify essential college policies and procedures, including academic integrity such as avoiding plagiarism' calculating a GPA, and maintaining satisfactory academic progress for financial eligibility and/or good academic standing.

ACCOUNTING (ACC)

ACC-115 College Accounting **Lec 3 Lab 2 Clinic 0 Credit 4**
This course introduces basic accounting principles for a business. Topics include the complete accounting cycle with end-of-period statements, bank reconciliation, payrolls, and petty cash. Upon completion, students should be able to demonstrate an understanding of accounting principles and apply those skills to a business organization.

Co-Requisites: None
Pre-Requisites: None

ACC-120 Principles of Financial Accounting **Lec 3 Lab 2 Clinic 0 Credit 4**
This course introduces business decision-making using accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations.

Co-Requisites: None
Pre-Requisites: None

ACC-121 Principles of Managerial Accounting **Lec 3 Lab 2 Clinic 0 Credit 4**
This course includes a greater emphasis on managerial and cost accounting skills. Emphasis is placed on managerial accounting concepts for external and internal analysis, reporting and decision-making. Upon completion, students should be able to analyze and interpret transactions relating to managerial concepts including product-costing systems.

Co-Requisites: None
Pre-Requisites: ACC-120

ACC-129 Individual Income Taxes **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces the relevant laws governing individual income taxation. Topics include tax law, electronic research and methodologies, and the use of technology for preparation of individual income tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various individual tax forms.

Co-Requisites: None
Pre-Requisites: None

ACC-130 Business Income Taxes **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces the relevant laws governing business and fiduciary income taxes. Topics include tax law relating to business organizations, electronic research and methodologies, and the use of technology for the preparation of business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various business tax forms.

Co-Requisites: None
Pre-Requisites: ACC-129 - Local

ACC-140 Payroll Accounting **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.

Co-Requisites: None
Pre-Requisites: One: ACC-115 or ACC-120

ACC-150 Accounting Software Applications **Lec 1 Lab 3 Clinic 0 Credit 2**
This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to accurately solve accounting problems.

Co-Requisites: None
Pre-Requisites: One: ACC-115 or ACC-120

ACC-220 Intermediate Accounting I **Lec 3 Lab 2 Clinic 0 Credit 4**
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analysis of balance sheet components. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.

Co-Requisites: None
Pre-Requisites: ACC-120

ACC-221 Intermediate Accounting II **Lec 3 Lab 2 Clinic 0 Credit 4**
This course is a continuation of ACC 220. Emphasis is placed on special problems which may include leases, bonds, investments, ratio analyses, present value applications, accounting changes, and corrections. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

Co-Requisites: None
Pre-Requisites: ACC-220

ANTHROPOLOGY (ANT)

ANT-210 General Anthropology **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology.

Co-Requisites: None
Pre-Requisites: None

ANT-220 Cultural Anthropology **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed.

Co-Requisites: None
Pre-Requisites: None

ANT-230 Physical Anthropology **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the scientific study of human evolution and adaptation. Emphasis is placed on evolutionary theory, population genetics, biocultural adaptation and human variation, as well as non-human primate evolution, morphology, and behavior. Upon

completion, students should be able to demonstrate an understanding of the biological and cultural processes which have resulted in the formation of the human species.

Co-Requisites: None
Pre-Requisites: None

ANT-230A Physical Anthropology Lab Lec 0 Lab 2 Clinic 0 Credit 1
This course provides laboratory work that reinforces the material presented in ANT 230. Emphasis is placed on laboratory exercises which may include fossil identification, genetic analysis, skeletal comparisons, forensics, computer simulations, and field observations. Upon completion, students should be able to demonstrate an understanding of the analytical skills employed by anthropologists in the study of primate evolution and variation.

Co-Requisites: ANT-230
Pre-Requisites: None

ART (ART)

ART-111 Art Appreciation Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media.

Co-Requisites: None
Pre-Requisites: None

ART-114 Art History Survey I Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development.

Co-Requisites: None
Pre-Requisites: None

ART-115 Art History Survey II Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development.

Co-Requisites: None
Pre-Requisites: None

ART-121 Two-Dimensional Design Lec 0 Lab 6 Clinic 0 Credit 3
This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art.

Co-Requisites: None
Pre-Requisites: None

ART-131 Drawing I Lec 0 Lab 6 Clinic 0 Credit 3
This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes.

Co-Requisites: None
Pre-Requisites: None

ART-260 Photography Appreciation Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the origins and historical development of photography. Emphasis is placed on the study of composition and history of photography as an art form. Upon completion, students should be able to recognize and produce, using color transparencies, properly exposed, well-composed photographs.

Co-Requisites: None
Pre-Requisites: None

ART-261 Photography I **Lec 0 Lab 6 Clinic 0 Credit 3**
This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition.

Co-Requisites: None
Pre-Requisites: None

ART-264 Digital Photography I **Lec 0 Lab 6 Clinic 0 Credit 3**
This course introduces digital photographic equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition.

Co-Requisites: None
Pre-Requisites: None

ART-265 Digital Photography II **Lec 0 Lab 6 Clinic 0 Credit 3**
This course provides exploration of the concepts and processes of photo manipulation through complex composite images, special effects, color balancing and image/text integration. Emphasis is placed on creating a personal vision and style. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches.

Co-Requisites: None
Pre-Requisites: ART-264

ART-266 Videography I **Lec 0 Lab 6 Clinic 0 Credit 3**
This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding, and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques.

Co-Requisites: None
Pre-Requisites: None

ART-267 Videography II **Lec 0 Lab 6 Clinic 0 Credit 3**
This course is designed to provide a framework for the production of a long-term video project. Emphasis is placed on realization of the unique creative vision. Upon completion, students should be able to produce a thematically coherent, edited video with sound and titling.

Co-Requisites: None
Pre-Requisites: ART-266

ASTRONOMY (AST)

AST-111 Descriptive Astronomy **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them.

Co-Requisites: None
Pre-Requisites: None

AST-111A Descriptive Astronomy Lab **Lec 0 Lab 2 Clinic 0 Credit 1**
The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them.

Co-Requisites: AST-111
Pre-Requisites: None

AST-151 General Astronomy I **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the science of modern astronomy with a concentration on the solar system. Emphasis is placed on the history and physics of astronomy and an introduction to the solar system, including the planets, comets, and meteors. Upon completion, students should be able to demonstrate a general understanding of the solar system.

Co-Requisites: None
Pre-Requisites: None

AST-151A General Astronomy I Lab **Lec 0 Lab 2 Clinic 0 Credit 1**
The course is a laboratory to accompany AST 151. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 151 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of the solar system.

Co-Requisites: AST-151
Pre-Requisites: None

AST-152 General Astronomy II **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is a continuation of AST 151 with primary emphasis beyond the solar system. Topics include the sun, stars, galaxies, and the larger universe, including cosmology. Upon completion, students should be able to demonstrate a working knowledge of astronomy.

Co-Requisites: None
Pre-Requisites: AST-151

AST-152A General Astronomy II Lab **Lec 0 Lab 2 Clinic 0 Credit 1**
The course is a laboratory to accompany AST 152. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 152 and which provide practical experience. Upon completion, students should be able to demonstrate a working knowledge of astronomy.

Co-Requisites: AST-152
Pre-Requisites: AST-151

AUTOMATION & ROBOTICS (ATR)

ATR-215 Sensors and Transducers **Lec 2 Lab 3 Clinic 0 Credit 3**
This course provides the theory and application of sensors typically found in an automated manufacturing system. Topics include physical properties, operating range, and other characteristics of numerous sensors and transducers used to detect temperature, pressure, position, and other desired physical parameters. Upon completion, students should be able to properly interface a sensor to a PLC, PC, or process control system.

Co-Requisites: None
Pre-Requisites: None

ATR-280 Robotic Fundamentals **Lec 3 Lab 2 Clinic 0 Credit 4**
This course covers application, programming, and maintenance fundamentals for robotic devices. Emphasis is placed on terminology, problem solving, robotic systems controls, and hands-on projects. Upon completion, students should be able to apply basic concepts in application, programming, and robotic control systems.

Co-Requisites: None
Pre-Requisites: None

AUTOMOTIVE BODY REPAIR (AUB)

AUB-111 Painting & Refinishing I **Lec 2 Lab 6 Clinic 0 Credit 4**
This course introduces the proper procedures for using automotive refinishing equipment and materials in surface preparation and application. Topics include federal, state, and local regulations, personal safety, refinishing equipment and materials, surface preparation, masking, application techniques, and other related topics. Upon completion, students should be able to identify and use proper equipment and materials in refinishing following accepted industry standards.

Co-Requisites: None
Pre-Requisites: None

AUB-112 Painting & Refinishing II **Lec 2 Lab 6 Clinic 0 Credit 4**
This course covers advanced painting techniques and technologies with an emphasis on identifying problems encountered by the refinishing technician. Topics include materials application, color matching, correction of refinishing problems, and other related topics. Upon completion, students should be able to perform spot, panel, and overall refinishing repairs and identify and correct refinish problems.

Co-Requisites: None
Pre-Requisites: AUB-111

AUB-114 Special Finishes **Lec 1 Lab 2 Clinic 0 Credit 2**
This course introduces multistage finishes, custom painting, and protective coatings. Topics include base coats, advanced intermediate coats, clear coats, and other related topics. Upon completion, students should be able to identify and apply specialized finishes based on accepted industry standards.

Co-Requisites: None
Pre-Requisites: AUB-111

AUB-121 Non-Structural Damage I **Lec 1 Lab 4 Clinic 0 Credit 3**
This course introduces safety, tools, and the basic fundamentals of body repair. Topics include shop safety, damage analysis, tools and equipment, repair techniques, materials selection, materials usage, and other related topics. Upon completion, students should be able to identify and repair minor direct and indirect damage including removal/repairing/replacing of body panels to accepted standards.

Co-Requisites: None
Pre-Requisites: None

AUB-122 Non-Structural Damage II **Lec 2 Lab 6 Clinic 0 Credit 4**
This course covers safety, tools, and advanced body repair. Topics include shop safety, damage analysis, tools and equipment, advanced repair techniques, materials selection, materials usage, movable glass, and other related topics. Upon completion, students should be able to identify and repair or replace direct and indirect damage to accepted standards including movable glass and hardware.

Co-Requisites: None
Pre-Requisites: None

AUB-131 Structural Damage I **Lec 2 Lab 4 Clinic 0 Credit 4**
This course introduces safety, equipment, structural damage analysis, and damage repairs. Topics include shop safety, design and construction, structural analysis and measurement, equipment, structural glass, repair techniques, and other related topics. Upon completion, students should be able to analyze and perform repairs to a vehicle which has received light/moderate structural damage.

Co-Requisites: None
Pre-Requisites: None

AUB-132 Structural Damage II **Lec 2 Lab 6 Clinic 0 Credit 4**
This course provides an in-depth study of structural damage analysis and repairs to vehicles that have received moderate to heavy structural damage. Topics include shop safety, structural analysis and measurement, equipment, structural glass, advanced repair techniques, structural component replacement and alignment, and other related topics. Upon completion, students should be able to analyze and perform repairs according to industry standards.

Co-Requisites: None
Pre-Requisites: AUB-131

AUB-136 Plastics & Adhesives **Lec 1 Lab 4 Clinic 0 Credit 3**
This course covers safety, plastic and adhesive identification, and the various repair methods of automotive plastic components. Topics include safety, identification, preparation, material selection, and the various repair procedures including refinishing. Upon completion, students should be able to identify, remove, repair, and/or replace automotive plastic components in accordance with industry standards.

Co-Requisites: None
Pre-Requisites: None

AUB-141 Mechanical & Electrical Components I **Lec 2 Lab 2 Clinic 0 Credit 3**
This course covers the basic principles of automotive mechanical and electrical components. Topics include personal and environmental safety and suspension and steering, electrical, brake, heating and air-conditioning, cooling, drive train, and restraint systems. Upon completion, students should be able to identify system components and perform basic system diagnostic checks and/or repairs according to industry standards.

Co-Requisites: None
Pre-Requisites: None

AUB-150 Automotive Detailing **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers the methods and procedures used in automotive detailing facilities. Topics include safety, engine, interior and trunk compartment detailing, buffing/polishing exterior surfaces, and cleaning and reconditioning exterior trim, fabrics, and surfaces. Upon completion, students should be able to improve the overall appearance of a vehicle.

Co-Requisites: None
Pre-Requisites: None

AUB-160 Body Shop Operations **Lec 1 Lab 0 Clinic 0 Credit 1**
This course introduces the day-to-day operations of autobody repair facilities. Topics include work habits and ethics, customer relations, equipment types, materials cost and control, policies and procedures, shop safety and liabilities, and other related topics. Upon completion, students should be able to understand the general operating policies and procedures associated with an autobody repair facility.

Co-Requisites: None
Pre-Requisites: None

AUB-162 Autobody Estimating **Lec 1 Lab 2 Clinic 0 Credit 2**
This course provides a comprehensive study of autobody estimating. Topics include collision damage analysis, industry regulations, flat-rate and estimated time, and collision estimating manuals. Upon completion, students should be able to prepare and interpret a damage report.

Co-Requisites: None
Pre-Requisites: None

AUTOMOTIVE (AUT)

AUT-116 Engine Repair **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

Co-Requisites: None
Pre-Requisites: None

AUT-116A Engine Repair Lab **Lec 0 Lab 3 Clinic 0 Credit 1**
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

Co-Requisites: AUT-116
Pre-Requisites: None

AUT-141 Suspension & Steering Systems **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

Co-Requisites: None
Pre-Requisites: None

AUT-151 Brake Systems **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

Co-Requisites: None
Pre-Requisites: None

AUT-163 Advanced Automotive Electricity **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

Co-Requisites: None
Pre-Requisites: TRN-120

AUT-181 Engine Performance 1 Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

Co-Requisites: None
Pre-Requisites: None

AUT-212 Auto Shop Management Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the principles of management essential to decision-making, communication, authority, and leadership. Topics include shop supervision, shop organization, customer relations, cost effectiveness and work place ethics. Upon completion, students should be able to describe basic automotive shop operation from a management standpoint.

Co-Requisites: None
Pre-Requisites: None

AUT-221 Automatic Transmissions/Transaxles Lec 2 Lab 3 Clinic 0 Credit 3
This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

Co-Requisites: None
Pre-Requisites: None

AUT-231 Manual Transmissions/Transaxles/Drive Trains Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

Co-Requisites: None
Pre-Requisites: None

AUT-281 Advanced Engine Performance Lec 2 Lab 2 Clinic 0 Credit 3
This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

Co-Requisites: None
Pre-Requisites: None

BIOLOGY (BIO)

BIO-111 General Biology I Lec 3 Lab 3 Clinic 0 Credit 4
This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, molecular and cellular biology, metabolism and energy transformation, genetics, evolution, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels.

Co-Requisites: None
Pre-Requisites: None

BIO-112 General Biology II Lec 3 Lab 3 Clinic 0 Credit 4
This course is a continuation of BIO 111. Emphasis is placed on organisms, evolution, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels.

Co-Requisites: None
Pre-Requisites: BIO-111

BIO-140 Environmental Biology Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues.

Co-Requisites: None
Pre-Requisites: None

BIO-140A Environmental Biology Lab **Lec 0 Lab 3 Clinic 0 Credit 1**
This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues.

Co-Requisites: BIO-140
Pre-Requisites: None

BIO-160 Introductory Life Science **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces scientific and biological concepts. Topics include basic chemistry, cell structure and function, cell division, basic genetic concepts, anatomical terminology, and metric-English measurements and conversions. Upon completion, students should be able to demonstrate an understanding of basic chemistry, cell biology, genetic concepts; anatomical terminology; and metric-English measurements and conversions.

Co-Requisites: None
Pre-Requisites: None

BIO-163 Basic Anatomy and Physiology **Lec 4 Lab 2 Clinic 0 Credit 5**
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships.

Co-Requisites: None
Pre-Requisites: None

BIO-168 Anatomy and Physiology I **Lec 3 Lab 3 Clinic 0 Credit 4**
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, and nervous systems and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships.

Co-Requisites: None
Pre-Requisites: None

BIO-169 Anatomy and Physiology II **Lec 3 Lab 3 Clinic 0 Credit 4**
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships.

Co-Requisites: None
Pre-Requisites: BIO-168

BIO-175 General Microbiology **Lec 2 Lab 2 Clinic 0 Credit 3**
This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques.

Co-Requisites: None
Pre-Requisites: One: BIO-110, BIO-111, BIO-163, BIO-165, or BIO-168

BLUEPRINT READING (BPR)

BPR-111 Print Reading **Lec 1 Lab 2 Clinic 0 Credit 2**
This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

Co-Requisites: None
Pre-Requisites: None

BPR-135 Schematics & Diagrams Lec 2 Lab 0 Clinic 0 Credit 2
This course introduces schematics and diagrams used in a variety of occupations. Topics include interpretation of wiring diagrams, assembly drawings, exploded views, sectional drawings, and service manuals, specifications, and charts. Upon completion, students should be able to research and locate components and assemblies denoting factory specifications and requirements from service and repair manuals.

Co-Requisites: None
Pre-Requisites: None

BUSINESS (BUS)

BUS-110 Introduction to Business Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects.

Co-Requisites: None
Pre-Requisites: None

BUS-115 Business Law I Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the student to the legal and ethical framework of business. Contracts, negotiable instruments, the law of sales, torts, crimes, constitutional law, the Uniform Commercial Code, and the court systems are examined. Upon completion the student should be able to identify legal and ethical issues that arise in business decisions and the laws that apply to them.

Co-Requisites: None
Pre-Requisites: None

BUS-125 Personal Finance Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a study of individual and family financial decisions. Emphasis is placed on building useful skills in buying, managing finances, increasing resources, and coping with current economic conditions. Upon completion, students should be able to develop a personal financial plan.

Co-Requisites: None
Pre-Requisites: None

BUS-137 Principles of Management Lec 3 Lab 0 Clinic 0 Credit 3
This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management.

Co-Requisites: None
Pre-Requisites: None

BUS-151 People Skills Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the basic concepts of identity and communication in the business setting. Topics include self-concept, values, communication styles, feelings and emotions, roles versus relationships, and basic assertiveness, listening, and conflict resolution. Upon completion, students should be able to distinguish between unhealthy, self-destructive, communication patterns and healthy, non-destructive, positive communication patterns.

Co-Requisites: None
Pre-Requisites: None

BUS-153 Human Resource Management Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

Co-Requisites: None
Pre-Requisites: None

BUS-230 Small Business Management Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the challenges of entrepreneurship including the startup and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

Co-Requisites: None

Pre-Requisites: None

BUS-234 Training and Development Lec 3 Lab 0 Clinic 0 Credit 3
This course covers developing, conducting, and evaluating employee training with attention to adult learning principles. Emphasis is placed on conducting a needs assessment, using various instructional approaches, designing the learning environment, and locating learning resources. Upon completion, students should be able to design, conduct, and evaluate a training program.

Co-Requisites: None
Pre-Requisites: None

BUS-253 Leadership and Management Skills Lec 3 Lab 0 Clinic 0 Credit 3
This course includes a study of the qualities, behaviors, and personal styles exhibited by leaders. Emphasis is placed on coaching, counseling, team building, and employee involvement. Upon completion, students should be able to identify and exhibit the behaviors needed for organizational effectiveness.

Co-Requisites: None
Pre-Requisites: None

BUS-255 Organizational Behavior in Business Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the impact of different management practices and leadership styles on worker satisfaction and morale, organizational effectiveness, productivity, and profitability. Topics include a discussion of formal and informal organizations, group dynamics, motivation, and managing conflict and change. Upon completion, students should be able to analyze different types of interpersonal situations and determine an appropriate course of action.

Co-Requisites: None
Pre-Requisites: None

CYBER CRIME TECHNOLOGY (CCT)

CCT-110 Introduction to Cyber Crime Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces and explains the various types of offenses that qualify as cyber crime activity. Emphasis is placed on identifying cyber crime activity and the response to these problems from both the private and public domains. Upon completion, students should be able to accurately describe and define cyber crime activities and select an appropriate response to deal with the problem.

Co-Requisites: None
Pre-Requisites: None

CCT-121 Computer Crime Investigation Lec 3 Lab 2 Clinic 0 Credit 4
This course introduces the fundamental principles of computer crime investigation processes. Topics include crime scene/incident processing, information gathering techniques, data retrieval, collection and preservation of evidence, preparation of reports and court presentations. Upon completion, students should be able to identify cyber crime activity and demonstrate proper investigative techniques to process the scene and assist in case prosecution.

Co-Requisites: None
Pre-Requisites: None

CCT-240 Data Recovery Techniques Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces the unique skills and methodologies necessary to assist in the investigation and prosecution of cyber crimes. Topics include hardware and software issues, recovering erased files, overcoming encryption, advanced imaging, transient data, Internet issues and testimony considerations. Upon completion, students should be able to recover digital evidence, extract information for criminal investigation and legally seize criminal evidence.

Co-Requisites: None
Pre-Requisites: None

CCT-250 Network Vulnerabilities I Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces students to penetration testing, network vulnerabilities, and hacking. Topics include an overview of traditional network security, system hardening, and known weaknesses. Upon completion, students should be able to evaluate weaknesses of traditional and wireless network for the purpose of incident response, reconstruction, and forensic investigation.

Co-Requisites: None
Pre-Requisites: None

CHEMISTRY (CHM)

CHM-130 General, Organic, & Biochemistry Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts.

Co-Requisites: None
Pre-Requisites: None

CHM-130A General, Organic, & Biochemistry Lab Lec 0 Lab 2 Clinic 0 Credit 1
This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130.

Co-Requisites: CHM-130
Pre-Requisites: None

CHM-151 General Chemistry I Lec 3 Lab 3 Clinic 0 Credit 4
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152.

Co-Requisites: one: MAT-143, MAT-152, MAT-171, MAT-175, MAT-271
Pre-Requisites: None

CHM-152 General Chemistry II Lec 3 Lab 3 Clinic 0 Credit 4
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields.

Co-Requisites: None
Pre-Requisites: CHM-151

COMPUTER INFORMATION SYSTEMS (CIS)

CIS-110 Introduction to Computers Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems.

Co-Requisites: None
Pre-Requisites: None

CIS-111 Basic PC Literacy Lec 1 Lab 2 Clinic 0 Credit 2
This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

Co-Requisites: None
Pre-Requisites: None

CIS-115 Introduction to Programming and Logic Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to use top-down algorithm design and implement algorithmic solutions in a programming language.

Co-Requisites: None
Pre-Requisites: One Set: Set 1: DMA-010, DMA-020, DMA-030, and DMA-040 Set 2: DMA-025 and DMA-040 Set 3: MAT-121 Set 4: MAT-171 Set 5: MAT-003 Set 6: BSP-4003 Set 7: MAT-035

Competencies: Apply control structures. Apply top-down algorithmic design. Implement algorithmic solutions in a programming language.

CRIMINAL JUSTICE (CJC)

CJC-111 Introduction to Criminal Justice Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options.

Co-Requisites: None
Pre-Requisites: None

CJC-112 Criminology Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

Co-Requisites: None
Pre-Requisites: None

CJC-113 Juvenile Justice Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

Co-Requisites: None
Pre-Requisites: None

CJC-121 Law Enforcement Operations Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations.

Co-Requisites: None
Pre-Requisites: None

CJC-131 Criminal Law Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements.

Co-Requisites: None
Pre-Requisites: None

CJC-132 Court Procedure & Evidence Lec 3 Lab 0 Clinic 0 Credit 3
This course covers judicial structure/process/procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

Co-Requisites: None
Pre-Requisites: None

CJC-141 Corrections Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system.

Co-Requisites: None
Pre-Requisites: None

CJC-170 Critical Incident Mgmt Pub Safety Lec 3 Lab 0 Clinic 0 Credit 3
This course prepares the student to specialize in the direct response, operations, and management f critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/work place violence. Upon completion, the student should be able to identify and discuss managerial techniques legal issues, and response procedures to critical incidents.

Co-Requisites: None
Pre-Requisites: None

CJC-212 Ethics & Community Relations Lec 3 Lab 0 Clinic 0 Credit 3
This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

Co-Requisites: None
Pre-Requisites: None

CJC-213 Substance Abuse Lec 3 Lab 0 Clinic 0 Credit 3
This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities.

Co-Requisites: None
Pre-Requisites: None

CJC-214 Victimology Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims' roles, and current victim assistance programs.

Co-Requisites: None
Pre-Requisites: None

CJC-221 Investigative Principles Lec 3 Lab 2 Clinic 0 Credit 4
This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.

Co-Requisites: None
Pre-Requisites: None

CJC-222 Criminalistics Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence.

Co-Requisites: None
Pre-Requisites: None

CJC-223 Organized Crime Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the evolution of traditional and non-traditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.

Co-Requisites: None
Pre-Requisites: None

CJC-231 Constitutional Law Lec 3 Lab 0 Clinic 0 Credit 3
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and

other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.

Co-Requisites: None
Pre-Requisites: None

CJC-240 Law Enfor Mgt. & Supervis Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a study of the best known methods and practices of police leadership and management. Topics include the role of the manager in law enforcement, communications, time-management in law enforcement, managing problems, training and law enforcement productivity. Upon completion, students should be able to identify and discuss methods and practices capable of moving law enforcement agencies forward into the twenty-first century.

Co-Requisites: None
Pre-Requisites: None

COMMUNICATION (COM)

COM-120 Intro to Interpersonal Communication Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations.

Co-Requisites: None
Pre-Requisites: None

COM-140 Introduction to Intercultural Communication Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces techniques of cultural research, definitions, functions, characteristics, and impacts of cultural differences in public address. Emphasis is placed on how diverse backgrounds influence the communication act and how cultural perceptions and experiences determine how one sends and receives messages. Upon completion, students should be able to demonstrate an understanding of the principles and skills needed to become effective in communicating outside one's primary culture.

Co-Requisites: None
Pre-Requisites: None

COM-231 Public Speaking Lec 3 Lab 0 Clinic 0 Credit 3
This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support.

Co-Requisites: None
Pre-Requisites: 1: ENG-002, BSP-4002, or ENG-025

COSMETOLOGY (COS)

COS-111 Cosmetology Concepts I Lec 4 Lab 0 Clinic 0 Credit 4
This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

Co-Requisites: COS-112
Pre-Requisites: None

COS-112 Salon I Lec 0 Lab 24 Clinic 0 Credit 8
This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

Co-Requisites: COS-111
Pre-Requisites: None

COS-113 Cosmetology Concepts II **Lec 4 Lab 0 Clinic 0 Credit 4**
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-114 Salon II **Lec 0 Lab 24 Clinic 0 Credit 8**
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-115 Cosmetology Concepts III **Lec 4 Lab 0 Clinic 0 Credit 4**
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-116 Salon III **Lec 0 Lab 12 Clinic 0 Credit 4**
This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-117 Cosmetology Concepts IV **Lec 2 Lab 0 Clinic 0 Credit 2**
This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-118 Salon IV **Lec 0 Lab 21 Clinic 0 Credit 7**
This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-223 Contemp Hair Coloring **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers basic color concepts, hair coloring problems, and application techniques. Topics include color theory, terminology, contemporary techniques, product knowledge, and other related topics. Upon completion, students should be able to identify a clients color needs and safely and competently perform color applications and correct problems.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-240 Contemporary Design **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers methods and techniques for contemporary designs. Emphasis is placed on contemporary designs and other related topics. Upon completion, students should be able to demonstrate and apply techniques associated with contemporary design.

Co-Requisites: None
Pre-Requisites: All: COS-111 and COS-112

COS-260 Design Applications **Lec 1 Lab 3 Clinic 0 Credit 2**
This course provides an overview of the design concepts used in cosmetology. Topics include the application of art principles and elements to artistically design hair, nails, and make-up and other related topics. Upon completion, students should be able to demonstrate knowledge and techniques associated with design concepts.

Co-Requisites: None
Pre-Requisites: None

COMPUTER SCIENCE (CSC)

CSC-112 Machine Learning Computation **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers the underlying foundations upon which machine learning solutions are created. Emphasis is placed on the mathematical foundations of machine learning concepts. Upon completion, students should be able to apply the underlying computations of machine learning systems.

Co-Requisites: None
Pre-Requisites: None

CSC-113 Artificial Intelligence Fundamentals **Lec 2 Lab 2 Clinic 0 Credit 3**
This course provides a survey of artificial intelligence and machine learning. Topics include the history, development, and current applications of artificial intelligence and machine learning. Demonstrate general artificial intelligence and machine learning concepts.

Co-Requisites: None
Pre-Requisites: None

CSC-114 Artificial Intelligence I **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers the study of intelligent agent design and rational decision making. Topics include goal-driven agents, search techniques, optimization, basic problem-solving methods, logic, knowledge-based agents, statistical and probabilistic reasoning, and the basics of machine learning. Upon completion, students should be able to demonstrate artificial intelligence design concepts.

Co-Requisites: None
Pre-Requisites: None

CSC-115 Machine Learning I **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers algorithms for enabling artificial systems. Topics include machine learning from experience, supervised and unsupervised learning, reinforcement learning control, and learning theory. Upon completion, students should be able to demonstrate machine-learning techniques.

Co-Requisites: None
Pre-Requisites: None

CSC-134 C++ Programming **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces computer programming using the C++ programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level.

Co-Requisites: None
Pre-Requisites: None

COMPUTER TECH INTEGRATION (CTI)

CTI-110 Web, Programming, and Database Foundation **Lec 2 Lab 2 Clinic 0 Credit 3**
This course covers the introduction of the tools and resources available to students in programming, mark-up language and services on the Internet. Topics include standard mark-up language Internet services, creating web pages, using search engines, file transfer programs; and database design and creation with DBMS products. Upon completion students should be able to demonstrate knowledge of programming tools, deploy a web-site with mark-up tools, and create a simple database table.

Co-Requisites: None
Pre-Requisites: None

CTI-120 Network and Security Foundation **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces students to the Network concepts, including networking terminology and protocols, local and wide area networks, and network standards. Emphasis is placed on securing information systems and the various implementation policies. Upon completion, students should be able to perform basic tasks related to networking mathematics, terminology, media and protocols.

Co-Requisites: None
Pre-Requisites: None

CTI-140 Virtualization Concepts Lec 1 Lab 4 Clinic 0 Credit 3
This course introduces operating system virtualization. Emphasis is placed on virtualization terminology, virtual machine storage, virtual networking and access control. Upon completion, students should be able to perform tasks related to installation, configuration and management of virtual machines.

Co-Requisites: None
Pre-Requisites: None

COMPUTER INFORMATION TECHNOLOG (CTS)

CTS-115 Information Systems Business Concepts Lec 3 Lab 0 Clinic 0 Credit 3
The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the 'hybrid business manager' and the potential offered by new technology and systems.

Co-Requisites: None
Pre-Requisites: None

CTS-120 Hardware/Software Support Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

Co-Requisites: None
Pre-Requisites: None

CTS-130 Spreadsheet Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts.

Co-Requisites: None
Pre-Requisites: None

CTS-240 Project Management Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces computerized project management software. Topics include identifying critical paths, cost management, and problem solving. Upon completion, students should be able to plan a complete project and project time and costs accurately.

Co-Requisites: None
Pre-Requisites: None

CTS-250 User Support & Software Evaluation Lec 2 Lab 2 Clinic 0 Credit 3
This course provides an opportunity to evaluate software and hardware and make recommendations to meet end-user needs. Emphasis is placed on software and hardware evaluation, installation, training, and support. Upon completion, students should be able to present proposals and make hardware and software recommendations based on their evaluations.

Co-Requisites: None
Pre-Requisites: None

CTS-285 Systems Analysis & Design Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.

Co-Requisites: None
Pre-Requisites: None

DATABASE MANAGEMENT TECHNOLOGY (DBA)

DBA-110 Database Concepts **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms.

Co-Requisites: None
Pre-Requisites: None

DBA-120 Database Programming I **Lec 2 Lab 2 Clinic 0 Credit 3**
This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update, and produce reports.

Co-Requisites: None
Pre-Requisites: None

DRAFTING (DFT)

DFT-151 CAD I **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing.

Co-Requisites: None
Pre-Requisites: None

DFT-170 Engineering Graphics **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces basic engineering graphics skills and applications. Topics include sketching, selection and use of current methods and tools, and the use of engineering graphics applications. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices.

Co-Requisites: None
Pre-Requisites: None

DRAMA/THEATRE (DRA)

DRA-111 Theatre Appreciation **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists.

Co-Requisites: None
Pre-Requisites: None

DRA-145 Stage Make-Up **Lec 1 Lab 2 Clinic 0 Credit 2**
This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up, prosthetics, and hairpieces.

Co-Requisites: None
Pre-Requisites: None

ECONOMICS (ECO)

ECO-151 Survey of Economics **Lec 3 Lab 0 Clinic 0 Credit 3**
This course, for those who have not received credit for ECO 251 or 252, introduces basic concepts of micro- and macroeconomics. Topics include supply and demand, optimizing economic behavior, prices and wages, money, interest rates, banking system, unemployment, inflation, taxes, government spending, and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors.

Co-Requisites: None
Pre-Requisites: None

ECO-251 Principles of Microeconomics Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces economic analysis of individual, business, and industry in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives.

Co-Requisites: None
Pre-Requisites: None

ECO-252 Principles of Macroeconomics Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals.

Co-Requisites: None
Pre-Requisites: None

EDUCATION (EDU)

EDU-119 Intro to Early Childhood Education Lec 4 Lab 0 Clinic 0 Credit 4
This course introduces the foundations of culturally responsive, equitable and inclusive early childhood education, planning intentional developmentally appropriate experiences, learning activities, and teaching strategies for indoor and outdoor environments for all young children, guidance techniques, and professionalism. Topics include theoretical foundations, national early learning standards, NC Foundations for Early Learning and Development, state regulations, program types, career options, professionalism, ethical conduct, quality inclusive environments, guidance techniques, and curriculum responsive to the needs of each child/family. Upon completion, students should be able to implement developmentally appropriate environments, guidance techniques, schedules, and teaching strategies across developmental domains to support culturally, linguistically, and ability diverse children and their families in inclusive settings, and design a personal career/professional development plan.

Co-Requisites: None
Pre-Requisites: None

EDU-131 Child, Family, and Community Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the development of partnerships among culturally, linguistically and ability diverse families, children, schools and communities through the use of evidence-based strategies. Emphasis is placed on developing skills and identifying benefits for establishing and supporting respectful relationships between diverse families, programs/schools, and community agencies/resources reflective of the NAEYC Code of Ethical Conduct and the Code of Ethics for North Carolina Educators. Upon completion, students should be able to identify appropriate relationship building strategies between diverse families, children birth through adolescence, schools, and communities and demonstrate a variety of communication skills including appropriate use of technology to support every child.

Co-Requisites: None
Pre-Requisites: None

EDU-144 Child Development I Lec 3 Lab 0 Clinic 0 Credit 3
This course includes the theories of child development, observation and assessment, milestones, and factors that influence development, from conception through approximately 36 months. Emphasis is placed on knowledge, observation and assessment of developmental sequences in approaches to play/learning, emotional/social, health/physical, language/communication and cognitive domains. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain biological and environmental factors that impact development, and identify evidence-based strategies for enhancing development for children that are culturally, linguistically, and ability diverse.

Co-Requisites: None
Pre-Requisites: None

EDU-145 Child Development II Lec 3 Lab 0 Clinic 0 Credit 3
This course includes the theories of child development, observation and assessment, milestones, and factors that influence development, from preschool through middle childhood. Emphasis is placed on knowledge, observation and assessment of developmental sequences in approaches to play/learning, emotional/social, health/physical, language/communication and cognitive domains. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain biological and environmental factors that impact development, and identify evidence-based strategies for enhancing development for children that are culturally, linguistically, and ability diverse.

Co-Requisites: None
Pre-Requisites: None

EDU-146 Child Guidance **Lec 3 Lab 0 Clinic 0 Credit 3**

This course introduces evidence-based strategies to build nurturing relationships with each child by applying principles and practical techniques to facilitate developmentally appropriate guidance. Topics include designing responsive/supportive learning environments, cultural, linguistic and socio-economic influences on behavior, appropriate expectations, the importance of communication with children/families including using technology and the use of formative assessments in establishing intentional strategies for children with unique needs. Upon completion, students should be able to demonstrate direct/indirect strategies to encourage social skills, self-regulation, emotional expression and positive behaviors while recognizing the relationship between children's social, emotional and cognitive development.

Co-Requisites: None
Pre-Requisites: None

EDU-151 Creative Activities **Lec 3 Lab 0 Clinic 0 Credit 3**

This course introduces developmentally supportive, diverse, equitable, and inclusive creative learning environments with attention to divergent thinking, creative problem-solving, evidence-based teaching practices, and open-ended learning materials and activities that align with the NC Foundations for Early Learning and Development. Emphasis is placed on best practices providing process-driven culturally diverse, learning experiences in art, music, creative movement, dance, and dramatic play integrated across all domains and academic content in indoor/outdoor environments for every young child age birth through age eight. Upon completion, students should be able to observe, examine, create, adapt, and advocate for developmentally appropriate creative learning materials, experiences, and environments for children that are culturally, linguistically, and ability diverse.

Co-Requisites: None
Pre-Requisites: None

EDU-153 Health, Safety and Nutrition **Lec 3 Lab 0 Clinic 0 Credit 3**

This course covers promoting and maintaining the health and well-being of every child. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, health benefits of active play, recognition and reporting of abuse/neglect, and state regulations. Upon completion, students should be able to apply knowledge of NC Foundations for Early Learning and Development for health, safety, nutritional needs and safe learning environments.

Co-Requisites: None
Pre-Requisites: None

EDU-187 Teaching and Learning for All **Lec 3 Lab 3 Clinic 0 Credit 4**

This course introduces students to knowledge, concepts, and best practices needed to provide developmentally appropriate, effective, inclusive, and culturally responsive educational experiences in the classroom. Topics include growth and development, learning theory, student motivation, teaching diverse learners, classroom management, inclusive environments, student-centered practices, instructional strategies, teaching methodologies, observation/assessment techniques, educational planning, reflective practice, collaboration, cultural competence, ethics, professionalism, and leadership. Upon completion, students should be able to identify the knowledge, skills, roles, and responsibilities of an effective educator as defined by state and national professional teaching standards.

Co-Requisites: None
Pre-Requisites: None

EDU-216 Foundations of Education **Lec 3 Lab 0 Clinic 0 Credit 3**

This course introduces the examination of the American educational systems and the teaching profession. Topics include the historical and philosophical influences on education, various perspectives on educational issues, and experiences in birth through grade 12 classrooms. Upon completion, students should be able to reflect on classroom observations, analyze the different educational approaches, including classical/traditional and progressive, and have knowledge of the various roles of educational systems at the federal, state and local level.

Co-Requisites: None
Pre-Requisites: None

EDU-221 Children With Exceptionalities **Lec 3 Lab 0 Clinic 0 Credit 3**

This course covers atypical patterns of child development, inclusive/diverse settings, evidenced-based educational/family plans, differentiated instruction, adaptive materials, and assistive technology. Emphasis is placed on the characteristics of exceptionalities and delays, early intervention/special education, transitions, observation, developmental screening, formative assessment of children, and collaborating with families and community partners. Upon completion, students should be able to recognize diverse abilities, describe the referral process, identify community resources, explain the importance of collaboration with families/professionals, and develop appropriate strategies/adaptations to support children in all environments with best practices as defined by laws, policies and the NC Foundations for Early Learning and Development.

Co-Requisites: None
Pre-Requisites: one set: Set 1: EDU-144 and EDU-145 Set 2: PSY-244 and PSY-245

EDU-234 Infants, Toddlers, and Twos Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the development of high-quality, individualized, responsive/engaging relationships and experiences for infants, toddlers, and twos. Emphasis is placed on typical and atypical child development, working with diverse families to provide positive, supportive, and engaging early learning activities and interactions through field experiences and the application of the NC Foundations for Early Learning and Development. Upon completion, students should be able to demonstrate responsive curriculum planning, respectful relationships and exposure to a variety of developmentally appropriate experiences/materials that support a foundation for healthy development and growth of culturally, linguistically and ability diverse children birth to 36 months.

Co-Requisites: None
Pre-Requisites: EDU-119

EDU-235 School-Age Development and Programs Lec 3 Lab 0 Clinic 0 Credit 3
This course includes developmentally appropriate practices in group settings for school-age children. Emphasis is placed on principles of development, environmental planning, and positive guidance techniques and program development. Upon completion, students should be able to discuss developmental principles for culturally, linguistically, and ability diverse children ages five to twelve and plan and implement developmentally appropriate programs and activities.

Co-Requisites: None
Pre-Requisites: None

EDU-250 Teacher Licensure Preparation Lec 3 Lab 0 Clinic 0 Credit 3
This course provides information and strategies necessary for transfer to a teacher licensure program at a senior institution. Topics include entry level teacher licensure exam preparation, performance based assessment systems, requirements for entry into teacher education programs, the process to become a licensed teacher in North Carolina, and professionalism including expectations within the field of education. Upon completion, students should be able to utilize educational terminology and demonstrate knowledge of teacher licensure processes including exam preparation, technology based portfolio assessment, and secondary admissions processes to the school of education at a senior institution.

Co-Requisites: None
Pre-Requisites: one set: Set 1: ENG-111 and MAT-143 Set 2: ENG-111 and MAT-152 Set 3: ENG-111 and MAT-171

EDU-259 Curriculum Planning Lec 3 Lab 0 Clinic 0 Credit 3
This course is designed to focus on using content knowledge to build effective developmentally appropriate approaches that are culturally responsive, equitable, and ability diverse for young children. Topics include components of curriculum, a variety of curriculum models, authentic observation and assessment, and planning developmentally appropriate experiences and indoor/outdoor environments aligned with the NC Foundations for Early Learning and Development. Upon completion, students should be able to understand, evaluate, and use developmentally appropriate curriculum to plan for the individual/group needs of young children.

Co-Requisites: None
Pre-Requisites: EDU-119

EDU-261 Early Childhood Administration I Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces principles and practices essential to preparing and supporting child care administrators. Topics include program philosophy, policies and procedures, NC Child Care Law and Rules, business planning, personnel and fiscal management, and NAEYC Code of Ethical Conduct Supplement for Early Childhood Program Administration. Upon completion, students should be able to articulate a developmentally appropriate program philosophy, locate current state licensing regulations, analyze a business plan and examine comprehensive program policies and procedures.

Co-Requisites: EDU-119
Pre-Requisites: None

EDU-262 Early Childhood Administration II Lec 3 Lab 0 Clinic 0 Credit 3
This course focuses on advocacy/leadership, public relations/community outreach and program quality/evaluation for diverse early childhood programs. Topics include program evaluation/accreditation, involvement in early childhood professional organizations, leadership/mentoring, family, volunteer and community involvement and early childhood advocacy. Upon completion, students should be able to define and evaluate all components of early childhood programs, develop strategies for advocacy and integrate community into programs.

Co-Requisites: None
Pre-Requisites: All: EDU-119 and EDU-261

EDU-279 Literacy Development and Instruction Lec 3 Lab 3 Clinic 0 Credit 4
This course is designed to provide students with concepts and skills of literacy development, instructional methods/materials and assessment techniques needed to provide scientifically-based, systematic reading and writing instruction into educational practice. Topics include literacy concepts, reading and writing development, developmentally appropriate pedagogy, culturally-responsive

instruction, standards-based outcomes, lesson planning, formative/summative assessment, recognizing reading difficulties, research-based interventions, authentic learning experiences, classroom implementation, and reflective practice. Upon completion, students should be able to plan, implement, assess, evaluate, and demonstrate developmentally appropriate literacy instruction aligned to the NC Standard Course of Study and other state and national standards.

Co-Requisites: None
Pre-Requisites: None

EDU-280 Language and Literacy Experiences Lec 3 Lab 0 Clinic 0 Credit 3
This course provides evidence-based strategies for enhancing language and literacy experiences that align with NC Foundations for Early Learning and Development. Topics include developmental sequences for children's emergent receptive and expressive language, print concepts, appropriate observations/assessments, literacy enriched environments, quality selection of diverse literature, interactive media, and inclusive practices. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate language and literacy experiences for children who are culturally, linguistically and ability diverse.

Co-Requisites: None
Pre-Requisites: None

EDU-284 Early Childhood Capstone Practicum Lec 1 Lab 9 Clinic 0 Credit 4
This course is designed to allow students to demonstrate acquired skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/engaging families; and modeling reflective and professional practices based on national and state guidelines. Upon completion, students should be able to apply NC Foundations for Early Learning and Development to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors, including the use of appropriate technology, as indicated by assignments and onsite faculty assessments.

Co-Requisites: None
Pre-Requisites: One Set: Set 1: EDU-119, EDU-144, EDU-145, EDU-146, and EDU-151 Set 2: EDU-119, PSY-244, PSY-245, EDU-146, and EDU-151 Set 3: EDU-119, EDU-144, PSY-245, EDU-146, and EDU-151 Set 4: EDU-119, PSY-244, EDU-145, EDU-146, and EDU-151

ENGINEERING (EGR)

EGR-150 Intro to Engineering Lec 1 Lab 2 Clinic 0 Credit 2
This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications. Upon completion, students should be able to understand the engineering process, the engineering profession, and utilize college resources to meet their educational goals.

Co-Requisites: None
Pre-Requisites: None

EGR-220 Engineering Statics Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the concepts of engineering based on forces in equilibrium. Topics include concentrated forces, distributed forces, forces due to friction, and inertia as they apply to machines, structures, and systems. Upon completion, students should be able to solve problems which require the ability to analyze systems of forces in static equilibrium.

Co-Requisites: MAT-272
Pre-Requisites: PHY-251

EGR-225 Engineering Dynamics Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the concepts of engineering based on the analysis of motion in Cartesian, cylindrical, and spherical coordinate systems. Topics include the two and three dimensional motion of particles and rigid bodies, the forces associated with that motion, and relative motion between two coordinate systems. Upon completion, students should be able to solve problems which require the ability to analyze the motion and forces involved in a dynamic system.

Co-Requisites: MAT-273
Pre-Requisites: EGR-220

ELECTRICAL (ELC)

ELC-112 DC/AC Electricity Lec 3 Lab 6 Clinic 0 Credit 5
This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, and analyze simple DC/AC circuits.

Co-Requisites: None
Pre-Requisites: None
Competencies: Demonstrate safe practices and procedures with tools, materials, and industry accepted test equipment covered in the course. Demonstrate appropriate use of test equipment, evaluate circuit performance and apply appropriate troubleshooting techniques to electrical circuits. Construct and analyze series, parallel and combination circuits using appropriate components. Use appropriate laws and formulas to perform circuit calculations. Interpret electrical schematics. Describe the characteristics of various power sources.

ELC-113 Residential Wiring Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces the care/usage of tools and materials used in residential electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical print reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with residential electrical installations.

Co-Requisites: None
Pre-Requisites: None

ELC-114 Commercial Wiring Lec 2 Lab 6 Clinic 0 Credit 4
This course provides instruction in the application of electrical tools, materials, and test equipment associated with commercial electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion, students should be able to properly install equipment and conduit associated with commercial electrical installations.

Co-Requisites: None
Pre-Requisites: None

ELC-115 Industrial Wiring Lec 2 Lab 6 Clinic 0 Credit 4
This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.

Co-Requisites: None
Pre-Requisites: None

ELC-117 Motors and Controls Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

Co-Requisites: None
Pre-Requisites: None

ELC-118 National Electrical Code Lec 1 Lab 2 Clinic 0 Credit 2
This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC.

Co-Requisites: None
Pre-Requisites: None

ELC-119 NEC Calculations Lec 1 Lab 2 Clinic 0 Credit 2
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.

Co-Requisites: None
Pre-Requisites: None

ELC-121 Electrical Estimating Lec 1 Lab 2 Clinic 0 Credit 2
This course covers the principles involved in estimating electrical projects. Topics include take-offs of materials and equipment, labor, overhead, and profit. Upon completion, students should be able to estimate simple electrical projects.

Co-Requisites: None
Pre-Requisites: None

ELC-125 Diagrams and Schematics Lec 1 Lab 2 Clinic 0 Credit 2
This course covers the interpretation of electrical diagrams, schematics, and drawings common to electrical applications. Emphasis is placed on reading and interpreting electrical diagrams and schematics. Upon completion, students should be able to read and interpret electrical diagrams and schematics.

Co-Requisites: None
Pre-Requisites: None

ELC-128 Introduction to Programmable Logic Controller Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to understand basic PLC systems and create simple programs.

Co-Requisites: None
Pre-Requisites: None

ELC-130 Advanced Motors and Controls Lec 2 Lab 2 Clinic 0 Credit 3
This course covers motors concepts, construction and characteristics and provides a foundation in motor controls. Topics include motor control ladder logic, starters, timers, overload protection, braking, reduced voltage starting, SCR control, AC/DC drives, system and component level troubleshooting. Upon completion, students should be able to specify, connect, control, troubleshoot, and maintain motors and motor control systems.

Co-Requisites: None
Pre-Requisites: One: ELC-111, ELC-112, ELC-131, or ELC-138

ELC-131 Circuit Analysis I Lec 3 Lab 3 Clinic 0 Credit 4
This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.

Co-Requisites: None
Pre-Requisites: None

ELC-131A Circuit Analysis I Lab Lec 0 Lab 3 Clinic 0 Credit 1
This course provides laboratory assignments as applied to fundamental principles of DC/AC electricity. Emphasis is placed on measurements and evaluation of electrical components, devices and circuits. Upon completion, the students will gain hands-on experience by measuring voltage, current, and opposition to current flow utilizing various meters and test equipment.

Co-Requisites: ELC-131
Pre-Requisites: None

ELC-215 Electrical Maintenance Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces the theory of maintenance and the skills necessary to maintain electrical equipment found in industrial and commercial facilities. Topics include maintenance theory, predictive and preventive maintenance, electrical equipment operation and maintenance, and maintenance documentation. Upon completion, students should be able to perform maintenance on electrical equipment in industrial and commercial facilities.

Co-Requisites: None
Pre-Requisites: None

ELC-229 Applications Project Lec 1 Lab 3 Clinic 0 Credit 2
This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project.

Co-Requisites: None
Pre-Requisites: None

ELECTRONICS (ELN)

ELN-112 Diesel Electronics System Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces electronic theory and applications as used in medium and heavy duty vehicles. Emphasis is placed on the basic function and operation of semiconductor and integrated circuits. Upon completion, students should be able to identify electronic components, explain their use and function, and use meters and flow charts to diagnose and repair systems.

Co-Requisites: None
Pre-Requisites: None

ELN-231 Industrial Controls **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces the fundamental concepts of control of rotating machinery and associated peripheral devices. Topics include rotating machine theory, ladder logic, electromechanical and solid state relays, motor controls, pilot devices, three-phase power systems, and other related topics. Upon completion, students should be able to interpret schematics and demonstrate an understanding of electromechanical and electronic control of rotating machinery.

Co-Requisites: None
Pre-Requisites: None

ELN-275 Troubleshooting **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers techniques of analyzing and repairing failures in electronic equipment. Topics include safety, signal tracing, use of service manuals, and specific troubleshooting methods for analog, digital, and other electronics-based circuits and systems. Upon completion, students should be able to logically diagnose and isolate faults and perform necessary repairs to meet manufacturers' specifications.

Co-Requisites: None
Pre-Requisites: None

EMERGENCY MEDICAL SCIENCE (EMS)

EMS-235 EMS Management **Lec 2 Lab 0 Clinic 0 Credit 2**
This course stresses the principles of managing a modern emergency medical service system. Topics include structure and function of municipal governments. EMS grantsmanship, finance, regulatory agencies, system management, legal issues, and other topics relevant to the EMS manager. Upon completion, students should be able to understand the principles of managing emergency medical service delivery systems.

Co-Requisites: None
Pre-Requisites: None

ENGLISH (ENG)

ENG-025 College English Skills **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides the skills necessary for success in college English courses. Topics include reading and writing processes and strategies, such as critical thinking, text analysis, idea development, and application of writing conventions. Upon completion, students should be able to analyze readings and produce unified, coherent, well-developed paragraphs and essays using appropriate document design and standard written English while developing positive academic habits, learning strategies, and a growth mindset.

Co-Requisites: None
Pre-Requisites: None

ENG-045 English Skills Support **Lec 1 Lab 2 Clinic 0 Credit 2**
This course provides academic support for the successful completion of gateway English courses by supplementing and reinforcing classroom instruction. Emphasis is placed on developing a growth mindset, expanding skills in active reading and writing processes, applying editing and revision strategies, exercising standard writing conventions through contextualized instruction, and ethically using appropriate technology when reading and writing. Upon completion, students should be able to apply active reading strategies to college-level texts and produce unified, well-developed essays using standard written English.

Co-Requisites: None
Pre-Requisites: None

ENG-110 Freshman Composition **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is designed to develop informative and business writing skills. Emphasis is placed on logical organization of writing, including effective introductions and conclusions, precise use of grammar, and appropriate selection and use of sources. Upon completion, students should be able to produce clear, concise, well-organized short papers.

Co-Requisites: ENG-045;
Pre-Requisites: one:DRE-097, ENG-002, BSP-4002, or ENG-025

ENG-111 Writing and Inquiry **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English.

Co-Requisites: ENG-045
Pre-Requisites: ENG-025;
Competencies: Demonstrate writing as a recursive process. Demonstrate writing and inquiry in context using different rhetorical strategies to reflect, analyze, explain, and persuade in a variety of genres and formats. Students will reflect upon and explain their writing strategies. Demonstrate the critical use and examination of printed, digital, and visual materials. Locate, evaluate, and incorporate relevant sources with proper documentation. Compose texts incorporating rhetorically effective and conventional use of language. Collaborate actively in a writing community.

ENG-112 Writing and Research in the Disciplines Lec 3 Lab 0 Clinic 0 Credit 3
This course, the second in a series of two, introduces research techniques, documentation styles, and writing strategies. Emphasis is placed on analyzing information and ideas and incorporating research findings into documented writing and research projects. Upon completion, students should be able to evaluate and synthesize information from primary and secondary sources using documentation appropriate to various disciplines.

Co-Requisites: None
Pre-Requisites: ENG-111

ENG-125 Creative Writing I Lec 3 Lab 0 Clinic 0 Credit 3
This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing, fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others.

Co-Requisites: None
Pre-Requisites: ENG-111

ENG-126 Creative Writing II Lec 3 Lab 0 Clinic 0 Credit 3
This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication.

Co-Requisites: None
Pre-Requisites: ENG-125

ENG-131 Introduction to Literature Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature.

Co-Requisites: One: ENG-112, ENG-113, or ENG-114 ENG-112, ENG-114 and ENG-113
Pre-Requisites: ENG-111

ENG-231 American Literature I Lec 3 Lab 0 Clinic 0 Credit 3
This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to analyze and interpret literary works in their historical and cultural contexts.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG 113, or ENG 114

ENG-232 American Literature II Lec 3 Lab 0 Clinic 0 Credit 3
This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to analyze and interpret literary works in their historical and cultural contexts.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG-113, or ENG-114

ENG-241 British Literature I Lec 3 Lab 0 Clinic 0 Credit 3
This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

Co-Requisites: None
Pre-Requisites: ENG-112, ENG-113, or ENG-114

ENG-242 British Literature II **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG-113, or ENG-114

ENG-272 Southern Literature **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG-113, or ENG-114

ENG-274 Literature by Women **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG-113, or ENG-114

ENG-275 Science Fiction **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers the relationships between science and literature through analysis of short stories and novels. Emphasis is placed on scientific discoveries that shaped Western culture and our changing view of the universe as reflected in science fiction literature. Upon completion, students should be able to trace major themes and ideas and illustrate relationships between science, world view, and science fiction literature.

Co-Requisites: None
Pre-Requisites: One: ENG-112, ENG-113, or ENG-114

EMERGENCY PREPAREDNESS (EPT)

EPT-120 Sociology of Disaster **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is designed to overview sociological disaster research, disaster systems, and alternative research approaches. Topics include human and organizational behaviors, long disaster impact on communities, disaster warning, and evacuation considerations. Upon completion, students should be able to assess and predict the impact of disaster-related human behavior.

Co-Requisites: None
Pre-Requisites: None

EPT-210 Response & Recovery **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the basic concepts, operational procedures, and authorities involved in response and recovery efforts to major disasters. Topics include federal, state, and local roles and responsibilities in major disaster, response, and recovery work, with an emphasis on governmental coordination. Upon completion, students should be able to implement a disaster response plan and assess the needs of those involved in a major disaster.

Co-Requisites: None
Pre-Requisites: None

EPT-260 Business Continuity **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers emergency preparedness techniques necessary to maintain business continuity. Topics include critical processes, planning, risk assessment, impact analysis, mitigation strategies, response, recovery and resumption activities. Upon completion, students should be able to demonstrate a working knowledge of the partnership between business and emergency response.

Co-Requisites: None
Pre-Requisites: None

ENTREPRENEURSHIP (ETR)

ETR-220 Innovation and Creativity **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides a study of developing and enhancing individual and organizational creativity and innovation. Topics include that innovation needs to be applied to products, services, and processes to increase competitive advantages and add value to businesses. Upon completion, students should be able to apply innovation and creativity principles in the work place.

Co-Requisites: None
Pre-Requisites: None

FIRE PROTECTION (FIP)

FIP-276 Managing Fire Services **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an overview of fire department operative services referenced in NFPA standard 1021. Topics include finance, staffing, equipment, code enforcement,management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.

Co-Requisites: None
Pre-Requisites: None

FOREST MANAGEMENT (FOR)

FOR-121 Dendrology **Lec 2 Lab 6 Clinic 0 Credit 4**
This course covers field identification, classifications, uses, and nomenclature of trees. Emphasis is placed on silvics, characteristics, commercial importance, and wildlife benefits of trees. Upon completion, students should be able to identify trees and understand their uses.

Co-Requisites: None
Pre-Requisites: None

FOR-123 Forest Botany **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces the structures and processes of forest plants. Emphasis is placed on dissection and direct examination of roots, shoots, and leaves. Upon completion, students should be able to identify plant parts and understand their functions.

Co-Requisites: None
Pre-Requisites: None

FOR-131 Forest Measurements **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces basic land and tree measurement equipment and mapping techniques. Emphasis is placed on developing skills for land, tree, and log measurements. Upon completion, students should be able to accurately use land and tree measurement equipment.

Co-Requisites: None
Pre-Requisites: None

FOR-171 Introduction to Forest Resources **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the relationships within the forest and its various uses. Emphasis is placed on forest history, ecology, protection, management, policies, and practices. Upon completion, students should be able to discuss the relationship of the forest and its use to the welfare of mankind.

Co-Requisites: None
Pre-Requisites: None

FOR-173 Soils & Hydrology **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers concepts of soils and water including physical and chemical soil properties. Emphasis is placed on soil sampling, identification, plant-site relationships, water movement, and properties. Upon completion, students should be able to relate soil and water characteristics to forest growth and water quality.

Co-Requisites: None
Pre-Requisites: None

FOR-175 Wildlife and Environmental Studies **Lec 2 Lab 3 Clinic 0 Credit 3**
This course provides an overview of wildlife and environmental issues pertaining to the ecological, social, and economic aspects of forestry. Topics include wildlife management, wetland delineation, endangered species detection, protection, landowner

rights, liabilities, regulations, and law. Upon completion, students should be able to demonstrate a knowledge of how wildlife and environmental issues affect forestry in the United States.

Co-Requisites: None
Pre-Requisites: None

FOR-212 Forest Surveying & Aerial Interpretation Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the basic concepts of plane surveying and aerial photo interpretation. Emphasis is placed on boundary location and acreage determination both on the ground and through aerial photographs. Upon completion, students should be able to confidently use basic surveying equipment and aerial photographs for forest land measurements.

Co-Requisites: FOR-215
Pre-Requisites: FOR-131

FOR-215 Introduction to GIS/GPS Lec 1 Lab 4 Clinic 0 Credit 3
This course introduces geographic information systems and global positioning devices. Emphasis is placed on the use of existing hardware and software to create and update computer generated maps. Upon completion, students should be able to understand the uses and limitations of GIS and GPS devices in forestry applications.

Co-Requisites: None
Pre-Requisites: None

FOR-225 Silvics & Silviculture Lec 3 Lab 3 Clinic 0 Credit 4
This course covers the establishment, development, care, and harvesting of forest stands. Emphasis is placed on the application of various techniques used to control stand establishment, composition, and growth. Upon completion, students should be able to understand and apply appropriate forest stand improvement techniques.

Co-Requisites: None
Pre-Requisites: FOR-121

FOR-232 Forest Mensuration Lec 2 Lab 6 Clinic 0 Credit 4
This course provides applications of previously covered measurement techniques to the volume estimation and valuation of forest stands. Emphasis is placed on applications of various timber cruising methods. Upon completion, students should be able to determine the size, volume, and quality of forest stands.

Co-Requisites: None
Pre-Requisites: FOR-131

FOR-240 Forest Protection Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the forces that affect the health and vigor of the nation's forests. Emphasis is placed on wildfire management, prescribed burning, entomology, pathology, and forest health. Upon completion, students should be able to identify the major pests which affect the forest and understand and recommend control methods.

Co-Requisites: None
Pre-Requisites: None

FOR-241 Forest Fire Management Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the nature of wildfire and the uses of prescribed burning in a forest or urban interface setting. Topics include prevention, detection, suppression, causes, and the ecological and economic effects of fire. Upon completion, students should be able to use fire as a management tool and participate in the suppression of wildfire.

Co-Requisites: None
Pre-Requisites: None

FOR-271 Forest Management Lec 2 Lab 3 Clinic 0 Credit 3
This course is designed as a capstone course for forest management majors to apply skills previously learned. Emphasis is placed on recommendations forest managers make to provide services on forest lands to meet the owners' objectives. Upon completion, students should be able to develop forest management plans for various forest ownerships. This is the capstone course for the Forest Management Technology A.A.S. degree program.

Co-Requisites: None
Pre-Requisites: All: FOR-225 and FOR-232 ENG-111

FOR-285 Logging & Marketing **Lec 2 Lab 3 Clinic 0 Credit 3**
This course covers logging systems commonly used in the Southeast. Emphasis is placed on roading, matching equipment to job requirements, safety, legal requirements, and primary manufacturing of forest products. Upon completion, students should be able to supervise a logging operation.

Co-Requisites: None
Pre-Requisites: None

FISH AND WILDLIFE (FWL)

FWL-124 Wildlife Botany **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces the classification, physiology, and morphology of plants as needed in fish and wildlife management. Emphasis is placed on plant structures, reproduction, growth, and the economic and ecological importance. Upon completion, students should be able to demonstrate knowledge of the plant kingdom.

Co-Requisites: None
Pre-Requisites: None

FWL-126 Wildlife Ornithology **Lec 2 Lab 3 Clinic 0 Credit 3**
This course includes the biology, classification, recognition, distribution, and management of game and non-game birds. Topics include anatomy, physiology, morphology, ecology, behavior, identification, and taxonomy with emphasis on waterfowl and upland game species. Upon completion, students should be able to identify various avian species and demonstrate a knowledge of their biology, ecology, and management.

Co-Requisites: None
Pre-Requisites: None

FWL-142 Wildlife Management **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces the principles of wildlife management, including basic concepts, terminology, and techniques important to wildlife managers. Topics include a review of the history of wildlife management, ecological principles, an introduction to wildlife habitat requirements, and population dynamics. Upon completion, students should be able to understand and discuss the life history, management techniques, and habitat requirements of North American species.

Co-Requisites: None
Pre-Requisites: None

FWL-212 Wildlife Policy & Law **Lec 2 Lab 0 Clinic 0 Credit 2**
This course covers natural resource policies and laws developed by various governmental agencies. Topics include current political issues involved in resource management and the principles, techniques, and jurisdictional boundaries in the field of wildlife law enforcement. Upon completion, students should be able to identify, describe, and assess the influences of policies and laws on natural resource management.

Co-Requisites: None
Pre-Requisites: None

FWL-222 Wildlife Mammalogy **Lec 2 Lab 3 Clinic 0 Credit 3**
This course includes the biology, classification, recognition, distribution, and management of game and non-game mammals. Topics include anatomy, physiology, morphology, ecology, behavior, identification and taxonomy with emphasis on game species. Upon completion, students should be able to identify various mammalian species and demonstrate a knowledge of their biology, ecology, and management.

Co-Requisites: None
Pre-Requisites: None

FWL-224 Ichthyology **Lec 1 Lab 2 Clinic 0 Credit 2**
This course introduces fresh and saltwater fish species. Emphasis is placed on identification of fish. Upon completion, students should be able to recognize sport, commercial, and environmentally unique fish species.

Co-Requisites: None
Pre-Requisites: None

FWL-232 Terrestrial Ecology **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces a wide variety of terrestrial life forms and habitats. Emphasis is placed on the biotic and abiotic factors affecting wildlife species. Upon completion, students should be able to explain the relationships between plants and animals, apply various floral and faunal sampling methods, and understand statistical applications.

Co-Requisites: None
Pre-Requisites: None

FWL-234 Aquatic Ecology Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces a wide variety of aquatic life forms and habitats. Emphasis is placed on freshwater invertebrates, fish and plants of importance in fishery management, and biological monitoring. Upon completion, students should be able to sight identify key invertebrates and fishes and be familiar with aquatic plants and habitats.

Co-Requisites: None
Pre-Requisites: None

FWL-242 Fishery Management Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the biology and management implications for various species of fish with commercial, sport, and/or ecological value. Emphasis is placed on principles and methods of population management. Upon completion, students should be able to demonstrate an understanding of the anatomy, physiology, age and growth studies, and management techniques for various fish species.

Co-Requisites: None
Pre-Requisites: None

FWL-252 Wildlife Management Techniques Lec 2 Lab 3 Clinic 0 Credit 3
This course covers the theory and application of current wildlife management techniques. Emphasis is placed on field techniques which are most commonly used by resource management agencies today. Upon completion, students should be able to apply various wildlife management techniques and safely operate and maintain a variety of equipment.

Co-Requisites: FWL-254
Pre-Requisites: None

FWL-254 Habitat Manipulation Lec 2 Lab 3 Clinic 0 Credit 3
This course is a study and application of management practices beneficial to wildlife. Emphasis is placed on methods for increasing food production, developing water sources, increasing cover requirements, and improving wetlands. Upon completion, students should be able to demonstrate an understanding of techniques and methods to manipulate wildlife habitats. This is the capstone course for the Fish and Wildlife Technology A.A.S. degree program.

Co-Requisites: FWL-252
Pre-Requisites: FOR-121 FWL-142 ENG-111;

GEOLOGY (GEL)

GEL-111 Geology Lec 3 Lab 2 Clinic 0 Credit 4
This course introduces basic landforms and geological processes. Topics include rocks, minerals, volcanoes, fluvial processes, geological history, plate tectonics, glaciers, and coastal dynamics. Upon completion, students should be able to describe basic geological processes that shape the earth.

Co-Requisites: None
Pre-Requisites: None
Competencies: Explain fundamental geologic concepts including earth structure, plate tectonics, rocks and minerals, rock cycle, crystal deformation, surficial processes, earth resources and geohazards. Apply the basic methods of scientific inquiry in the context of geology. Recognize and quantify the operation of Earth system processes over geologic and human timescales and over local, regional and global spatial scales. Manipulate, interpret and construct visualizations of geologic data using maps, graphs, and contemporary technology. Demonstrate an appreciation for the societal relevance of geology and the impact of humans on the earth system.

HEALTH (HEA)

HEA-110 Personal Health/Wellness Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness.

Co-Requisites: None
Pre-Requisites: None

HEA-112 First Aid & CPR Lec 1 Lab 2 Clinic 0 Credit 2
This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained.

Co-Requisites: None
Pre-Requisites: None

HEAVY EQUIPMENT MAINTENANCE (HET)

HET-110 Diesel Engines Lec 3 Lab 9 Clinic 0 Credit 6
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is laced on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

Co-Requisites: None
Pre-Requisites: None

HET-125 Preventive Maintenance Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and road ability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

Co-Requisites: None
Pre-Requisites: None

HISTORY (HIS)

HIS-111 World Civilizations I Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations.

Co-Requisites: None
Pre-Requisites: None

HIS-112 World Civilizations II Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations.

Co-Requisites: None
Pre-Requisites: None

HIS-121 Western Civilization I Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces western civilization from pre-history to the early modern era. Topics include ancient Greece, Rome, and Christian institutions of the Middle Ages and the emergence of national monarchies in western Europe. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early western civilization.

Co-Requisites: None
Pre-Requisites: None

HIS-122 Western Civilization II Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces western civilization from the early modern era to the present. Topics include the religious wars, the Industrial Revolution, World Wars I and II, and the Cold War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern western civilization.

Co-Requisites: None
Pre-Requisites: None

HIS-131 American History I Lec 3 Lab 0 Clinic 0 Credit 3
This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history.

Co-Requisites: None

Pre-Requisites: None

HIS-132 American History II **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major American wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War.

Co-Requisites: None
Pre-Requisites: None

HIS-226 The Civil War **Lec 3 Lab 0 Clinic 0 Credit 3**
This course examines the social, political, economic, and ideological forces that led to the Civil War and Reconstruction. Topics include regional conflicts and sectionalism, dissolution of the Union, military campaigns, and the War's socioeconomic impact, aftermath, and consequences. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the United States during the era of the Civil War.

Co-Requisites: None
Pre-Requisites: None

HIS-236 North Carolina History **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina.

Co-Requisites: None
Pre-Requisites: None

HIS-262 Middle East History **Lec 3 Lab 0 Clinic 0 Credit 3**
This course surveys the history of the Middle East from the development of civilization in Mesopotamia to the present. Emphasis is placed on social, political, economic, religious, and governmental structures in the Middle East. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the Middle East.

Co-Requisites: None
Pre-Requisites: None

HOTEL & RESTAURANT MANAGEMENT (HRM)

HRM-110 Introduction to Hospitality and Tourism **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers the growth and progress of the hospitality industry. Topics include tourism, lodging, resorts, gaming, restaurants, foodservice and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist within the hospitality industry.

Co-Requisites: None
Pre-Requisites: None

HRM-180 The Business of Tourism **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers concepts related to tourism through a global business perspective, examining management, marketing and finance issues related to the tourism industry. Topics include marketing to the traveling public, delivering quality tourism services, the economic, environmental and political impacts of tourism and capturing technology's competitive advantages in the tourism industry. Upon completion, students should be able to demonstrate an understanding of an integrated model of tourism that addresses consumer behavior, service quality and the future of tourism.

Co-Requisites: None
Pre-Requisites: HRM-110

HRM-210 Meetings and Event Planning **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces concepts related to the planning and operation of conventions, trade shows, professional meetings, and foodservice events. Emphasis is placed on methods of marketing, selling, organizing, and producing conventions, events, and trade shows that will increase financial and environmental value. Upon completion, students should be able to demonstrate an understanding of management principles for multi-function, multi-day conferences and events.

Co-Requisites: None
Pre-Requisites: None

HUMANITIES (HUM)

HUM-110 Technology and Society **Lec 3 Lab 0 Clinic 0 Credit 3**
This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology.

Co-Requisites: None
Pre-Requisites: None

HUM-115 Critical Thinking **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts.

Co-Requisites: None
Pre-Requisites: None

HUM-120 Cultural Studies **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the distinctive features of a particular culture. Topics include art, history, music, literature, politics, philosophy, and religion. Upon completion, students should be able to appreciate the unique character of the study culture.

Co-Requisites: None
Pre-Requisites: None

HUM-121 The Nature of America **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an interdisciplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life.

Co-Requisites: None
Pre-Requisites: None

HUM-122 Southern Culture **Lec 3 Lab 0 Clinic 0 Credit 3**
This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture.

Co-Requisites: None
Pre-Requisites: None

HUM-123 Appalachian Culture **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an interdisciplinary study of the unique features of Appalachian culture. Topics include historical, political, sociological, psychological, and artistic features which distinguish this region. Upon completion, students should be able to demonstrate a broad-based awareness and appreciation of Appalachian culture.

Co-Requisites: None
Pre-Requisites: None

HUM-130 Myth in Human Culture **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture.

Co-Requisites: None
Pre-Requisites: None

HUM-160 Introduction to Film **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Upon completion, students should be able to critically analyze the elements covered in relation to selected films.

Co-Requisites: None
Pre-Requisites: None

HUM-161 Advanced Film Studies **Lec 2 Lab 2 Clinic 0 Credit 3**
This course provides an advanced study of film art and production, building on skills learned in HUM 160. Topics include advanced film production techniques, film genres, examination of master directors' styles, and the relation of film to culture. Upon completion, students should be able to recognize and critically analyze advanced elements of film production.

Co-Requisites: None
Pre-Requisites: HUM-160

HUM-180 International Cultural Exploration **Lec 2 Lab 3 Clinic 0 Credit 3**
This course provides a framework for students to visit, examine, and analyze a country/region outside the United States to learn about the place and people. Emphasis is placed on the distinctive cultural characteristics of a country or region. Upon completion, students should be able to identify similarities/differences, analyze causes/effects, and clearly articulate the impact of one or more cultural elements.

Co-Requisites: None
Pre-Requisites: None

HUM-211 Humanities I **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied.

Co-Requisites: None
Pre-Requisites: ENG-111

HUM-212 Humanities II **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied.

Co-Requisites: None
Pre-Requisites: ENG-111

HUM-220 Human Values and Meaning **Lec 3 Lab 0 Clinic 0 Credit 3**
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding.

Co-Requisites: None
Pre-Requisites: ENG-111 ENG-112 ENG-113 or ENG-114;

HYDRAULICS (HYD)

HYD-110 Hydraulics/Pneumatics I **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

Co-Requisites: None
Pre-Requisites: None

HYD-210 Advanced Hydraulics **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers advanced hydraulic systems. Emphasis is placed on advanced hydraulic systems and components, troubleshooting, and other related topics. Upon completion, students should be able to demonstrate an understanding of the installation, application, operation, and maintenance of hydraulic components and systems.

Co-Requisites: None
Pre-Requisites: One Course: HYD-110, HYD-111, or HYD-112

INDUSTRIAL SCIENCE (ISC)

ISC-112 Industrial Safety **Lec 2 Lab 0 Clinic 0 Credit 2**
This course introduces the principles of industrial safety. Emphasis is placed on industrial safety and OSHA regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance.

Co-Requisites: None
Pre-Requisites: None
Competencies: Describe and identify safety practices required to perform various job-related activities. Describe the application of OSHA procedures and requirements for compliance.

ISC-112A Industrial Safety Lab **Lec 0 Lab 2 Clinic 0 Credit 1**
This course provides a laboratory application for ISC 112. Emphasis is placed on the importance of being safety conscious, developing safe working habits, creating a safety culture, conducting risk assessment activities, and constructing safety boards. Upon completion, students should be able to participate and lead safety walkthroughs and discussions.

Co-Requisites: None
Pre-Requisites: None
Competencies: Describe and identify safety practices required to perform various job-related activities. Describe the application of OSHA procedures and requirements for compliance.

ISC-220 Lean Manufacturing **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces students to the concept of lean manufacturing as a means of waste reduction. Topics include the examination of manufacturing operations and the incorporation of lean techniques to reduce waste, cost, time, and materials in manufacturing processes. Upon completion, students should be able to demonstrate an understanding of lean manufacturing systems and how they benefit the environment and business.

Co-Requisites: None
Pre-Requisites: None

JOURNALISM (JOU)

JOU-110 Introduction to Journalism **Lec 3 Lab 0 Clinic 0 Credit 3**
This course presents a study of journalistic news, feature, and sports writing. Emphasis is placed on basic news writing techniques and on related legal and ethical issues. Upon completion, students should be able to gather, write, and edit news, feature, and sports articles.

Co-Requisites: None
Pre-Requisites: None

MACHINING (MAC)

MAC-114 Introduction to Metrology **Lec 2 Lab 0 Clinic 0 Credit 2**
This course introduces the care and use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate the correct use of measuring instruments.

Co-Requisites: None
Pre-Requisites: None

MAC-115 Grinding Operations **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces surface and cylindrical grinding in the toolroom. Topics include safety and the basic setup and operation of surface and cylindrical grinding machines. Upon completion, students should be able to grind steps, slots, angles, radii, dress grinding wheels, and square blocks.

Co-Requisites: None
Pre-Requisites: None

MAC-121 Introduction to CNC **Lec 2 Lab 0 Clinic 0 Credit 2**
This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

Co-Requisites: None

Pre-Requisites: None

MAC-131 Blueprint Reading-Machining I Lec 1 Lab 2 Clinic 0 Credit 2
This course covers the basic principles of blueprint reading and sketching. Topics include multi-view drawings; interpretation of conventional lines; and dimensions, notes, and thread notations. Upon completion, students should be able to interpret basic drawings, visualize parts, and make pictorial sketches.

Co-Requisites: None
Pre-Requisites: None

MAC-141 Machining Applications I Lec 2 Lab 6 Clinic 0 Credit 4
This course provides an introduction to a variety of material-working processes that are common to the machining industry. Topics include safety, process-specific machining equipment, measurement devices, set-up and layout instruments, and common shop practices. Upon completion, students should be able to safely demonstrate basic machining operations, accurately measure components, and effectively use layout instruments.

Co-Requisites: None
Pre-Requisites: None

MAC-142 Machining Applications II Lec 2 Lab 6 Clinic 0 Credit 4
This course provides instruction in the wide variety of processes associated with machining. Topics include safety, equipment set-up, holding fixtures, tooling, cutting speeds and depths, metal properties, and proper finishes. Upon completion, students should be able to safely demonstrate advanced machining operations, accurately measure components, and produce accurate components with a proper finish.

Co-Requisites: None
Pre-Requisites: None

MAC-143 Machining Applications III Lec 2 Lab 6 Clinic 0 Credit 4
This course provides instruction in the field of advanced machining. Emphasis is placed on creating complex components, close-tolerance machining, precise measurement, and proper equipment usage. Upon completion, students should be able to demonstrate the ability to produce an accurately machined component with a quality finish using the proper machining process.

Co-Requisites: None
Pre-Requisites: None

MAC-151 Machining Calculations Lec 1 Lab 2 Clinic 0 Credit 2
This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

Co-Requisites: None
Pre-Requisites: None

MAC-152 Advanced Machining Calculations Lec 1 Lab 2 Clinic 0 Credit 2
This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.

Co-Requisites: None
Pre-Requisites: None

MAC-222 Advanced CNC Turning Lec 1 Lab 3 Clinic 0 Credit 2
This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.

Co-Requisites: None
Pre-Requisites: None

MAC-224 Advanced CNC Milling Lec 1 Lab 3 Clinic 0 Credit 2
This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.

Co-Requisites: None
Pre-Requisites: None

MAC-229 CNC Programming Lec 2 Lab 0 Clinic 0 Credit 2
This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory.

Co-Requisites: None
Pre-Requisites: None

MAC-231 Cam: Computer Numerical Control Turning Lec 1 Lab 4 Clinic 0 Credit 3
This course introduces Computer Numerical Control graphics programming and concepts for turning center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, students should be able to develop a job plan using CAM software, including machine selection, tool selection, operational sequence, speed, feed, and cutting depth.

Co-Requisites: None
Pre-Requisites: None

MAC-232 CAM: Computer Numerical Control Milling Lec 1 Lab 4 Clinic 0 Credit 3
This course introduces Computer Numerical Control graphics programming and concepts for machining center applications. Emphasis is placed on developing a shape file in a graphics CAM system and transferring coded information from CAM graphics to the CNC milling center. Upon completion, students should be able to develop a complete job plan using CAM software to create a multi-axis CNC program.

Co-Requisites: None
Pre-Requisites: None

MAC-233 Appl in CNC Machining Appl in CNC Machining Lec 2 Lab 12 Clinic 0 Credit 6
This capstone course provides students the opportunity to apply skills learned throughout the curriculum. Emphasis is placed on production of parts and assemblies using modern CNC machine tools. Upon completion, students should be able to manufacture complex parts using a variety of CNC machine tools.

Co-Requisites: None
Pre-Requisites: None

MAC-234 Advanced Multi-Axis Machining Lec 2 Lab 3 Clinic 0 Credit 3
This course includes multi-axis machining using machining centers with multi-axis capabilities. Emphasis is placed on generation of machining center input with a CAM system and setup of pallet changer and rotary system for multi-axis machining fixtures. Upon completion, students should be able to convert CAD to output for multi-axis machining centers, including tooling, setup, and debugging processes.

Co-Requisites: None
Pre-Requisites: None

MAC-234A Advanced Multi-Axis MacHining Lab Lec 0 Lab 3 Clinic 0 Credit 1
This course covers the application of multi-axis machining using machining centers with multi-axis capabilities. Emphasis is placed on generation of machining center input with a CAM system and setup of pallet changer and rotary system for multi-axis machining fixtures. Upon completion, students should be able to convert CAD to output for multi-axis machining centers, including tooling, setup, and debugging processes.

Co-Requisites: None
Pre-Requisites: None

MATHEMATICS (MAT)

MAT-003 Transition Math Lec 0 Lab 6 Clinic 0 Credit 3
This course provides an opportunity to customize foundational math content in specific math areas and will include developing a growth mindset. Topics include developing the academic habits, learning strategies, social skills, and growth mindset necessary to be successful in mathematics. Upon completion, students should be able to build a stronger foundation for success in their gateway level math courses by obtaining skills through a variety of instructional strategies with emphasis placed on the most essential prerequisite knowledge.

Co-Requisites: None
Pre-Requisites: None

MAT-110 Mathematical Measurement and Literacy Lec 2 Lab 2 Clinic 0 Credit 3

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

Co-Requisites: None
Pre-Requisites: None
Competencies: Demonstrate estimation skills and justify results. Use dimensional analysis to convert units of measurement. Employ fractions, percentages and proportions to solve contextual problems. Compute geometric measurements of perimeter, area, volume and angles. Use technology to analyze and interpret elements of personal finance. Compare and contrast measures of center and measures of dispersion. Interpret tables, charts, and graphs and communicate results.

MAT-143 Quantitative Literacy Lec 2 Lab 2 Clinic 0 Credit 3

This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students should be able to utilize quantitative information as consumers and to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media and encountered in everyday life.

Co-Requisites: None
Pre-Requisites: MAT-003 or MAT-025
Competencies: Judge the reasonableness of results using estimation, logical processes, and a proper understanding of quantity. Utilize proportional reasoning to solve contextual problems and make conversions involving various units of measurement. Identify, interpret, and compare linear and exponential rates of growth to make predictions and informed decisions based on data and graphs. Differentiate between simple and compound interest and analyze the long-term effects of saving, investing, and borrowing. Describe, analyze, and interpret statistical information such as graphs, tables, and summarized data to draw appropriate conclusions when presented with actual statistical studies. Determine probabilities and expected values and use them to assess risk and make informed decisions. Analyze civic and/or societal issues and critique decisions using relevant mathematics.

MAT-152 Statistical Methods I Lec 3 Lab 2 Clinic 0 Credit 4

This course provides a project-based approach to introductory statistics with an emphasis on using real-world data and statistical literacy. Topics include descriptive statistics, correlation and regression, basic probability, discrete and continuous probability distributions, confidence intervals and hypothesis testing. Upon completion, students should be able to use appropriate technology to describe important characteristics of a data set, draw inferences about a population from sample data, and interpret and communicate results.

Co-Requisites: None
Pre-Requisites: MAT-003 or MAT-025
Competencies: Organize, display, calculate, and interpret descriptive statistics. Apply basic rules of probability. Identify and apply appropriate probability distributions. Perform regression analysis. Analyze sample data to draw inferences about a population parameter. Communicate results through a variety of media.

MAT-171 Precalculus Algebra Lec 3 Lab 2 Clinic 0 Credit 4

This course is designed to develop topics which are fundamental to the study of Calculus. Emphasis is placed on solving equations and inequalities, solving systems of equations and inequalities, and analysis of functions (absolute value, radical, polynomial, rational, exponential, and logarithmic) in multiple representations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to algebra-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: MAT-003 or MAT-035
Competencies: Use analytical, graphical, and numerical representations to solve absolute value, radical, polynomial, rational, exponential, and logarithmic equations with both real and complex solutions. Use analytical, graphical, and numerical representations to solve absolute value, polynomial and rational inequalities with real solutions. Use analytical, graphical, and numerical representations to analyze absolute value, radical, polynomial, rational, exponential and logarithmic functions with both and real complex zeros. Use multiple methods to solve problems involving systems of equations and apply to decomposing partial fractions. Construct the composition and inverse of functions. Use polynomial, exponential and logarithmic functions to model various real world situations in order to analyze, draw conclusions, and make predictions.

MAT-172 Precalculus Trigonometry Lec 3 Lab 2 Clinic 0 Credit 4

This course is designed to develop an understanding of topics which are fundamental to the study of Calculus. Emphasis is placed on the analysis of trigonometric functions in multiple representations, right and oblique triangles, vectors, polar coordinates, conic

sections, and parametric equations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to trigonometry-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: MAT-171

MAT-271 Calculus I **Lec 3 Lab 2 Clinic 0 Credit 4**
This course is designed to develop the topics of differential and integral calculus. Emphasis is placed on limits, continuity, derivatives and integrals of algebraic and transcendental functions of one variable. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to derivative-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: One: MAT-172 or MAT-175

MAT-272 Calculus II **Lec 3 Lab 2 Clinic 0 Credit 4**
This course is designed to develop advanced topics of differential and integral calculus. Emphasis is placed on the applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to integral-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: MAT-271

MAT-273 Calculus III **Lec 3 Lab 2 Clinic 0 Credit 4**
This course is designed to develop the topics of multivariate calculus. Emphasis is placed on multivariate functions, partial derivatives, multiple integration, solid analytical geometry, vector valued functions, and line and surface integrals. Upon completion, students should be able to select and use appropriate models and techniques for finding the solution to multivariate-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: MAT-272

MAT-285 Differential Equations **Lec 2 Lab 2 Clinic 0 Credit 3**
This course provides an introduction to topics involving ordinary differential equations. Emphasis is placed on the development of abstract concepts and applications for first-order and linear higher-order differential equations, systems of differential equations, numerical methods, series solutions, eigenvalues and eigenvectors, and LaPlace transforms. Upon completion, students should be able to demonstrate understanding of the theoretical concepts and select and use appropriate models and techniques for finding solutions to differential equations-related problems with and without technology.

Co-Requisites: None
Pre-Requisites: MAT-272

MECHANICAL (MEC)

MEC-111 Machine Processes I **Lec 1 Lab 4 Clinic 0 Credit 3**
This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to manufacture simple parts to specified tolerance.

Co-Requisites: None
Pre-Requisites: None

MEDICAL ASSISTING (MED)

MED-110 Orientation to Medical Assisting **Lec 1 Lab 0 Clinic 0 Credit 1**
This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.

Co-Requisites: None
Pre-Requisites: None

MED-114 Professional Interaction in Health Care Lec 1 Lab 0 Clinic 0 Credit 1
This course is designed to identify various patient behaviors encountered in the medical setting. Emphasis is placed on stressors related to illness, cultural influences, death and dying, and needs specific to patients. Upon completion, students should be able to utilize appropriate methods of verbal and nonverbal communication with empathy and impartiality.

Co-Requisites: None
Pre-Requisites: None

MED-116 Introduction to Anatomy & Physiology Lec 3 Lab 2 Clinic 0 Credit 4
This course introduces basic anatomy and physiology. Emphasis is placed on the relationship between body structure and function and the procedures common to health care. Upon completion, students should be able to identify body system components and functions relating this knowledge to the delivery of health care.

Co-Requisites: None
Pre-Requisites: None

MED-118 Medical Law and Ethics Lec 2 Lab 0 Clinic 0 Credit 2
This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.

Co-Requisites: None
Pre-Requisites: None

MED-121 Medical Terminology I Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

Co-Requisites: None
Pre-Requisites: None

MED-122 Medical Terminology II Lec 3 Lab 0 Clinic 0 Credit 3
This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

Co-Requisites: None
Pre-Requisites: MED-121

MED-130 Administrative Office Procedures I Lec 1 Lab 2 Clinic 0 Credit 2
This course introduces medical office administrative procedures. Topics include appointment processing, written and oral communications, medical records, patient orientation, and safety. Upon completion, students should be able to perform basic administrative skills within the medical environment.

Co-Requisites: None
Pre-Requisites: None

MED-131 Administrative Office Procedures II Lec 1 Lab 2 Clinic 0 Credit 2
This course provides medical office procedures in both economic and management skills. Topics include physical plant maintenance, equipment and supplies, liability coverage, medical economics, and introductory insurance procedures. Upon completion, students should be able to manage the economics of the medical office and supervise personnel.

Co-Requisites: None
Pre-Requisites: None

MED-140 Examining Room Procedures I Lec 3 Lab 4 Clinic 0 Credit 5
This course provides instruction in clinical examining room procedures. Topics include asepsis, infection control, assisting with exams and treatment, patient education, preparation and administration of medications, EKG, vital signs, and medical emergencies. Upon completion, students should be able to demonstrate competence in exam room procedures.

Co-Requisites: None
Pre-Requisites: None

MED-150 Laboratory Procedures I **Lec 3 Lab 4 Clinic 0 Credit 5**
This course provides instruction in basic lab techniques used by the medical assistant. Topics include lab safety, quality control, collecting and processing specimens, performing selective tests, phlebotomy, screening and follow-up of test results, and OSHA/CLIA regulations. Upon completion, students should be able to perform basic lab tests/skills based on course topics.

Co-Requisites: None
Pre-Requisites: MED-140;

MED-240 Examining Room Procedures II **Lec 3 Lab 4 Clinic 0 Credit 5**
This course is designed to expand and build upon skills presented in MED 140. Emphasis is placed on advanced exam room procedures. Upon completion, students should be able to demonstrate enhanced competence in selected exam room procedures.

Co-Requisites: None
Pre-Requisites: MED-140

MED-260 MED Clinical Practicum **Lec 0 Lab 0 Clinic 15 Credit 5**
This course provides the opportunity to apply clinical, laboratory, and administrative skills in a medical facility. Emphasis is placed on enhancing competence in clinical and administrative skills necessary for comprehensive patient care and strengthening professional communications and interactions. Upon completion, students should be able to function as an entry-level health care professional.

Co-Requisites: None
Pre-Requisites: None

MED-264 Medical Assisting Overview **Lec 2 Lab 0 Clinic 0 Credit 2**
This course provides an overview of the complete medical assisting curriculum. Emphasis is placed on all facets of medical assisting pertinent to administrative, laboratory, and clinical procedures performed in the medical environment. Upon completion, students should be able to demonstrate competence in the areas covered on the national certification examination for medical assistants.

Co-Requisites: MED-260
Pre-Requisites: None

MED-270 Symptomatology **Lec 2 Lab 2 Clinic 0 Credit 3**
This course covers the study of disease symptoms and the appropriate actions taken by medical assistants in a medical facility in relation to these symptoms. Emphasis is placed on interviewing skills and appropriate triage, preparing patients for procedures, and screening test results. Upon completion, students should be able to recognize how certain symptoms relate to specific diseases, recognize emergency situations, and take appropriate actions.

Co-Requisites: None
Pre-Requisites: None

MED-272 Drug Therapy **Lec 3 Lab 0 Clinic 0 Credit 3**
This course focuses on major drug groups, including their side effects, interactions, methods of administration, and proper documentation. Emphasis is placed on the theory of drug administration. Upon completion, students should be able to identify, spell, recognize side effects of, and document the most commonly used medications in a physician's office.

Co-Requisites: None
Pre-Requisites: None

MED-276 Patient Education **Lec 1 Lab 2 Clinic 0 Credit 2**
This course is designed to provide communication skills, basic education principles, and knowledge of available community resources and to apply this knowledge to the clinical setting. Emphasis is placed on identifying appropriate community resources, developing patient education materials, and perfecting written and oral communication skills. Upon completion, students should be able to instruct, communicate effectively, and act as a liaison between the patient and community agencies.

Co-Requisites: None
Pre-Requisites: None

MARKETING AND RETAILING (MKT)

MKT-120 Principles of Marketing **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.

Co-Requisites: None
Pre-Requisites: None

MKT-223 Customer Experience Lec 3 Lab 0 Clinic 0 Credit 3
This course stresses the importance of customer relations in the business world. Emphasis is placed on learning how to respond to complex customer requirements and to efficiently handle stressful situations. Upon completion, students should be able to demonstrate the ability to handle customer relations.

Co-Requisites: None
Pre-Requisites: None

MKT-232 Social Media Marketing Lec 2 Lab 2 Clinic 0 Credit 3
This course is designed to build students' social media marketing skills by utilizing projects that give students hands on experience implementing social media marketing strategies. Topics include integrating different social media technologies into a marketing plan, creating social media marketing campaigns, and applying appropriate social media tools. Upon completion, students should be able to use social media technologies to create and improve marketing efforts for businesses.

Co-Requisites: None
Pre-Requisites: None
Competencies: Integrate different social media techniques into a marketing plan. Describe social media marketing strategies. Create a social media marketing campaign, applying appropriate social media tools. Create a plan to improve marketing efforts for businesses using social media.

MAINTENANCE (MNT)

MNT-110 Introduction to Maintenance Procedures Lec 1 Lab 3 Clinic 0 Credit 2
This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

Co-Requisites: None
Pre-Requisites: None

MNT-165 Mechanical Industrial Systems Lec 1 Lab 3 Clinic 0 Credit 2
This course covers mechanical components used in industrial machine operations. Emphasis is placed on mechanical drives, belts, gears, couplings, electrical drives, and other related topics. Upon completion, students should be able to demonstrate an understanding of industrial machines and be able to maintain this equipment.

Co-Requisites: None
Pre-Requisites: None

MNT-220 Rigging and Moving Lec 1 Lab 3 Clinic 0 Credit 2
This course covers the principles of safe rigging practices for handling, placing, installing, and moving heavy machinery and equipment. Topics include safety, weight and dimensional estimation, positioning of equipment slings, rollers, jacks, levers, dollies, ropes, chains, padding, and other related topics. Upon completion, students should be able to safely relocate and set up equipment using accepted rigging practices.

Co-Requisites: None
Pre-Requisites: None

MNT-240 Indust Equip Troubleshoot Lec 1 Lab 3 Clinic 0 Credit 2
This course covers the various service procedures, tools, instruments, and equipment necessary to analyze and repair typical industrial equipment. Emphasis is placed on electro-mechanical and fluid power equipment troubleshooting, calibration, and repair, including common techniques and procedures. Upon completion, students should be able to troubleshoot and repair industrial equipment.

Co-Requisites: None
Pre-Requisites: None

MNT-263 Electrical-Pneumatic Components Lec 2 Lab 4 Clinic 0 Credit 4
This course introduces principles and practical applications of electrical/pneumatic control systems and primary control devices incorporated in those systems. Emphasis is placed on reading and interpreting ladder diagrams, building control circuits, and troubleshooting valves, switches, and sensors. Upon completion, students should be able to design, build, and troubleshoot basic electro-pneumatic control systems.

Co-Requisites: None
Pre-Requisites: None

MUSIC (MUS)

MUS-110 Music Appreciation **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music.

Co-Requisites: None
Pre-Requisites: None

MUS-112 Introduction to Jazz **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the origins and musical components of jazz and the contributions of its major artists. Emphasis is placed on the development of discriminating listening habits, as well as the investigation of the styles and structural forms of the jazz idiom. Upon completion, students should be able to demonstrate skills in listening and understanding this form of American music.

Co-Requisites: None
Pre-Requisites: None

NETWORK OPERATING SYSTEMS (NOS)

NOS-120 Linux/UNIX Single User **Lec 2 Lab 2 Clinic 0 Credit 3**
This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

Co-Requisites: None
Pre-Requisites: None

NOS-130 Windows Single User **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

Co-Requisites: None
Pre-Requisites: None

NOS-230 Windows Administration I **Lec 2 Lab 2 Clinic 0 Credit 3**
This course covers the installation and configuration of a Windows Server operating system. Emphasis is placed on the basic configuration of core network services, Active Directory and group policies. Upon completion, students should be able to install and configure a Windows Server operating system.

Co-Requisites: None
Pre-Requisites: None

NURSING (NUR)

NUR-111 Introduction to Health Concepts **Lec 4 Lab 6 Clinic 6 Credit 8**
This course introduces the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts within each domain including medication administration, assessment, nutrition, ethics, interdisciplinary teams, informatics, evidence-based practice, individual-centered care, and quality improvement. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: None

NUR-112 Health-Illness Concepts **Lec 3 Lab 0 Clinic 6 Credit 5**
This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of acid-base, metabolism, cellular regulation, oxygenation, infection, stress/coping, health-wellness-illness, communication, caring interventions, managing care, safety, quality improvement, and informatics. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: NUR-111

NUR-113 Family Health Concepts Lec 3 Lab 0 Clinic 6 Credit 5
This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of oxygenation, sexuality, reproduction, grief/loss, mood/affect, behaviors, development, family, health-wellness-illness, communication, caring interventions, managing care, safety, and advocacy. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: NUR-111

NUR-114 Holistic Health Concepts Lec 3 Lab 0 Clinic 6 Credit 5
This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, inflammation, sensory perception, stress/coping, mood/affect, cognition, self, violence, health-wellness-illness, professional behaviors, caring interventions, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: NUR-111

NUR-117 Pharmacology Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces information concerning sources, effects, legalities, and the safe use of medications as therapeutic agents. Emphasis is placed on nursing responsibility, accountability, pharmacokinetics, routes of medication administration, contraindications and side effects.Upon completion, students should be able to compute dosages and administer medication safely.

Co-Requisites: None
Pre-Requisites: None

NUR-118 Nutrition and Diet Therapy Lec 2 Lab 0 Clinic 0 Credit 2
This course covers the six nutrient categories and provides an overview of diet recommendations for promotion and maintenance of health. Topics include the U.S. Department of Agricultue dietary standard recommended for individuals across the life span, energy balance, and dietary modifications for common alterations in health. Upon completion, students should be able to complete a nutritional assessment, analyze diets, and recommend dietary adaptations to meet individual health needs.

Co-Requisites: None
Pre-Requisites: None

NUR-211 Health Care Concepts Lec 3 Lab 0 Clinic 6 Credit 5
This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, infection, immunity, mobility, comfort, behaviors, health-wellness-illness, clinical decision-making, caring interventions, managing care, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: NUR-111

NUR-212 Health System Concepts Lec 3 Lab 0 Clinic 6 Credit 5
This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of grief/loss, violence, health-wellness-illness, collaboration, managing care, safety, advocacy, legal issues, policy, healthcare systems, ethics, accountability, and evidence-based practice. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course

Co-Requisites: None
Pre-Requisites: NUR-111

NUR-213 Complex Health Concepts Lec 4 Lab 3 Clinic 15 Credit 10
This course is designed to assimilate the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of fluid/electrolytes, metabolism, perfusion, mobility, stress/coping, violence, health-wellness-illness, professional behaviors, caring interventions, managing care, healthcare systems, and quality improvement. Upon completion, students should be able to demonstrate the knowledge, skills, and attitudes necessary to provide quality, individualized, entry level nursing care.

Co-Requisites: NUR-112, NUR-113, NUR-114, NUR-211 and NUR-212
Pre-Requisites: NUR-111

NUR-214 Nsg Transition Concepts Lec 3 Lab 0 Clinic 3 Credit 4
This course is designed to introduce concepts within the three domains of the individual, healthcare, and nursing as the LPN transitions to the ADN role. Emphasis is placed on the concepts within each domain including evidenced-based practice, quality

improvement, communication, safety, interdisciplinary team, clinical decision-making, informatics, assessment, caring, and health-wellness-illness. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course.

Co-Requisites: None
Pre-Requisites: None

OFFICE SYSTEMS TECHNOLOGY (OST)

OST-136 Word Processing Lec 2 Lab 2 Clinic 0 Credit 3
This course is designed to introduce word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment.

Co-Requisites: None
Pre-Requisites: None

OST-148 Medical Insurance and Billing Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces fundamentals of medical insurance and billing. Emphasis is placed on the medical billing cycle to include third party payers, coding concepts, and form preparation. Upon completion, students should be able to explain the life cycle of and accurately complete a medical insurance claim.

Co-Requisites: None
Pre-Requisites: None

OST-149 Medical Legal Issues Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

Co-Requisites: None
Pre-Requisites: None

OST-164 Office Editing Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text.

Co-Requisites: None
Pre-Requisites: None

OST-243 Med Office Simulation Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces medical systems used to process information in the automated office. Topics include traditional and electronic information resources, storing and retrieving information, and the billing cycle. Upon completion, students should be able to use the computer accurately to schedule, bill, update, and make corrections.

Co-Requisites: None
Pre-Requisites: OST-148

OST-247 Procedure Coding Lec 2 Lab 2 Clinic 0 Credit 3
This course provides in-depth coverage of procedural coding. Emphasis is placed on CPT and HCPCS coding systems. Upon completion, students should be able to properly code procedures and services performed in a medical facility.

Co-Requisites: None
Pre-Requisites: One: MED-121 or OST-141

OST-248 Diagnostic Coding Lec 2 Lab 2 Clinic 0 Credit 3
This course provides an in-depth study of diagnostic coding. Emphasis is placed on ICD coding system. Upon completion, students should be able to properly code diagnoses in a medical facility.

Co-Requisites: None
Pre-Requisites: One: MED-121 or OST-141

OST-249 Medical Coding Certification Preparation Lec 2 Lab 3 Clinic 0 Credit 3
This course provides instruction that will prepare students to sit for a national coding certification exam. Topics include diagnostic and procedural coding. Upon completion, students should be able to sit for various medical coding certification exams.

Co-Requisites: None
Pre-Requisites: All: OST-247 and OST-248

OST-264 Medical Auditing Lec 3 Lab 0 Clinic 0 Credit 3
This course provides instruction on how to apply regulations and policies to perform medical record audits for provider services. Emphasis is placed on understanding the scope of an audit, statistical sampling methodologies, performing a medical record audit, and compiling data for reports to improve the revenue cycle for healthcare services. Upon completion, students should be able to perform a medical audit.

Co-Requisites: None
Pre-Requisites: All: OST-247 and OST-248

OST-280 Electronic Health Records Lec 2 Lab 2 Clinic 0 Credit 3
This course focuses on the use of electronic health records in medical documentation and patient management. Emphasis is placed on creating and maintaining patient medical information, scheduling patient appointments, documenting patient encounters, and billing/insurance claim processing. Upon completion, students should be able to perform the required software tasks following a patient visit from start to finish.

Co-Requisites: None
Pre-Requisites: One: CIS-110, CIS-111, or OST-137

PUBLIC ADMINISTRATION (PAD)

PAD-151 Intro to Public Admin Lec 3 Lab 0 Clinic 0 Credit 3
This course includes an overview of the role of the public administrator in government and an examination of the development and implementation of public policy. Topics include public personnel administration and management, decision making, public affairs, ethics, organizational theories, budgetary functions within governmental agencies, and other governmental issues. Upon completion, students should be able to explain the functions of government in society and in the lives of people composing that society.

Co-Requisites: None
Pre-Requisites: None

PAD-152 Ethics in Government Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the ethical issues and problems within the public administration field. Emphasis is placed on building analytical skills, stimulating moral imagination, and recognizing the discretionary power of the administrator's role. Upon completion, students should be able to understand the moral dimensions of public administrative decision making.

Co-Requisites: None
Pre-Requisites: None

PAD-251 Public Finance & Budgeting Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an overview of the public finance and budgeting processes used in the allocation of public resources to meet differing public interests. Topics include the political environment, government expenditures, revenues, taxation, budgetary process theories and techniques, and the relation of government finance to the economy. Upon completion, students should be able to recognize impacts of government revenue and expenditure policies and understand the role of budgeting in executing governmental policy.

Co-Requisites: None
Pre-Requisites: None

PAD-252 Public Policy Analysis Lec 3 Lab 0 Clinic 0 Credit 3
This course is a study of methods and techniques used to determine the effectiveness of public programs. Emphasis is placed on the concept of ecology and environmental impact, informal groups and information networks, and the relationship between public and private sectors. Upon completion, students should be able to analyze case studies with the use of political analysis techniques.

Co-Requisites: None
Pre-Requisites: None

PAD-254 Grant Writing **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers the basic techniques of successful grant writing. Topics include concept development, funding sources research, and writing skills relevant to the grants process. Upon completion, students should be able to demonstrate a basic understanding of the grants process.

Co-Requisites: None
Pre-Requisites: None

PROFESSIONAL CRAFTS: CLAY (PCC)

PCC-110 Intro to Pottery **Lec 3 Lab 15 Clinic 0 Credit 8**
This course introduces pottery making for potters, including clay preparation, wheel throwing and trimming, surface decoration, and glazing and firing techniques. Topics include clay bodies and the mixing process, potter's wheel basics, glazing, kiln loading and firing, and safety issues. Upon completion, students should be able to prepare clay; center and throw basic forms; trim, mix, and apply basic glazes; and load and fire bisque kilns.

Co-Requisites: None
Pre-Requisites: None

PCC-111 Functional Pottery I **Lec 3 Lab 15 Clinic 0 Credit 8**
This course covers the important elements of designing and producing utilitarian pottery, including wall thickness, balance and proportion, surface decoration, and glazing and firing techniques. Topics include bowls, mugs, plates, casseroles, stemware, and bottles, with emphasis on safe glazing and supervised firing. Upon completion, students should be able to produce a variety of functional pots, apply a glaze, and load and assist firing a kiln.

Co-Requisites: None
Pre-Requisites: None

PCC-112 History of Pottery **Lec 1 Lab 0 Clinic 0 Credit 1**
This course examines the historical development of ceramics and the contributions made by specific cultures or countries. Topics include potters from early societies, including the Mediterranean countries, China, Cyprus, and Crete with emphasis on design, technique, and firing methods. Upon completion, students should be able to identify numerous historical pottery types, discuss the societies which produced them, and demonstrate knowledge of their production methods.

Co-Requisites: None
Pre-Requisites: None

PCC-113 Contemporary Pottery **Lec 1 Lab 0 Clinic 0 Credit 1**
This course surveys numerous 19th- and 20th-century potters and artists who have contributed to the contemporary ceramics movement. Topics include artists such as Leach, Cardew, and Hamada and the important design and technical contributions these potters have made to the ceramics movement. Upon completion, students should be able to identify numerous contemporary potters and their work.

Co-Requisites: None
Pre-Requisites: None

PCC-117 Glaze Testing **Lec 1 Lab 3 Clinic 0 Credit 2**
This course provides the opportunity to identify and test numerous glazes for a personal glaze inventory. Topics include firing temperature, color, texture, methods of adjustment, and methods of testing on sample tiles. Upon completion, students should be able to select glaze recipes; weigh out test batches; apply glazes to tile; and fire, adjust results, and refire.

Co-Requisites: None
Pre-Requisites: None

PCC-121 Handbuilding I **Lec 2 Lab 3 Clinic 0 Credit 3**
This course introduces students to the basic handbuilding processes of creating three-dimensional functional and sculptural vessels in clay. Emphasis is placed on using design elements and principles for the purpose of forming and decorating ceramic vessels. Upon completion students should be able to demonstrate skills in pinch, coil, and slab methods as well as function and creative expression.

Co-Requisites: None
Pre-Requisites: None

PCC-210 Functional Pottery II **Lec 3 Lab 15 Clinic 0 Credit 8**
This course expands previous wheel throwing skills and involves larger, more complicated forms, production skills, slip and glaze theory, kiln theory, and glaze firing. Topics include centering and throwing larger amounts of clay, production techniques, record

keeping, studio layout, kiln design, and fuel systems. Upon completion, students should be able to produce pots with competent handles, proper lids, and matching multiple forms and identify kiln properties and burner types.

Co-Requisites: None
Pre-Requisites: PCC-111

PCC-211 Decorative Pottery Lec 3 Lab 15 Clinic 0 Credit 8
This course continues previous functional skill development, including limited production and one-of-a-kind pieces with emphasis on forming techniques. Topics include multiple cylinder forms, thrown additions, production skills, glaze testing, surface decoration, and firing techniques. Upon completion, students should be able to produce entry-level professional work for show and sale using a variety of forming and finishing techniques.

Co-Requisites: None
Pre-Requisites: PCC-111

PROFESSIONAL CRAFTS: DESIGN (PCD)

PCD-110 Intro to Craft Design Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces the basic principles, elements, vocabulary,and process of two-dimensional design within the context ofprofessionally produced crafts. Emphasis is placed on general designconcepts and vocabulary, conceptual thinking, design processapplication, and observational skills. Upon completion, studentsshould be able to demonstrate enhanced observational skills and aworking knowledge of design vocabulary, concepts, and processes.

Co-Requisites: None
Pre-Requisites: None

PCD-111 Advanced Craft Design Lec 1 Lab 3 Clinic 0 Credit 2
This course explores the conceptual process of design as applied tothe three-dimensional form. Emphasis is placed on solvingthree-dimensional design problems which are material, function, site,or client specific. Upon completion, students should be able toapply an enhanced understanding of the relationship between designconcept, process, and product in three-dimensional form.

Co-Requisites: None
Pre-Requisites: PCD-110

PCD-211 Prof Craft Design Lec 1 Lab 3 Clinic 0 Credit 2
This course covers the development of customer- or site-influenceddesign and the development and design of craft marketing promotionalmaterials. Topics include customer-guided, site-specific, and otherdesign influences and development and design of logos, hang tags, websites, brochures, and related promotional materials. Uponcompletion, students should be able to design within site, customer,or other limitations and complete a design package for their personalmarketing needs.

Co-Requisites: None
Pre-Requisites: PCD-110

PROFESSIONAL CRAFTS: FIBER (PCF)

PCF-110 Intro to Weaving Lec 2 Lab 15 Clinic 0 Credit 7
This course introduces weaving and the procedures for warping a loom and fiber identification as used in professional weaving. Emphasis is placed on tabby, twills, tapestry, laces, brocades, block theory, pattern drafting, and finishing techniques. Upon completion, students should be able to apply weaving procedures and technical skill to woven samples and some finished objects.

Co-Requisites: None
Pre-Requisites: None

PCF-111 Intermediate Weaving Lec 2 Lab 10 Clinic 0 Credit 7
This course covers intermediate elements of weaving and weaving theory including structural design, the use of multi-shafts, and computer drafting. Topics include tied structures such as summer and winter, double weave, overshot, supplementary warp, and loom-controlled laces. Upon completion, students should be able to explore the technical aspects of weaving and fibers through samples and apply that knowledge to finished pieces.

Co-Requisites: None
Pre-Requisites: PCF-110

PCF-113 Sewing With Handwovens Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces basic machine and hand sewing techniques with an emphasis on sewing hand-woven cloth. Topics include seam types, hems, interfacing, and closures applicable to a range of products made with handwoven textiles. Upon completion,

students should be able to design and professionally stitch a variety of products including garments, home decor products, and accessories.

Co-Requisites: None
Pre-Requisites: PCF-111

PCF-120 Color and Pattern Design Lec 1 Lab 0 Clinic 0 Credit 1
This course covers color theory and pattern specifically for use with fibers. Topics include color systems, value, palette development, color mixing, and repeating pattern as used in professional weaving. Upon completion, students should be able to identify hue, value, color systems, and pattern and demonstrate an understanding of their application to woven pieces;

Co-Requisites: None
Pre-Requisites: None

PCF-121 History of Textiles Lec 1 Lab 0 Clinic 0 Credit 1
This course is a cultural survey of the major weaving traditions of the world. Topics include weaving traditions of North and South America, Asia, Africa, and Europe. Upon completion, students should be able to recognize materials, design, and techniques of various cultures and demonstrate an understanding of social implications of the textile craft.

Co-Requisites: None
Pre-Requisites: None

PCF-122 Fiber Dyeing Lec 2 Lab 3 Clinic 0 Credit 3
This course provides a practical application of dye theory including dye types, methods, and color development. Topics include fiber reactive dyes, acid dyes, vat dyes, pigments, ikat, warp painting, variegated dyeing, and dye sample record keeping. Upon completion, students should be able to accurately apply dye to yarns and reproduce colors using a variety of appropriate methods.

Co-Requisites: None
Pre-Requisites: None

PCF-210 Contemporary Textiles Lec 1 Lab 0 Clinic 0 Credit 1
This course provides a survey of weaving and textile traditions from 1900 to present, including major technical developments in industry, current trends and critical analysis. Topics include the Arts and Crafts Movement, the Bauhaus, the influence of new fibers on industry, and contemporary fiber art and textile designers. Upon completion, students should be able to recognize the work of contemporary fiber artists and critically analyze their work.

Co-Requisites: None
Pre-Requisites: None

PCF-211 Production Methods for Textiles Lec 2 Lab 12 Clinic 0 Credit 6
This course provides a format for designing prototypes and/or multiples for professional textile work. Topics include designing for specific price categories, studio organization and record keeping as well as production methods for hand weaving, dyeing, printing and sewing. Upon completion, students should be able to develop prototypes and finished pieces for sale with a plan for production in their own studio.

Co-Requisites: None
Pre-Requisites: None

PCF-213 Professional Textiles Lec 2 Lab 10 Clinic 0 Credit 7
This course provides an opportunity for students to design and create an original cohesive body of textile work suitable for public exhibition. Emphasis is placed on development of prototypes, finished work, presentation and portfolio. Upon completion, students should be able to prepare and showcase work to galleries and the public in a professional manner.

Co-Requisites: None
Pre-Requisites: PCF-113

PROCESS CONTROL INSTRUMENTATIO (PCI)

PCI-162 Instrumentation Controls Lec 2 Lab 3 Clinic 0 Credit 3
This course surveys industrial process control instrumentation concepts, devices, and systems. Topics include process control devices and process control applications associated with industrial instrumentation. Upon completion, students should be able to demonstrate a basic understanding of the various industrial process control and instrumentation systems.

Co-Requisites: None
Pre-Requisites: None

PROFESSIONAL CRAFTS: JEWELRY (PCJ)

PCJ-111 Intro to Jewelry Lec 2 Lab 15 Clinic 0 Credit 7
This course introduces jewelry construction for professional jewelry design and production. Topics include fabrication techniques, basic tool usage, mechanisms, finishing techniques, and studio safety. Upon completion, students should be able to safely solder and rivet to construct and finish jewelry and hollowware.

Co-Requisites: None
Pre-Requisites: None

PCJ-112 Jewelry Forming Tech Lec 2 Lab 15 Clinic 0 Credit 7
This course introduces forming techniques. Emphasis is placed on developing skills to form jewelry and hollowware by raising, forging, shell forming, die forming, and casting. Upon completion, students should be able to produce objects that utilize forming techniques.

Co-Requisites: None
Pre-Requisites: None

PCJ-113 Jewelry Decorative Tech. Lec 3 Lab 9 Clinic 0 Credit 6
This course introduces decorative techniques. Emphasis is placed on producing objects incorporating repousse granulation, reticulation, inlay, stone setting, patinas, anodizing, and etching. Upon completion, students should be able to demonstrate decorative techniques to enhance the surface of jewelry and hollowware.

Co-Requisites: None
Pre-Requisites: None

PCJ-121 Jewelry Design I Lec 2 Lab 0 Clinic 0 Credit 2
This course introduces two- and three-dimensional jewelry and hollowware design. Emphasis is placed on applying principles, elements, and relationships of design to jewelry and hollowware. Upon completion, students should be able to design jewelry and hollowware and demonstrate visual problem-solving skills.

Co-Requisites: None
Pre-Requisites: None

PCJ-122 Jewelry Design II Lec 2 Lab 0 Clinic 0 Credit 2
This course introduces rendering jewelry and hollowware. Topics include two-point perspective, shading, and rendering metals and stones. Upon completion, students should be able to demonstrate visual presentation skills for jewelry and hollowware.

Co-Requisites: None
Pre-Requisites: None

PCJ-123 Jewelry Design III Lec 2 Lab 0 Clinic 0 Credit 2
This course is a continuation of PCJ 122. Emphasis is placed on producing renderings and/or models of original designs of jewelry and hollowware. Upon completion, students should be able to demonstrate visual presentation skills and apply the principles, elements, and relationships of design.

Co-Requisites: None
Pre-Requisites: PCJ-122

PCJ-214 Jewelry Production Tech Lec 2 Lab 15 Clinic 0 Credit 7
This course covers production techniques and development of a production and studio plan. Topics include making and cutting rubber molds, wax injection, multiple spruing, and applying jigs for production. Upon completion, students should be able to develop a production and studio plan and produce multiple jewelry and hollowware.

Co-Requisites: None
Pre-Requisites: None

PCJ-215 Advanced Jewelry Lec 2 Lab 15 Clinic 0 Credit 7
This course covers basic jewelry repair and provides an opportunity to develop a body of work for a portfolio or exhibition. Emphasis is placed on prong tipping, ring sizing, and chain repairing and on designing, producing, and presenting objects for a portfolio or exhibition. Upon completion, students should be able to demonstrate jewelry repair skills and complete a body of work for a portfolio or exhibition.

Co-Requisites: None
Pre-Requisites: None

PCJ-261 Enameling **Lec 1 Lab 3 Clinic 0 Credit 2**
This course introduces materials, equipment, procedures, and health hazards involved in producing enamelware. Emphasis is placed on producing enamelware incorporating limoge, basse taille, and cloisonne techniques. Upon completion, students should be able to demonstrate skills needed to safely produce enamelware by preparing the metal and enamel, applying the enamel, firing, and finishing.

Co-Requisites: None
Pre-Requisites: None

PROFESSIONAL CRAFTS (PCR)

PCR-112 20TH-CENTURY Crafts **Lec 2 Lab 0 Clinic 0 Credit 2**
This course surveys the origins and influences of American craft from the late 19th century to the present. Emphasis is placed on the relationship between period stylistic trends in craft, the arts, and architecture and larger societal influences. Upon completion, students should be able to demonstrate an understanding of design movements and social events of the 20th century and their influence on American craft.

Co-Requisites: None
Pre-Requisites: None

PCR-210 Studio Craft Photo **Lec 1 Lab 3 Clinic 0 Credit 2**
This course introduces the concepts and processes of 35mm studio photography for the professional crafter. Topics include the 35mm camera and related equipment, basic studio lighting theory, simple to advanced lighting techniques, composition, print and slide evaluation, and marketing applications. Upon completion, students should be able to demonstrate knowledge of the 35mm camera and related equipment, studio lighting, and composition and complete an entry-level portfolio.

Co-Requisites: None
Pre-Requisites: None

PCR-212 Craft Marketing **Lec 2 Lab 0 Clinic 0 Credit 2**
This course introduces marketing and business planning as applied to hand crafts and development of a written marketing plan. Emphasis is placed on self-evaluation, goal setting, development of a business idea, presentation skills, professional image, and organizing and writing a marketing plan. Upon completion, students should be able to demonstrate realistic craft marketing goals, individual presentation skills, and professional image and organize, write, and present a marketing plan.

Co-Requisites: None
Pre-Requisites: None

PCR-213 Craft Enterprise **Lec 2 Lab 0 Clinic 0 Credit 2**
This course covers financial information and small business skills needed to develop a written business plan combining a craft marketing plan and studio planning. Topics include business plan analysis, break-even point, cash flow, filing systems, operations, policies, manual and computerized bookkeeping, writing, and presentational skills. Upon completion, students should be able to write a craft business plan, project a cash flow statement, explain break-even point, and establish filing and record systems.

Co-Requisites: None
Pre-Requisites: PCR-212

PROFESSIONAL CRAFTS: WOOD (PCW)

PCW-110 Intro to Woodworking **Lec 3 Lab 15 Clinic 0 Credit 8**
This course introduces the properties of wood, basic machine and tool use and safety, box design and construction, and various furniture joinery for woodworkers. Topics include the technical study of wood, hand woodworking methods of box making, assorted box and framing joinery, and hand finishing methods. Upon completion, students should be able to demonstrate woodworking joinery, box design and construction techniques, and knowledge of wood properties and their effect on furniture design.

Co-Requisites: None
Pre-Requisites: None

PCW-111 Framing Joinery/Design **Lec 3 Lab 15 Clinic 0 Credit 8**
This course introduces design embellishment techniques and design and construction of various furniture functions through the use of framing structures. Topics include designing and making mirror frames, stools, benches, coffee tables, and dining tables, with emphasis on specialty techniques such as woodbending, veneering, and finishing. Upon completion, students should be able to design and make furniture and accessories utilizing framing construction and specialty design techniques.

Co-Requisites: None
Pre-Requisites: PCW-110 and be enrolled in 30360;

PCW-112 Production Design **Lec 2 Lab 6 Clinic 0 Credit 4**
This course covers the design, construction, and cost analysis of small-scale production items targeting various price points. Topics include basic market research, production, jigs and fixtures, time studies, and the making of various production prototypes such as lamps, cutting boards, and boxes. Upon completion, students should be able to design, make, and cost out production items for various price points.

Co-Requisites: None
Pre-Requisites: None

PCW-120 Drafting for Woodworkers **Lec 1 Lab 2 Clinic 0 Credit 2**
This course introduces the concepts, techniques, and tools of freehand and mechanical drawing as applied to furniture design and construction. Emphasis is placed on basic drafting conventions and techniques, freehand drawing skills, orthographic and isometric drawing, conceptual drawing, and working and presentation drawings. Upon completion, students should be able to utilize the design process beginning with an idea and progressing through conceptual, working, and presentation drawings.

Co-Requisites: None
Pre-Requisites: None

PCW-122 Furniture Design History **Lec 2 Lab 0 Clinic 0 Credit 2**
This course covers the historical development of furniture design of western civilization from ancient Egyptian society through the twentieth century. Topics include design themes, styles, and furniture functions of major historical periods from King Tut to late twentieth-century independent designer craftsmen. Upon completion, students should be able to recognize sources of historical design themes and contemporary applications of design in woodworking.

Co-Requisites: None
Pre-Requisites: None

PCW-136 Wood Finishing **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers wood finishing options with hand, brush, and spray applications, including special finishing effects. Topics include finish compositions, including oils, varnish, lacquer, paints, dyes, and stains, and special techniques such as fuming, bleaching, and pickling. Upon completion, students should be able to demonstrate various special finishing techniques and skills through samples and completed projects.

Co-Requisites: None
Pre-Requisites: None

PCW-210 Chair Design & Const **Lec 2 Lab 15 Clinic 0 Credit 7**
This course covers the design and construction of various seating functions and the associated woodworking technology for chair-making. Topics include design of chair prototypes, testing of structures, advanced woodbending, carving, jigs and fixtures, and coloring methods of finishing. Upon completion, students should be able to design, test, and make a chair and demonstrate various advanced specialty woodworking techniques.

Co-Requisites: None
Pre-Requisites: None

PCW-211 Casework Design & Const **Lec 2 Lab 15 Clinic 0 Credit 7**
This course covers case goods design and construction through an independent project that demonstrates professionalism in a craft business. Topics include the study of various case goods' functions such as dressers, desks, and cabinets and the independent development of a professional quality project. Upon completion, students should be able to design and make a case work piece of furniture and demonstrate professionalism in a project of their choice.

Co-Requisites: None
Pre-Requisites: None

PHYSICAL EDUCATION (PED)

PED-110 Fit and Well for Life **Lec 1 Lab 2 Clinic 0 Credit 2**
This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests.

Co-Requisites: None
Pre-Requisites: None

PED-111 Physical Fitness I **Lec 0 Lab 3 Clinic 0 Credit 1**
This course provides an individualized approach to physical fitness utilizing the five major components. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement an individualized physical fitness program.

Co-Requisites: None
Pre-Requisites: None

PED-120 Walking for Fitness **Lec 0 Lab 3 Clinic 0 Credit 1**
This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program.

Co-Requisites: None
Pre-Requisites: None

PED-122 Yoga I **Lec 0 Lab 2 Clinic 0 Credit 1**
This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga.

Co-Requisites: None
Pre-Requisites: None

PED-142 Lifetime Sports **Lec 0 Lab 2 Clinic 0 Credit 1**
This course is designed to give an overview of a variety of sports activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime sports. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime sports activities.

Co-Requisites: None
Pre-Requisites: None

PED-171 Nature Hiking **Lec 0 Lab 2 Clinic 0 Credit 1**
This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes.

Co-Requisites: None
Pre-Requisites: None

PED-219 Disc Golf **Lec 0 Lab 2 Clinic 0 Credit 1**
This course introduces the fundamentals of disc golf. Emphasis is placed on basic throwing techniques, putting, distance driving, scoring, and single and doubles play. Upon completion, students should be able to perform the skills required in playing situations.

Co-Requisites: None
Pre-Requisites: None

PHILOSOPHY (PHI)

PHI-210 History of Philosophy **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied.

Co-Requisites: None
Pre-Requisites: ENG-111

PHI-215 Philosophical Issues **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critically evaluate the philosophical components of an issue.

Co-Requisites: None
Pre-Requisites: ENG-111

PHI-220 Western Philosophy I **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers Western intellectual and philosophic thought from the early Greeks through the medievalists. Emphasis is placed on such figures as the pre-Socratics, Plato, Aristotle, Epicurus, Epictetus, Augustine, Suarez, Anselm, and Aquinas. Upon completion, students should be able to trace the development of leading ideas regarding reality, knowledge, reason, and faith.

Co-Requisites: None
Pre-Requisites: ENG-111

PHI-230 Introduction to Logic **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces basic concepts and techniques for distinguishing between good and bad reasoning. Emphasis is placed on deduction, induction, validity, soundness, syllogisms, truth functions, predicate logic, analogical inference, common fallacies, and scientific methods. Upon completion, students should be able to analyze arguments, distinguish between deductive and inductive arguments, test validity, and appraise inductive reasoning.

Co-Requisites: None
Pre-Requisites: ENG-111

PHI-240 Introduction to Ethics **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on moral theories such as consequentialism, deontology, and virtue ethics. Upon completion, students should be able to apply various ethical theories to moral issues such as abortion, capital punishment, poverty, war, terrorism, the treatment of animals, and issues arising from new technologies.

Co-Requisites: None
Pre-Requisites: ENG-111

PHYSICS (PHY)

PHY-110 Conceptual Physics **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied.

Co-Requisites: PHY-110A
Pre-Requisites: None

PHY-110A Conceptual Physics Lab **Lec 0 Lab 2 Clinic 0 Credit 1**
This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110.

Co-Requisites: PHY-110
Pre-Requisites: None

PHY-151 College Physics I **Lec 3 Lab 2 Clinic 0 Credit 4**
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Co-Requisites: None
Pre-Requisites: One: MAT-171 or MAT-271

PHY-152 College Physics II **Lec 3 Lab 2 Clinic 0 Credit 4**
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Co-Requisites: None
Pre-Requisites: PHY-151

PHY-251 General Physics I **Lec 3 Lab 3 Clinic 0 Credit 4**
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics,

periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Co-Requisites: MAT-272
Pre-Requisites: MAT-271 MAT-172

PHY-252 General Physics II Lec 3 Lab 3 Clinic 0 Credit 4
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Co-Requisites: None
Pre-Requisites: All: MAT-272 and PHY-251

POLITICAL SCIENCE (POL)

POL-120 American Government Lec 3 Lab 0 Clinic 0 Credit 3
This course is a study of the origins, development, structure, and functions of American government. Topics include the constitutional framework, federalism, the three branches of government including the bureaucracy, civil rights and liberties, political participation and behavior, and policy process. Upon completion, students should be able to demonstrate an understanding of the basic concepts and participatory processes of the American political system.

Co-Requisites: None
Pre-Requisites: None

PSYCHOLOGY (PSY)

PSY-150 General Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology.

Co-Requisites: None
Pre-Requisites: None

PSY-211 Psychology of Adjustment Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the study of the adjustment process focusing on contemporary challenges individuals must deal with in everyday life. Topics include theories of behavior, career choices, self-understanding, coping mechanisms, human relationships, intimacy, sociocultural factors influencing healthy personal adjustment, and other related topics. Upon completion, students should be able to demonstrate an awareness of the processes of adjustment.

Co-Requisites: None
Pre-Requisites: PSY-150

PSY-237 Social Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior.

Co-Requisites: None
Pre-Requisites: One: PSY-150 or SOC-210

PSY-241 Developmental Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span.

Co-Requisites: None
Pre-Requisites: PSY-150

PSY-243 Child Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an overview of physical, cognitive, and psychosocial development from conception through adolescence. Topics include theories and research, interaction of biological and environmental factors, language development, learning and cognitive

processes, social relations, and moral development. Upon completion, students should be able to identify typical and atypical childhood behavior patterns as well as appropriate strategies for interacting with children.

Co-Requisites: None
Pre-Requisites: PSY-150

PSY-275 Health Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course covers the biopsychosocial dynamics of stress and the maintenance of good health. Topics include enhancing health and well-being, stress management, lifestyle choices and attitudes, the mind-body relationship, nutrition, exercise, and fitness. Upon completion, students should be able to demonstrate an understanding of the psychological factors related to health and well-being.

Co-Requisites: None
Pre-Requisites: PSY-150

PSY-281 Abnormal Psychology Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques.

Co-Requisites: None
Pre-Requisites: PSY-150

RELIGION (REL)

REL-110 World Religions Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied.

Co-Requisites: None
Pre-Requisites: None

REL-111 Eastern Religions Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the major Asian religious traditions. Topics include Hinduism, Buddhism, Taoism, Confucianism, and Shinto. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied.

Co-Requisites: None
Pre-Requisites: None

REL-112 Western Religions Lec 3 Lab 0 Clinic 0 Credit 3
This course introduces the major western religious traditions. Topics include Zoroastrianism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied.

Co-Requisites: None
Pre-Requisites: None

REL-211 Introduction to Old Testament Lec 3 Lab 0 Clinic 0 Credit 3
This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature.

Co-Requisites: None
Pre-Requisites: None

REL-212 Introduction to New Testament Lec 3 Lab 0 Clinic 0 Credit 3
This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature.

Co-Requisites: None
Pre-Requisites: None

REL-221 Religion in America **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is an examination of religious beliefs and practice in the United States. Emphasis is placed on mainstream religious traditions and non-traditional religious movements from the Colonial period to the present. Upon completion, students should be able to recognize and appreciate the diversity of religious traditions in America.

Co-Requisites: None
Pre-Requisites: None

INFORMATION SYSTEMS SECURITY (SEC)

SEC-110 Security Concepts **Lec 2 Lab 2 Clinic 0 Credit 3**
This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

Co-Requisites: None
Pre-Requisites: None

SEC-160 Security Administration I **Lec 2 Lab 2 Clinic 0 Credit 3**
This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.

Co-Requisites: None
Pre-Requisites: None

SOCIOLOGY (SOC)

SOC-210 Introduction to Sociology **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies.

Co-Requisites: None
Pre-Requisites: None

SOC-213 Sociology of the Family **Lec 3 Lab 0 Clinic 0 Credit 3**
This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse lifestyles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change.

Co-Requisites: None
Pre-Requisites: None

SOC-215 Group Processes **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces group processes and dynamics. Emphasis is placed on small group experiences, roles and relationships within groups, communication, cooperation and conflict resolution, and managing diversity within and among groups. Upon completion, students should be able to demonstrate the knowledge and skills essential to analyze group interaction and to work effectively in a group context.

Co-Requisites: None
Pre-Requisites: None

SOC-220 Social Problems **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems.

Co-Requisites: None
Pre-Requisites: None

SOC-225 Social Diversity **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance.

Co-Requisites: None
Pre-Requisites: None

SOC-230 Race and Ethnic Relations **Lec 3 Lab 0 Clinic 0 Credit 3**
This course includes an examination of the various aspects of race and ethnicity and how these lead to different experiences, opportunities, problems, and contributions. Topics include prejudice, discrimination, perceptions, myths, stereotypes, and intergroup relationships. Upon completion, students should be able to identify and analyze relationships among racial and ethnic groups within the larger society.

Co-Requisites: None
Pre-Requisites: None

SOC-240 Social Psychology **Lec 3 Lab 0 Clinic 0 Credit 3**
This course examines the influence of culture and social groups on individual behavior and personality. Emphasis is placed on the process of socialization, communication, conformity, deviance, interpersonal attraction, intimacy, race and ethnicity, small group experiences, and social movements. Upon completion, students should be able to identify and analyze cultural and social forces that influence the individual in a society.

Co-Requisites: None
Pre-Requisites: None

SOC-250 Sociology of Religion **Lec 3 Lab 0 Clinic 0 Credit 3**
This course examines religion from a sociological perspective as part and product of human society. Topics include the origins, development, and functions of belief systems; religious organizations; conversion; and interactions with politics, the economy, science, and the class system. Upon completion, students should be able to describe and analyze religous systems.

Co-Requisites: None
Pre-Requisites: None

SPANISH (SPA)

SPA-111 Elementary Spanish I **Lec 3 Lab 0 Clinic 0 Credit 3**
This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness.

Co-Requisites: None
Pre-Requisites: None

SPA-112 Elementary Spanish II **Lec 3 Lab 0 Clinic 0 Credit 3**
This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness.

Co-Requisites: None
Pre-Requisites: SPA-111

SPA-141 Culture and Civilization **Lec 3 Lab 0 Clinic 0 Credit 3**
This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world.

Co-Requisites: None
Pre-Requisites: None

SPA-181 Spanish Lab 1 **Lec 0 Lab 2 Clinic 0 Credit 1**
This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary

learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness.

Co-Requisites: None
Pre-Requisites: None

SPA-182 Spanish Lab 2 Lec 0 Lab 2 Clinic 0 Credit 1
This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness.

Co-Requisites: None
Pre-Requisites: SPA-111

SPA-211 Intermediate Spanish I Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future.

Co-Requisites: None
Pre-Requisites: SPA-112

SPA-212 Intermediate Spanish II Lec 3 Lab 0 Clinic 0 Credit 3
This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication.

Co-Requisites: None
Pre-Requisites: SPA-211

SPA-221 Spanish Conversation Lec 3 Lab 0 Clinic 0 Credit 3
This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations.

Co-Requisites: None
Pre-Requisites: SPA-212

SPA-281 Spanish Lab 3 Lec 0 Lab 2 Clinic 0 Credit 1
This course provides an opportunity to enhance the review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future.

Co-Requisites: SPA-211
Pre-Requisites: None

SPA-281 Spanish Lab 3 Lec 0 Lab 2 Clinic 0 Credit 1
This course provides an opportunity to enhance the review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future.

Co-Requisites: None
Pre-Requisites: SPA-182

SPA-282 Spanish Lab 4 Lec 0 Lab 2 Clinic 0 Credit 1
This course provides an opportunity to enhance the review and expansion of the essential skills of the Spanish language. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication.

Co-Requisites: SPA-212
Pre-Requisites: None

TRANSPORTATION (TRN)

TRN-110 Introduction to Transport Technology Lec 1 Lab 2 Clinic 0 Credit 2
This course covers workplace safety, hazardous materials, environmental regulations, hand tools, service information, basic concepts, vehicle systems, and common transportation industry terminology. Topics include familiarization with major vehicle systems, proper use of various hand and power tools, material safety data sheets, and personal protective equipment. Upon completion, students should be able to demonstrate appropriate safety procedures, identify and use basic shop tools, and describe government regulations regarding transportation repair facilities.

Co-Requisites: None
Pre-Requisites: None

TRN-120 Basic Transportation Electricity Lec 4 Lab 3 Clinic 0 Credit 5
This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis, repair and replacement of batteries, starters, and alternators. Topics include Ohm's Law, circuit construction, wiring diagrams, circuit testing, and basic troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and electrical concerns.

Co-Requisites: None
Pre-Requisites: None

TRN-140 Transportation Climate Control Lec 1 Lab 2 Clinic 0 Credit 2
This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis and repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to diagnose and repair vehicle climate control systems.

Co-Requisites: None
Pre-Requisites: None

TRN-140A Transportation Climate Control Lab Lec 1 Lab 2 Clinic 0 Credit 2
This course provides experiences for enhancing student skills in the diagnosis and repair of transportation climate control systems. Emphasis is placed on reclaiming, recovery, recharging, leak detection, climate control components, diagnosis, air conditioning equipment, tools and safety. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.

Co-Requisites: TRN-140
Pre-Requisites: None

TRN-170 Pc Skills for Transportation Lec 1 Lab 2 Clinic 0 Credit 2
This course introduces students to personal computer literacy and Internet literacy with an emphasis on the transportation service industry. Topics include service information systems, management systems, computer-based systems, and PC-based diagnostic equipment. Upon completion, students should be able to access information pertaining to transportation technology and perform word processing.

Co-Requisites: None
Pre-Requisites: None

TRN-180 Basic Welding for Transportation Lec 1 Lab 4 Clinic 0 Credit 3
This course covers the terms and procedures for welding various metals used in the transportation industry with an emphasis on personal safety and environmental health. Topics include safety and precautionary measures, setup/operation of MIG equipment, metal identification methods, types of welds/joints, techniques, inspection methods, cutting processes and other related issues. Upon completion, students should be able to demonstrate a basic knowledge of welding operations and safety procedures according to industry standard

Co-Requisites: None
Pre-Requisites: None

WORK-BASED LEARNING (WBL)

WBL-111 Work-Based Learning I Lec 0 Lab 10 Clinic 0 Credit 1
This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

Co-Requisites: None

Pre-Requisites: None

WBL-112 Work-Based Learning I Lec 0 Lab 20 Clinic 0 Credit 2
This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

Co-Requisites: None
Pre-Requisites: None

WEB TECHNOLOGIES (WEB)

WEB-210 Web Design Lec 2 Lab 3 Clinic 0 Credit 3
This course introduces intermediate to advanced web design techniques. Topics include customer expectations, advanced markup language, multimedia technologies, usability and accessibility practices, and techniques for the evaluation of web design. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web sites.

Co-Requisites: None
Pre-Requisites: None

WELDING (WLD)

WLD-110 Cutting Processes Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

Co-Requisites: None
Pre-Requisites: None

WLD-112 Basic Welding Processes Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

Co-Requisites: None
Pre-Requisites: None

WLD-115 SMAW (Stick) Plate Lec 2 Lab 9 Clinic 0 Credit 5
This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

Co-Requisites: None
Pre-Requisites: None

WLD-116 SMAW (stick) Plate/Pipe Lec 1 Lab 9 Clinic 0 Credit 4
This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

Co-Requisites: None
Pre-Requisites: WLD-115

WLD-117 Industrial SMAW Lec 1 Lab 4 Clinic 0 Credit 3
This course introduces the SMAW (stick) process for joining carbon steel components for industrial applications. Topics include padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, student should be able to safely perform SMAW fillet and groove welds on carbon steel plate with prescribed electrodes.

Co-Requisites: None
Pre-Requisites: None

WLD-121 GMAW (MIG) FCAW/Plate Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces metal arc welding and flux core arc welding processes. Topics include equipment set up and fillet and groove welds with emphasis on the application of proper GMAW and FCAW consumables on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed filler materials in the flat, horizontal, and overhead positions.

Co-Requisites: None
Pre-Requisites: None

WLD-131 GTAW (TIG) Plate Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

Co-Requisites: None
Pre-Requisites: None

WLD-132 GTAW (TIG) Plate/Pipe Lec 1 Lab 6 Clinic 0 Credit 3
This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

Co-Requisites: None
Pre-Requisites: WLD-131

WLD-141 Symbols and Specifications Lec 2 Lab 2 Clinic 0 Credit 3
This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

Co-Requisites: None
Pre-Requisites: None

WLD-151 Fabrication I Lec 2 Lab 6 Clinic 0 Credit 4
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, cutting, joining techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

Co-Requisites: None
Pre-Requisites: None

WLD-212 Inert Gas Welding Lec 1 Lab 3 Clinic 0 Credit 2
This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions.

Co-Requisites: None
Pre-Requisites: None

WLD-215 SMAW (stick) Pipe Lec 1 Lab 9 Clinic 0 Credit 4
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.

Co-Requisites: None
Pre-Requisites: One: WLD-115 or WLD-116

WLD-231 GTAW (TIG) Pipe Lec 1 Lab 6 Clinic 0 Credit 3
This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

Co-Requisites: None
Pre-Requisites: WLD-132

WLD-251 Fabrication II **Lec 1 Lab 6 Clinic 0 Credit 3**
This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

Co-Requisites: None
Pre-Requisites: WLD-151

WLD-261 Certification Practices **Lec 1 Lab 3 Clinic 0 Credit 2**
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for prequalified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

Co-Requisites: None
Pre-Requisites: All: WLD-115, WLD-121, and WLD-131

WOOD PRODUCTS (WPP)

WPP-125 Wood Identification **Lec 1 Lab 2 Clinic 0 Credit 2**
This course introduces the laboratory identification of wood from gross characteristics. Topics include softwood and hardwood species. Upon completion, students should be able to identify a minimum of twenty commercial woods.

Co-Requisites: None
Pre-Requisites: None