SECTION 3

Course Descriptions
ACCOUNTING

ACCT 101 - Principles of Financial Accounting  
Prerequisites: ENGL 070 and MATH 061 with grades of C or higher or equivalent placement scores. Introductory course covering fundamental accounting principles and financial statement preparation. Emphasis on analysis of effects of business transactions on the earnings, financial position and cash flows of business entities.

ACCT 102 - Managerial Accounting  
Prerequisite: ACCT 101 with a grade of C or higher. Introduction to accounting methods and processes of managerial and cost accounting. Emphasis on developing and using accounting information related to a manufacturing environment, including management control and decision-making.

ACCT 109 - Applied Accounting Procedures  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Provides a basic understanding of accounting terminology and procedures used to record, classify and summarize financial data for a sole proprietorship. Designed for those with no previous knowledge of accounting.

ACCT 125 - Computerized Accounting Applications  
Prerequisites: ACCT 109 and CAPP 125 with grades of C or higher. Project-intensive approach to accounting and reporting utilizing accounting software currently used in industry. Emphasis on using a microcomputer to process financial accounting data and prepare financial statements and related reports.

ACCT 126 - Introduction to QuickBooks  
Introduction to the basic concepts and skills necessary for using QuickBooks. Emphasis on entering accounts payable/receivable and payroll transactions, completing end-of-year processes and generating reports to make business decisions.

ACCT 132 - Business Taxation  
Prerequisite: ACCT 101 with a grade of C or higher. Introduction to the federal and state laws that affect employment practices, wage payments, benefit plans, workers’ compensation, garnishments, and sales tax. Emphasis on compliance with federal and state reporting requirements.

ACCT 137 - Introduction to Federal Taxation  
Prerequisite: ACCT 101 with a grade of C or higher. Introduction to federal income tax principles and procedures. Emphasis on application of tax laws to solve tax problems, develop tax plans, perform tax research, and prepare required returns.

ACCT 175 - Accounting Internship  
Prerequisite: Consent of program coordinator. Supervised on-the-job training plan, tailored to meet student and employer needs.

Prerequisite: ACCT 101 with a grade of C or higher. Financial accounting theory and practice are applied in accordance with generally accepted accounting principles for financial reporting of corporate entities. Emphasis on corporate financial statement preparation and analysis.

ACCT 220 - Current Topics in Accounting  
Prerequisites: ACCT 102 and ACCT 203 with grades of C or higher. Accounting theory and practice are applied to selected topics related to financial reporting and management decision-making. Course will utilize case studies and current events involving the accounting profession.

AGRICULTURE

AGRI 101 - Ag Leadership and Issues I  
Course is designed to help students begin planning a career in the agriculture industry by creating and setting goals and developing means of attaining those goals. The course focuses on leadership development, team building, problem-solving, and current issues in agriculture.

AGRI 102 - Ag Leadership and Issues II  
Prerequisite: AGRI 101. Continuation of AGRI 101 promoting further development of the student’s career plan. Course will help students identify what attributes are sought by the agriculture industry and how to prepare for the work-force. Course focuses on résumé building, creating cover letters, completing employment applications, and job interview skills.

AGRI 103 - Ag Leadership and Issues III  
Prerequisite: AGRI 102. Course allows students to review the progress made in the previous year in AGRI 101 and AGRI 102 and continue toward the goal of employment in the agriculture industry. Course focuses on the continuing development and implementation of a career plan for entry into an agriculture-related career.

AGRI 104 - Ag Leadership and Issues IV  
Prerequisite: AGRI 103. Continuation of AGRI 103 completing the progress of the student’s plan for employment. Course focuses extensively on the process of employment ranging from job identification, the application process and interviewing for the position. Activities include job searching, contacting employers, completing applications, and experiencing a job interview.

AGRI 106 - Global Agriculture  
Course introduces the student to economic, political, cultural, and environmental issues that affect food production and distribution in the advancement of societies in developed and developing countries.
AGRI 108 - Animal Science  3
Presents principles of animal agriculture essential for a basic understanding of the animals that are chief producers of food and fiber for human consumption. Specific breeds, animal behavior, anatomy, physiology, reproduction, and nutrition will be included.

AGRI 110 - Contemporary Issues in Animal Agriculture  3
Introduction to contemporary issues in animal agriculture, including perspectives on animal rights and welfare, effects of agriculture on the environment and controversial production techniques.

AGRI 112 - Livestock and Meat Evaluation  3
Course is a study of livestock selection and meat evaluation used in marketing in the beef, swine and sheep industries.

AGRI 114 - Livestock Management  3
Course is a study of the segments of livestock production that identifies the essential ingredients needed by producers to raise productive and profitable livestock.

AGRI 116 - Animal Nutrition  3
Prerequisite: MATH 061 or equivalent placement score. Study includes the nutritional needs of livestock and the formulation of feeds, including hormones, antibiotics, minerals, vitamins, and other feed additives.

AGRI 118 - Plant Science  3
Study includes plant and seed development and selection, the cultural practices in the production of common farm crops and seed and plant identification.

AGRI 119 - Soils I with Lab  4
Prerequisite: MATH 061 or equivalent placement score. Course is designed to give students an understanding of key concepts in soil formation, composition, uses, soil conservation, cropping systems, and soil improvements. The lab provides students with real-world application of soils theories and concepts taught in the classroom. Both AGRI 119 and AGRI 120 cannot be applied to meet any certificate or degree requirements. (3 lecture, 1 lab)

AGRI 121 - Soils II  3
Prerequisite: AGRI 119. Study includes soil composition and fertilization practices needed for proper nutrition of plants.

AGRI 123 - Soil Erosion and Management  3
Prerequisite: AGRI 119. Course includes training in surveying and soil erosion control through construction of structures and management practices.

AGRI 125 - Natural Resources  3
Course includes the study of natural resources as they relate to our existence and their mutual relationship to each other.

AGRI 126 - Ornamental Woody Plants  3
Identification and evaluation of trees and shrubs for landscape use.

AGRI 127 - Farm Chemicals  3
Course includes the study of the production, distribution, handling, and application of farm chemicals such as insecticides, rodenticides, fungicides, herbicides, and brush killers.

AGRI 128 - Ornamental Herbaceous Plants  3
Identification and evaluation of annuals, biennials, perennials, ground covers, and bulbs.

AGRI 129 - General Horticulture  3
Course includes study of horticultural crops and the horticultural industry. Study includes plant propagation and fruit and vegetable production.

AGRI 131 - Introduction to Agribusiness Systems  3
Introduction to the agribusiness system career pathway. Topics include an overview of the agribusiness industry, economic principles in agribusiness and retail agribusiness sales.

AGRI 132 - Agriculture Economics  3
Study focuses on the factors affecting the income and expenditures of agricultural business and the methods and systems of buying and selling products.

AGRI 133 - Agricultural and Food Policy  3
Course presents theory and practice in agricultural and food policy creation and implementation. Study includes farm, food, environmental, and economic policies that impact agricultural business.

AGRI 134 - Marketing Farm Commodities  3
Course presents theory and practice in marketing livestock and livestock products, analyzing costs and efficiency in grain marketing processing organizations, and the price-making process.

AGRI 136 - Ag Credit and Finance  3
Course emphasizes general principles associated with evaluation of management and use of capital. Students will develop an understanding of agricultural finance to help financiers satisfy credit needs of modern agriculture.

AGRI 137 - Farm Management, Recordkeeping  1
Course covers computer use in the workplace with emphasis on agribusiness situations. Computer applications including spreadsheet management will be covered.

AGRI 138 - Ag Business Management  3
Study includes management functions and economics of agriculture organizations and operations including input-output analysis, efficient allocations of resources, enterprise combinations, and budget analysis.

AGRI 141 - Livestock Breeding  3
Course includes study of genetic factors contributing to animal value, selection criteria for a production operation and mating systems.
**AGRI 143 - Livestock Reproduction**  3  
Course covers basic reproductive anatomy and physiology of farm animal species followed by reproduction management options and contemporary reproductive technologies.

**AGRI 149 - Chemistry of Soil Additives**  3  
Course covers the basic principles of soil fertilization and includes lime application, plant nutrients, fertilizing, and management. Upon completion, students should be able to give nutrient and liming recommendations for soils.

**AGRI 151 - Landscape Design and Maintenance**  3  
A comprehensive study of landscaping. Study incorporates computer aided drafting (CAD) software to design functional and aesthetically pleasing landscapes and landscape maintenance programs.

**AGRI 154 - Greenhouse Management with Lab**  4  
Course presents greenhouse design, environmental control, production equipment, and management practices. Instruction includes principles and practices relative to plant nutrition, pest control, product handling, and marketing greenhouse production. (3 lecture, 1 lab)

**AGRI 167 - CDL Licensing**  2  
Course is designed to enable students to pass the state Commercial Driver’s License (CDL) exam. Students must qualify for the Class A CDL with all appropriate endorsements.

**AGRI 168 - Commercial Applicator Licensing**  2  
Prerequisite: MATH 061 or equivalent placement score. Study complements other courses offered in weed, insect and disease control. Student will develop the skills necessary to pass the state and federal examinations for commercial applicator licensing.

**AGRI 174 - Crop and Insect Scouting**  2  
Utilizing real-life crop growing environments, students will learn to identify weed, insect and disease infestations; determine life cycles; recognize damage symptoms; establish economic thresholds; and recommend control alternatives.

**AGRI 175 - Occupational Internship**  2 to 8  
Prerequisite: Consent of program coordinator. Internship is supervised by agricultural staff and designed to assist the student in developing good work habits. Includes training in specific areas unique to the employer and provides basis for career decision for the student.

**AGRI 179 - Innovative Horticulture**  1  
Prerequisite: Consent of instructor. Designed to provide the student an opportunity to apply horticultural knowledge, problem-solving skills and creativity to develop and/or construct a capstone project. Student must have at least 55 credit hours completed in the AAS in Agriculture with emphasis in Horticulture program.

**AGRI 180 - Problems in Agriculture**  1 to 3  
Prerequisite: Consent of program coordinator. Independent study of a special problem in agriculture under the supervision of an agriculture instructor.

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**ART**

**ART 101 - Art Appreciation**  3  
Study of art history from the last of the 19th century through the present. Consists of formal lectures, films, slides, gallery and studio visits, assigned readings, as well as hands-on experiences with art materials. Includes the evolution of art by focusing on the major art movements of the past 100 years. Encourages appreciation of visual art through the study of content, design, technique, and criticism of art. Students learn how art changed during this period and how it reflects the dynamics of 20th century civilization.

**ART 103 - Design I**  3  
Entry-level art course required of all art majors. Foundation course introducing the study of the visual elements and principles of design. Emphasis is placed on the student’s ability to recognize and manipulate these elements and principles.

**ART 104 - Design II**  3  
Prerequisite: ART 103. The second of a two-course sequence required for all art majors. Compositional principles of art are explored through a variety of two- and three-dimensional materials. Emphasis is placed on the student solving specific problems creatively with color.

**ART 106 - Watercolor I**  3  
An entry-level course for both art majors and anyone interested in beginning watercolor. This foundation course introduces materials and techniques of aqua media painting, various preparations of paper and use of brushes and other tools. Control of transparent color will be learned through experimentation. Students will be encouraged to experiment with a variety of subject matter and techniques in search for personal identity.

**ART 107 - Watercolor II**  3  
Prerequisite: ART 106. Continuation of the search for a personal expressive identity in watercolor. The students will work from sources they have a personal relationship with, such as persons they know, or familiar places and things. In addition to observable sources, the students will be encouraged to respond to the materials used in a creative manner discovering that the process of painting itself suggests images and ideas. Students will advance their personal expressive identity through making decisions and finding solutions while exploring representation, abstraction and non-objective painting.
ART 108 - Watercolor III  3  
Prerequisite: ART 107. Includes advanced problems and techniques of aqua media painting.

ART 110 - Printmaking  3  
Course includes exploring and developing personal artistic identity in traditional and contemporary printing methods. Wood block, etching and monoprint methods will be explored.

ART 112 - Drawing I  3  
Entry-level art course required for all art majors. Foundation course placing emphasis on drawing as an expressive medium. Content is based on a series of perceptual and conceptual assignments designed to force students to reach inside themselves to define, through their work, a sense of artistic self.

ART 113 - Drawing II  3  
Prerequisite: ART 112. The second of a two-course sequence required for all art majors. Foundation course placing emphasis on drawing as an expressive medium. Students search for expression of their own personal artistic identity through a series of process-oriented assignments using various colored media.

ART 114 - Figure Drawing I  3  
The human figure is analyzed in terms of structure, proportion and form. Emphasis is placed on representative as well as conceptual approaches.

ART 115 - Figure Drawing II  3  
Prerequisite: ART 114. Continuation of the study of refining the student's technical skills in drawing. Emphasis is placed on technical skills rendering the figure, as well as conceptual approaches and development.

ART 116 - Painting I  3  
Entry-level art course for both art majors and anyone interested in beginning painting. Foundation course that concentrates on painting as an expressive medium and is designed to allow students to explore a variety of subject matter and experiment with painting techniques in a search for personal artistic identity.

ART 117 - Painting II  3  
Prerequisite: ART 116. Continuation of the search for a personal expressive identity. Students will work from sources they have a personal relationship with, such as persons they know, or familiar places and things. In addition to observable sources, students will be encouraged to respond to the materials used in a creative manner discovering that the process of painting itself suggests images and ideas. Students will advance their personal expressive identity through making decisions and finding solutions while exploring representation, abstraction and non-objective painting.

ART 118 - Painting III  3  
Prerequisite: ART 117 and consent of instructor. Students may concentrate in watercolor, oil, acrylics, or mixed media. Offered by appointment only.

ART 120 - Modern Art History  3  
Required for art majors. Emphasis is placed on the creative nature of man and how creativity enriches society and the social, economic and political conditions that influenced and constructed modern art. Study begins with the development of impressionism and moves through the major art movements of the late 19th and 20th centuries.

ART 122 - Sculpture I  3  
Develops insight into the principles of sculptural organization and stresses individual development of three-dimensional forms.

ART 123 - Sculpture II  3  
Prerequisite: ART 122. Continuation of ART 122 with the student developing a body of work that is interrelated. Includes exploration of a variety of materials including metal, wood and found objects, with an emphasis placed on individual exploration and development.

ART 126 - Ceramics I  3  
Introduces clay construction techniques, basic ways of glazing and firing systems. Emphasis is placed on students acquiring technical proficiency in a variety of constructive methods and glazing techniques.

ART 127 - Ceramics II  3  
Prerequisite: ART 126. Continuation of ART 126 with students becoming more proficient in construction techniques that are appropriate for their ideas. Emphasis is placed on students developing a body of work that is interrelated.

ART 130 - Fiber Arts I  3  
Explores a variety of traditional and nontraditional mediums and techniques in the fiber arts. Emphasis is placed upon process and investigation.

ART 131 - Fiber Arts II  3  
Prerequisite: ART 130. Continuation of the study and exploration of traditional and nontraditional mediums and techniques in the fiber arts. Emphasis is placed upon process and further investigation of personal expression as well as development of craftsmanship through the fiber media.

ART 180 - Problems in Art  3  
Prerequisite: Consent of instructor. Must complete courses I and II of desired subject area. Independent study of a special problem in art under the supervision of an art instructor. Students will concentrate on a particular medium, subject or source. May be repeated in a different problem area.
AUTISM

ATSM 105 - Autism Spectrum Disorders 3
Examination of the neurological and behavioral characteristics of children with autism spectrum disorders (ASD). Course includes an overview of characteristics and learning traits, classification systems, assessment strategies, issues, approaches, and interventions related to individuals with ASD. Special emphasis will be given to selecting evidence-based practices and enhancing collaboration among individuals with ASD, their families and supporting professionals.

ATSM 110 - Communication and Social Competence 3
Overview of language development and communication strategies, issues, pragmatics, communication systems, augmentative and alternative communication systems (AAC), social deficits in autism, and approaches for teaching social skills. Includes an emphasis on the development of appropriate communication skills.

AUTOMOTIVE

AUTO 100 - Introduction to Automotive Technology 3
Many fundamental principles necessary for laying a foundation in the automotive program are covered, including shop safety; hazardous materials and environmental issues; hand tools; measuring tools; hardware and math related to the automotive industry; career and industry specific information; and an overview of many of the automotive systems. Real-world fixes and tech tips are included throughout to help illustrate how real problems are solved. Each new topic covers the preventive maintenance requirements for various components and automotive systems, including the purpose, function and operation, as well as how to service each system. (2 lecture, 1 lab)

AUTO 103 - Manual Transmissions, Drivelines and Axles 5
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Instruction for the development of skills and knowledge required to diagnose and repair drivelines. This includes clutches, transmissions, drive shafts, differentials, axles, wheels and bearings, transaxles, and four-wheel drive hub assemblies. (3.5 lecture, 1.5 lab)

AUTO 105 - Automatic Transmissions 5
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Designed to develop skills and knowledge required to diagnose and repair automatic transmissions and automatic transaxles and torque converters. Topics include the study of automatic transmission design and theory of operation, along with in and out-of-vehicle repair and servicing. (3.5 lecture, 1.5 lab)

AUTO 106 - Power Train Management 5
Prerequisites: AUTO 100, AUTO 116, AUTO 118 with grades of C or higher. Automotive systems are studied in depth beginning with fundamental principles and quickly advancing to more sophisticated theories and applications. Classroom studies in fuel and emissions systems, computerized engine controls, various input and output devices, ignition, intake and exhaust systems with a lab will enhance the learning experience with hands-on demonstrations and tasks. (3.65 lecture, 1.35 lab)

AUTO 108 - Advanced Engine Performance 6
Prerequisites: AUTO 100, AUTO 106, AUTO 116, and AUTO 118 with grades of C or higher. Advanced study of automotive diagnostic equipment and troubleshooting techniques related to modern vehicle powertrains. Study includes electronic engine controls, including fuel injection, feedback systems, computer controlled engine management systems, scan tool, digital multimeter, lab scope usage, and diagnostic trouble code retrieval and troubleshooting. (5 lecture, 1 lab)

AUTO 113 - Steering, Suspension and Wheels 5
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Study develops skills and knowledge required to diagnose and repair steering and suspension systems, including tire and wheel service, wheel balance, four-wheel alignment, springs and torsion bar suspension, power steering pump, steering gears, and rack and pinion steering. (3.5 lecture, 1.5 lab)

AUTO 115 - Automotive Brakes 5
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Theory of operation, diagnostics and troubleshooting, repairing and servicing of brakes will be taught as well as modern anti-lock brakes and traction control systems. The diagnosis and repair of both drum and disc systems will be explored, including the fabrication of brake lines as a student project. (3.5 lecture, 1.5 lab)

AUTO 116 - Automotive Electrical System Fundamentals 3
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Students will develop skills and knowledge required to understand fundamental principles of electricity and how these principles apply to automotive systems. Study of wiring diagrams, electrical symbols and how to utilize appropriate equipment such as meters and scopes in the troubleshooting process will be included. (2.25 lecture, .75 lab)

AUTO 118 - Advanced Automotive Electrical and Electronics 3
Prerequisites: AUTO 100 and AUTO 116 with grades of C or higher. Course provides an in-depth focus on electrical theory and the understanding and application of automotive electrical and electronic computer systems as related to modern vehicle systems. Instruction includes methods to successfully troubleshoot vehicle electrical and electronic problems that result in appropriate repairs. (2.25 lecture, .75 lab)
AUTO 119 - Automotive Heating and Air Conditioning 5
Prerequisites: AUTO 100, AUTO 116, and AUTO 118 with grades of C or higher. Students will develop skills and knowledge required to diagnose and repair problems related to automotive heating and air conditioning systems. Both automatic climate control and manual systems will be studied along with the engine coolant system. (3.65 lecture, 1.35 lab)

AUTO 121 - Automotive Engines 6
Prerequisite: AUTO 100 with a grade of C or higher. Corequisite: AUTO 100. Students will develop skills and knowledge required to understand the fundamental principles, servicing, troubleshooting, and repair of modern automotive engines. Study includes diagnosis and troubleshooting, removal and disassembly, cleaning, inspection and repairs; and reassembly and installation of engine assemblies. Students work in pairs on project vehicles so that skills learned in the classroom can be exercised in a live environment. (3 lecture, 3 lab)

AUTO 123 - Service Operation Management 3
Students will be prepared to understand the variables encountered in operating a service business. Areas of content include management, finances, inventory, investment, organization, customer and employee relations, marketing, legal guidelines, and OSHA safety requirements.

AUTO 180 - Automotive Special Projects 3
Students will be involved in automotive lab operations, including preventive maintenance and repair on equipment, tool inventory and management, ordering parts and supplies, assisting in lab set-up, recording customer repair orders, inputting data, and conducting industry-specific research. There will be opportunities to work on unique automotive projects as well. (3 lab)

BIOLOGICAL SCIENCE

BIO 100 - General Biology 3
Introduction of biology that develops understanding of basic, unifying concepts in science and biology. Topics include the scientific method, biochemistry, cell biology, metabolism, genetics, evolution, ecology, and human ecology.

BIO 103 - Human Biology 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to the structure and function of human body systems and human influence on the biosphere. Topics include biochemistry, body organization, homeostasis, structural maintenance of cells, tissues and organ systems of the human body, evolution, ecology, and human influence on the biosphere. Course may NOT be taken if the student already has credit for BIO 112, BIO 125, BIO 126, BIO 207, or BIO 208.

BIO 105 - Wildlife Conservation 3
Prerequisite: ENGL 101 with a grade of C or higher. Integrated study focused on historical, cultural and scientific aspects of wildlife conservation. Topics include ecology, diversity, extinctions and extinction processes, ecosystem degradation and loss, overexploitation, invasive exotics, zoos and gardens, public attitudes and perceptions including social factors, economics and ethics, and human impact. This is a reading and writing intensive course that involves modern and historic conservation issues.

BIO 112 - General Biology with Lab 5
Introduction of biology that develops an understanding of basic, unifying concepts in science and biology through an investigative laboratory environment. Topics include the scientific method, biochemistry, cell biology, metabolism, genetics, evolution, ecology, and human ecology. (4 lecture, 1 lab)

BIO 121 - Microbiology 4
Prerequisite: BIO 207 or BIO 208 or CHEM 101. Course presents basic principles of infection, immunity and the study of microorganisms; studying life at the microscopic level (including eukaryotic cells, protozoa and fungi, prokaryotic cells, bacteria, mycoplasma, and rickettsia; and viruses, prions and infectious agents). Lecture and laboratory sessions consider techniques in conventional culture methods, examination and identification of microorganisms. Topics include microbiological history, environmental constraints, taxonomy, nutritional requirements, biochemical activity, genetic make-up, pathogenicity, virulence, immunology, public health, and medical significance of microbiology. Laboratories will cover aseptic techniques, streak plates and culturing, growth and binary fission, microscopy, biochemical testing, identification, rapid testing, application of critical analysis, and presentations. Designed for Nursing and Health Science majors and other majors who require a foundation in the study of microbiology. (3 lecture, 1 lab)

BIO 125 - Biology I with Lab 5
Prerequisites: ENGL 101 and MATH 110 or MATH 112 with grades of C or higher or equivalent placement scores. First semester of a two-semester introduction to biological sciences intended for biology and related majors. Topics include philosophical, historical and social context of biology; scientific method and investigative techniques; biological structure and function at molecular and cellular levels; genetics; and plant form, function and diversity. (3 lecture, 2 lab)

BIO 126 - Biology II with Lab 5
Prerequisites: BIO 112 or BIO 125 and ENGL 101 and MATH 110 or MATH 112 with grades of C or higher or equivalent placement scores. Second semester of a two-semester introduction to biological sciences intended for biology and related majors. Topics include philosophical, historical and social context of biology; animal morphology, embryology and taxonomy and systematics; life histories; ecology; and evolution. (3 lecture, 2 lab)
**COURSE DESCRIPTIONS**

**BIO 130 - Topics in Biology** 1 to 3
Study of a major topic in biology and science. Content and topics change and may include ecology, bio-history, evolution, science in science fiction, or history of science. Specific subjects will be announced prior to course offerings.

**BIO 207 - Human Anatomy with Lab** 4
Prerequisites: ENGL 070 with a grade of C or higher or equivalent placement scores and a high school biology course with a grade of C or higher or a college biology course with a grade of C or higher (BIO 103 is recommended but not required). Study of gross and microscopic anatomy of the human organs, tissues and systems. (2 lecture, 2 lab)

**BIO 208 - Human Physiology with Lab** 4
Prerequisite: BIO 207 with a grade of C or higher, or LPN license, or biology department and program approval if currently enrolled in a PN program and have completed anatomy or anatomy and physiology with a grade of B or higher. Course presents the basic biological functions of the human body from cell to tissue, tissue to organ, and organ to organ system with attention to the interrelationships at these levels. (3 lecture, 1 lab)

**BIO 210 - Principles of Genetics with Lab** 4
Prerequisites: BIO 112 or BIO 125 and ENGL 101 and MATH 110 or MATH 112 with grades of C or higher or equivalent placement scores. Course is a comprehensive introduction to fundamental principles of inheritance intended for biology and related majors. Topics include heredity concepts from classical and modern genetics; the physical, biochemical, chromosomal, cytological bases for inheritance patterns; selection and breeding; and evolution. (3 lecture, 1 lab)

**BIO 280 - Problems in Biology** 1 to 3
Prerequisite: Consent of instructor. Independent course presenting the study of a special problem in biology under the supervision of a science instructor.

**BUSINESS ADMINISTRATION**

**BADM 101 - Introduction to Business** 3
Prerequisite: ENGL 060 with a grade of C or higher or equivalent placement scores. Course is an introduction to the principles, practices and problems encountered in the general business environment. Topics include options for organizing a business and the basic functions of accounting, marketing, management, and finance.

**BADM 103 - Legal Environment of Business** 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Investigation of various legal issues encountered in the business environment. Emphasis is placed on developing an understanding of the court system. Includes specific legal topics such as contracts, torts, employment law, product liability, and consumer protection.

**BADM 107 - Personal Finance** 3
Prerequisites: ENGL 070 and MATH 061 with grades of C or higher or equivalent placement scores. Introduction to personal financial management. Examines the techniques necessary to analyze and make choices concerning major purchases, tax planning, insurance, borrowing, investing, and other personal finance issues.

**BUSINESS MANAGEMENT**

**BSMT 106 - Principles of Marketing** 3
Prerequisite: Equivalent reading placement score into ENGL 070. Introduction to the key concepts and issues underlying the modern practice of marketing that impacts today’s managers. The marketing process is analyzed through the four main decision areas of products and services, distribution, promotion, and pricing.

**BSMT 108 - Principles of Management** 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to role of management and supervision. Examines the concepts and the practical application of fundamental supervisory skills such as planning, problem solving, motivation, staffing, leadership, training, managing conflict, and providing effective performance reviews.

**BSMT 110 - Salesmanship** 3
Prerequisite: Equivalent reading placement score into ENGL 070. Introduction to the study of selling as a major function of the marketing mix. The focus is on consumer behavior, selling techniques and includes one role-play sales presentation.

**BSMT 117 - Human Resource Management** 3
Prerequisite: BSMT 108. Introduction to the human resource management functions including recruitment and selection, equal employment opportunity compliance, development and training, performance appraisal, compensation, and employee benefits.

**BSMT 119 - Customer Service Management** 3
Introduction to the customer service function of business. Students will acquire and apply communication skills needed to be successful in today’s competitive customer-oriented work environment. Topics include communication, leadership, relationship building, customer retention, problem solving, and measurement of satisfaction.

**BSMT 125 - Human Relations** 3
Prerequisite: Equivalent reading placement score into ENGL 070. Introduction to the concept of business organizations as a social system. Topics consist of motivation, perception, communication, behavior theories, and group dynamics. Utilizes activities in the classroom to demonstrate major human relations concepts.
BSMT 130 - Business Strategies 3
Prerequisite: Consent of program coordinator. Capstone course that provides business management students with an understanding of the total enterprise system. Students will draw upon prior coursework to solve business problems.

BSMT 175 - Business Management Internship 3 to 6
Prerequisite: Consent of program coordinator. On-the-job experience tailored to enforce topics taught within the degree. Student supervision will be the cooperative arrangement between the program coordinator and employer. Progress reports and a final report documenting work experience will be submitted. An approved three-hour program elective may fulfill the internship requirement.

BSMT 185 - Project Management 3
Prerequisite: CAPP 125. Course will help students understand why organizations have developed a formal project management process to gain a competitive advantage. It covers concepts and skills that are used by managers to propose, plan, secure resources, budget, and lead project teams to successful completion of their projects. The text is structured to meet the needs of those wishing to prepare for the PMP or CAPM certification exams. Same as CIS 185.

CPT 102 - Safety 3
Safety training to prepare students for entry-level employment in a production position with the ability to work in a safe and productive manufacturing workplace. Skill areas include: perform safety and environmental inspections; perform emergency drills and participate in emergency teams; identify unsafe conditions and take corrective action; provide safety orientation for all employees; train personnel to use equipment safely; suggest processes and procedures that support safety of work environment; fulfill safety and health requirements for maintenance, installation and repair; monitor safe equipment and operator performance; and utilize effective, safety-enhancing workplace practices.

CPT 104 - Quality Practices and Measurement 3
Quality skills for the entry-level production employee to participate in periodic internal quality audit activities. Skill areas include check calibration of gages and other data collection equipment; suggest continuous improvements; inspect materials and product/process at all stages to ensure they meet specifications; document the results of quality tests; communicate quality problems; take corrective actions to restore or maintain quality; record process outcomes and trends; identify fundamentals of blueprint reading; and use common measurement systems and precision measurement tools.

CPT 106 - Manufacturing Processes and Production 3
Entry-level production skills include identify customer needs; determine resources available for the production process; set up equipment for the production process; set team production goals; make job assignments; coordinate work flow with team members and other work groups; communicate production and material requirements and product specifications; perform and monitor the process to make the product; document product and process compliance with customer requirements; and prepare final product for shipping or distribution.

CPT 108 - Maintenance Awareness 3
Prepare the entry-level production worker in the importance and operations of maintenance. Areas of study include: perform preventive maintenance and routine repair; monitor indicators to ensure correct operations; perform all housekeeping to maintain production schedule; recognize potential maintenance issues with basic production systems, including knowledge of when to inform maintenance personnel about problems with electrical, pneumatic, hydraulic, and machine automation systems; lubrication processes; bearings and couplings; and belts and chain drives.

CHEM 101 - Introduction to Chemistry with Lab 5
Prerequisite: ENGL 101 with a grade of C or higher. One-semester course for nonscience majors designed to acquaint the student with scientific reasoning. A writing intensive course that introduces the principles of the nature of matter/atom, reactions, reaction pathways, solutions, measurements, instrumentation, nuclear chemistry, organic/biological molecules and their applications to current issues. (3 lecture, 2 lab)

CHEM 123 - General Chemistry I with Lab 5
Prerequisites: ENGL 070 and MATH 114 with grades of C or higher or equivalent placement scores. Intended for the science major and science-oriented fields, course examines the structure of the atom, periodic classification, molecular structures, chemical reactions, aqueous solutions, and chemical energetics. (3 lecture, 2 lab)

CHEM 124 - General Chemistry II with Lab 5
Prerequisite: CHEM 123 with a grade of C or higher. Continuation of CHEM 123 emphasizing chemical energetics, entropy, equilibria, reduction oxidation systems, and reaction pathways in organic/biochemistry. (3 lecture, 2 lab)

CHEM 180 - Problems in Chemistry 1 to 3
Prerequisite: Consent of instructor. Independent study and/or lab investigation of a special problem in chemistry. Instruction varies between 1 to 3 lecture hours and 1 to 3 lab hours.
CHEM 221 - Organic Chemistry I with Lab  5
Prerequisite: CHEM 123 with a grade of C or higher. The first of a two-semester sequence in organic chemistry, course studies the structure, bonding and nomenclature of organic compounds (alkanes, alkenes, alkynes, and conjugated systems); substitution and elimination reaction mechanisms; and identification of organic compounds via UV, VIS, IR, GC, and NMR spectroscopy. (3 lecture, 2 lab)

CHEM 222 - Organic Chemistry II with Lab  5
Prerequisite: CHEM 221 with a grade of C or higher. Continuation of CHEM 221 including the study of the reactions associated with aromatic compounds, carbonyl compounds and polyfunctional natural products. (3 lecture, 2 lab)

CHEM 265 - Elementary Organic and Biochemistry with Lab  5
Prerequisite: Any CHEM course with a grade of C or higher. Introduction to organic chemistry and the fundamental concepts of biochemistry; topics include functional groups, nomenclature, reactivity, organic reaction mechanisms. Course explores molecules associated with life functions, emphasizing physiological, nutritional, and comparative aspects. Required for some nonchemistry degrees; generally does not transfer for chemistry majors. (3 lecture, 2 lab)

COMM 101 - Public Speaking  3
Study and practice of basic techniques involved in generating, designing, delivering, and evaluating ideas for speech situations facing adults of our society.

COMM 103 - Small Group Communication  3
Presents the communication process as it relates to small group behavior, including the study of principles, methods and forms of discussion used in small groups.

COMM 105 - Interpersonal Communication  3
Presents theories, principles and techniques of communication as they apply to one-to-one, small groups and conference interaction.

COMM 110 - Introduction to Mass Communication  3
Presents a basic overview of the scope and role of the mass media in society. Course integrates media aids with creative assignments and field trips to help students become informed media consumers and gain cultural and global perspectives on the communication industry.

COMM 112 - Introduction to Public Relations  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Overview of the principles and practice of public relations in private and public organizations. Includes analysis of how various organizations’ communication philosophies and practices impact their productivity and effectiveness in society.

COMM 180 - Problems in Communication  1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in communications under the supervision of a communications instructor in the department.

COMPUTER APPLICATIONS

CAPP 124 - Introduction to the Personal Computer  1
Designed for those with limited or no computer experience. Emphasis is placed on keyboard and mouse usage, the Windows operating system, file storage, and software options. Includes hands-on instruction in the computer lab. This is a pass/fail course.

CAPP 125 - Microcomputer Applications  3
Prerequisite: Equivalent reading placement score into ENGL 070. Keyboarding proficiency is recommended. Learn the operations of personal computers through the use of Microsoft Office Professional software. Applications include fundamentals of word processing, spreadsheets, database management, and presentations.

CAPP 160 - Word  3
Prerequisite: CAPP 125 with a grade of C or higher. Course is designed for Windows users who seek further knowledge of the word processing program, Microsoft Word.

CAPP 162 - Desktop Publishing  3
Introduction to the basics of electronic page layout using professional publishing software. Valuable skills will be gained in image scanning, manipulation and merging text and graphics.

CAPP 164 - Access  3
Prerequisite: CAPP 125 with a grade of C or higher. Course is designed for Windows users who seek further knowledge of the database program, Access.

CAPP 166 - Excel  3
Prerequisite: CAPP 125 with a grade of C or higher. Course is designed for Windows users who seek further knowledge of the spreadsheet program, Excel.

COMPUTER INFORMATION SYSTEMS

CIS 103 - Introduction to CIS  3
Course teaches the skills necessary to understand the logic of computer programming, design and structure. Students will be presented effective tools needed to enhance their knowledge of using the latest innovations in technology.

CIS 120 - Programming in Python  3
Course provides an introduction to programming in Python. The class will focus on problem-solving skills in math processing. Students will learn syntax, loops, conditional statements, graphics, object-oriented design, and functions.
CIS 124 - Database Management
Course implements the relational database management system tasks. Topics include creation of databases, storing, lists and displays, indexing, report generating, creating labels, constructing screens, programming skills, control structures, menus, multi-file programming, and special techniques.

CIS 145 - Visual Basic
Course provides an introduction to programming within a graphical environment. Application development will focus on the process of designing, building and maintaining projects that may be used within a business setting. The end product will increase the efficiency and productivity of the organization. Instruction will include interactive design, game programming and database access.

CIS 148 - COBOL
Computer programming course that will use the COBOL programming language in a business environment. Instruction will include data editing, arithmetic calculations, if/then structures, loop processing, conditional statements, control level breaks, tables, and evaluate statements.

CIS 149 - Advanced COBOL
Prerequisite: CIS 148 with a grade of C or higher. Advanced COBOL programming techniques are presented in this course. Instruction covers tables, call statements, multi-file processing, and end-user interaction.

CIS 151 - DB2 Relational Database
Prerequisite: CIS 148 with a grade of C or higher. Course prepares students for programming in the DB2 environment. DB2 is a relational database. A substantial portion of the course will use SQL statements for maintaining a database.

CIS 155 - Programming in C#
Programming language C# is introduced as an application programming language. Top-down program development methodologies are discussed. Instruction includes learning the different C# language features to develop application programs.

CIS 157 - Advanced C#
Prerequisite: CIS 155 with a grade of C or higher. Course presents advanced C# programming techniques. Instruction includes data manipulation, file handling, logic processing, database access, and maintenance through SQL commands.

CIS 158 - JAVA
Introduction to object-oriented programming with a major emphasis in developing GUI based applications for business settings, web pages and smart devices.

CIS 161 - Systems Analysis
Prerequisite: CIS 124 with a grade of C or higher. Content includes the analysis and identification of multi-user computer system development. Documentation of systems requirements is stressed.

CIS 162 - Advanced Visual Basic
Prerequisite: CIS 145 with a grade of C or higher. Course is for the programmer who would like to program commercially in Visual Basic. Course covers file handling, multiple document interfacing, database maintenance, creating Crystal Reports, and creating web applications.

CIS 163 - Visual Basic with SQL
Prerequisite: CIS 145 with a grade of C or higher. Course is designed to teach extensive database administration. As databases are an integral part of interactive web and business design, the course will be useful for commercial development. Extensive use of SQL commands will be covered.

CIS 164 - Oracle I-Oracle SQL
Course provides the fundamental skills in SQL with additional coverage of Oracle's implementations of SQL. Course is designed to provide a practical working knowledge of essential Oracle database skills and technologies.

CIS 165 - Oracle II-PL/SQL
Course instructs the student in topics related to Oracle PL/SQL (Procedure Language/Structured Query Language). Subjects will include invoker's rights, object patterns, database management, and Java libraries.

CIS 168 - Game Programming
Fundamentals of how to write computer games in the C# programming language using Direct3D, DirectSound, DirectX, and DirectInput. Students will receive knowledge of game programming using 3D modeling, collision detection and animation. No previous knowledge of HTML or web design is assumed. Students are required to purchase a mass storage device such as a thumb or jump drive.

CIS 169 - Advanced JAVA
Prerequisite: CIS 158 with a grade of C or higher. Project-oriented programming course that builds upon the knowledge presented in CIS 158. Topics include database connectivity, sockets, advanced GUI programming, multi-threading, and data structures.

CIS 175 - CIS Internship
Prerequisite: Consent of program coordinator. Includes a minimum of 160 clock hours of supervised work experience that allows the student to apply CIS operation and programming theory. Recommended to be taken during the last year of study.

CIS 179 - Programming Project
Prerequisite: Consent of instructor. Must be taken during the last semester of study before completion of the CIS degree. Includes individually designed assignments that require students to develop and test a program and document program results.

CIS 180 - Problems in CIS
Prerequisite: Consent of program coordinator. Independent study of a special problem in computer systems arranged under the supervision of a CIS instructor.
CIS 185 - Project Management  3
Prerequisite: CAPP 125. Course will help students understand why organizations have developed a formal project management process to gain a competitive advantage. It covers concepts and skills that are used by managers to propose, plan, secure resources, budget, and lead project teams to successful completion of their projects. The text is structured to meet the needs of those wishing to prepare for the PMP or CAPM certification exams. Same as BSMT 185.

CONSTRUCTION TECHNOLOGY

CNST 105 - Construction Materials and Methods  3
Introductory course that provides an overview of the materials and methods used in light framing and building finish systems from floor to roof and from exterior cladding to interior finishes. Includes wood light framing, light gage metal framing, roofing, glass and glazing, cladding systems, windows and doors, interior finishes, ceilings, and floors. This course will focus on development of a fundamental knowledge base through case study and detailed product analysis.

CNST 106 - Construction Estimation  3
Examines the methods used in cost estimating in the construction industry. Skills such as quantity take-off, measurement, quote and bid solicitation, etc., are developed, as well as discussion of strategy involved in bid formulation and submissions. Computerized estimating techniques are explored, as well as manual methods. Course will require completion of a cost estimate for residential, commercial, industrial, or heavy construction projects.

CNST 113 - Construction Management  3
Discusses careers in construction as well as the general business operations involved in the construction industry. Basic overview of the legal structure of businesses, contract terms and the roles of stakeholders in a construction project.

CNST 138 - Construction Planning and Scheduling  3
 Discusses methods of organizing work items associated with a construction project into a logical sequence of optimizing efficiency and profitability. Manual and computerized scheduling methods are used in developing project schedules for both real and simulated projects.

CNST 142 - Building Mechanical Systems  3
Introduction to the understanding of components and design of major building mechanical systems. Topics include electrical, plumbing and HVAC systems in buildings. Design calculations for proper sizing of system components are discussed, as well as the various methods and materials used in the construction of such systems.

CNST 145 - Construction Methods I  3
Students will study the methods used to install various construction materials related to the major divisions of the Construction Specification Institute (CSI) format during their first year.

CNST 146 - Construction Methods II  3
Continuation of CNST 145 for students in their second year. Students will study the methods used to install various construction materials related to the major divisions of the Construction Specification Institute (CSI) format.

CNST 148 - Construction Codes and Law  3
Overview of legal requirements related to the design and execution of construction projects. The International Building Code is studied, and upon completion of the course, the student will be capable of navigating it and many other similar reference manuals. Other legal aspects of the construction industry are discussed including, but not limited to, contract law as well as liability issues.

CNST 150 - Building Layout and Surveying  3
Prerequisite: MATH 108 or MATH 114 with a grade of C or higher or equivalent placement score. Construction field engineering activities to include surveying, site/building layout and dimensional control. Interpretation of plot books, site plans, and topographic maps is also included.

CNST 160 - Statics and Strength of Materials  3
Prerequisite: MATH 108 or MATH 114 or equivalent placement score. Introduces the fundamentals of structural analysis and design. Materials and structural systems are discussed in terms of load bearing properties as well as economy of construction. Students will gain a greater understanding of how structures work as well as how choices are made regarding the selection of appropriate materials and systems to meet a given need.

CNST 162 - Construction Safety  3
Comprehensive discussion of job safety and best practices as they pertain to the construction industry. A general philosophy of safety awareness is achieved through study of specific hazards and case studies. Students will be required to obtain the OSHA 10-hour certification, understand OSHA regulations as well as legal implications on the construction industry.

CNST 175 - Construction Management Internship  4 to 8
Prerequisite: Consent of program coordinator. Cooperative work experience within the construction industry setting. Student will work as a management-level employee for an established construction related firm. Periodic site visits and employer interviews by the instructor will ensure that student is performing meaningful management level functions and is generally meeting the expectations of the course.

CRIMINAL JUSTICE

CJ 101 - Introduction to Law Enforcement  3
Examines the history of policing in the United States and an overview of the relationship between law enforcement and the American society. Includes an examination of the duties of law enforcement officers, the operations of police agencies, police-community relations, the police subculture, and the need for police objectives to conform to constitutional procedures.
CJ 102 - Introduction to Criminal Justice  
Examines the history, development and function of the criminal justice system in America. Will examine the three major components of the system: police, courts and corrections, as well as their interrelationships.

CJ 103 - Traffic Safety and Investigation  
Introduces traffic control and accident investigation in modern cities; reviews principles of organizing and administering police units for traffic enforcement, accident prevention and safety education; and presents basic techniques of accident investigation, analysis and interpretation.

CJ 104 - Criminal Investigation  
Course includes theory, methods and procedures of criminal investigation with attention given to its historical origins, the investigator, organization and management of the investigative function; and various investigative methods such as crime scene investigation, techniques of interviewing, collection of evidence, suspect development, and case preparation.

CJ 105 - Criminal Law  
Examination of criminal, common and statutory law with its application to the criminal justice system. Emphasis will be placed on the classification of crime and criminal behavior including the necessary elements and mental states of criminal acts. Course will also examine criminal acts based on Missouri criminal statutes.

CJ 107 - Criminology  
Examines the various theories of criminal behavior and crime causation as well as the problems of treatment, corrections and control of crime. Course also looks at patterns of crime, research methods and the response to criminal behavior.

CJ 109 - Juvenile Delinquency  
Examines the origins, philosophy and objectives of the juvenile justice system in America including the concept of juvenile delinquency and its causes, juvenile case dispositions and juvenile detention procedures. Close attention will be placed on the organization, function and jurisdiction of juvenile justice agencies and the application of the Missouri Juvenile Code.

CJ 111 - Introduction to Corrections  
Examines the history, development and present components of both institutional and community-based corrections in America.

CJ 115 - Procedural Law  
Examines the U.S. Constitution, court cases, statutes, and other sources of regulation in the field of criminal procedure. These regulatory documents will be examined and considered as to how they apply to criminal law and the administration of justice. Specific issues to be covered include search and seizure, interrogations and confessions, grand jury investigations, identification procedures, and the right to counsel.

CJ 118 - Criminal Justice Communications  
Provides direction and guidance for students seeking entry-level careers in law enforcement and corrections with additional examination of written and verbal communications. Provides instruction concerning the reporting of factual information in an accurate and proper format. In addition to reinforcing basic writing tools, course will stress the components of typical police writing formats. Topics such as interviewing and interrogation techniques and courtroom testimony will also be covered.

CJ 122 - Current Events in Criminal Justice  
Provides an intensive examination of major issues affecting the criminal justice system and their interaction with society and the democratic process. Topics may include capital punishment, terrorism, drug abuse, and serial killers.

CJ 124 - Drugs, Society and Criminal Justice  
Designed to provide an overview of the relationship between drugs and crime as well as the response of the criminal justice system to illegal drug use. Course includes current U.S. drug abuse trends and patterns; review of the history of drug abuse and legal attempts to control such abuse; exploration of the physiological, psychological and sociological effects of common abused drugs; and a discussion of the connections between drug abuse and crime.

CJ 150 - Criminal Justice Seminar  
Prerequisite: Consent of program coordinator. Capstone course for the Associate of Applied Science degree in Criminal Justice. This course must be completed during the last semester prior to graduation. Course will focus on preparing the student for employment in the criminal justice field including, but not limited to, résumé and application development, ethics in criminal justice, preparation for hiring processes in law enforcement, career choice, career search skills, and mock interviews. Students will also be required to complete the NOCTI exam as part of the program and this class.

CJ 175 - Supervised Occupational Experience in Criminal Justice  
Prerequisites: CJ 102 and consent of program coordinator. Provides students with the opportunity to observe and experience the operation of a selected agency within the criminal justice system. Program will require the student to spend a minimum of 160 hours with the agency during the semester as well as the completion of other requirements. Students will be required to correspond with the instructor.

CJ 180 - Problems in Criminal Justice  
Prerequisites: CJ 102 and consent of program coordinator. Independent study of a special problem in criminal justice under the direct supervision of a criminal justice instructor.
**DENTAL HYGIENE**

**DH 102 - Dental Radiography**
Introduction to dental radiology for students enrolled in the Dental Hygiene program. Component parts, functions, operations of the dental x-ray unit, and radiation safety is emphasized. Relationships between anatomical and radiographic landmarks are analyzed.

**DH 104 - Dental Radiography Lab**
Introduction to the radiology laboratory intended for the first year student enrolled in the Dental Hygiene program. Emphasis on dental x-ray techniques, film development and mounting. Radiation safety protection is practiced for all laboratory procedures. All films will be viewed for self-critique and instructor evaluation.

**DH 106 - Dental Clinical Emergencies**
Course presents procedures to properly manage common medical emergencies, as well as emergencies specific to the dental office. Information is also included concerning emergency protocol and medications used in the dental office. Adult, child and infant CPR, choking, and child and adult AED are included. Upon successful completion of this course, the student will receive certification from the American Heart Association for Health Care Provider CPR/ AED.

**DH 108 - Oral Anatomy and Histology**
Course is designed to prepare dental hygiene students for the application of detailed knowledge about oral anatomy to planning, implementation, assessment, and evaluation of patient care. Students identify distinguishing characteristics of normal and abnormal dental, head and neck anatomy and its relationship to tooth development, eruption and health.

**DH 111 - Pharmacology**
Provides basic drug terminology, general principles of drug interactions, routes of administration, adverse reactions, and drugs that alter dental treatment. Emphasis will be placed on knowledge of drugs in understanding patient health history and developing a care plan.

**DH 113 - Dental Hygiene Ethics and Legal Issues**
Designed to provide the student with knowledge of professional development, ethics and jurisprudence as related to clinical practice. Topics will include basic principles of ethics, conflict management, state dental laws, and legal liabilities of health care professionals. Professional conduct and roles in professional organizations are fostered through knowledge of the code of ethics of the profession and political involvement. The Missouri State Jurisprudence test is the final for this course.

**DH 115 - Community Dental Health I**
Introduction to community dental health problems and disparities that exist in health care. The science of epidemiology, research and writing skills, and biostatistics. An analysis of current dental health issues and initial development of a community dental health program. Evaluation of scientific literature will be developed. (1.5 lecture, 0.5 lab)

**DH 117 - Community Dental Health II**
Emphasis on the steps to developing community dental health programs, including health promotion programs. Local, state and federal departments of public health services, types of fluoridation and school-based dental health programs and screenings will be presented. Evidence-based decision-making will be applied to the dental public health setting.

**DH 118 - Principles of Periodontics**
Biological and clinical aspects of periodontal health and pathology. Introduction to the supporting structures of the teeth will provide the foundation for understanding pathogenesis, histopathology and subsequent therapeutic treatment of periodontal diseases. The dental hygienist's role in recognition, prevention and treatment of periodontal diseases and maintenance of periodontal health is examined. The student will be immersed in a variety of educational settings and evaluation techniques through classroom cooperative learning and topic presentation, as well as synthesis of knowledge with an actual clinic patient.

**DH 120 - Dental Biomaterials with Lab**
Students will study the chemistry of biomaterials used in the oral cavity and how to discern what products to use when taking impressions, creating study models, polishing resin or alloy filling, and delivering dental sealants. Students will use alginate materials to take an impression and resins to produce a dental sealant. Other activities include personal mouth protection devices; placing a rubber dam; polishing a restoration; mixing cements, dental alloys and impression materials; as well as using periodontal dressing and removing sutures. (1 lecture, 1 lab)

**DH 122 - General and Oral Pathology**
Course introduces the dental hygiene student to the study of disease, general pathology terminology and disorders of the human systems, with a detailed study of pathologic conditions of the oral cavity and surrounding structures. This will include concepts of immunity; infectious diseases and cancer; oral manifestations of systemic diseases; and principles of oral-systemic relationships.

**DH 124 - Applied Nutrition and Oral Health Education**
Course will present the sources and uses of nutrients and provide a biochemistry background for the metabolism of these dietary components. Course will prepare the dental hygiene student to fulfill his or her role in oral health education as it relates to patient home care habits, motivation and dietary effects on the oral cavity.
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
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<tr>
<td><strong>DH 128 - Local Anesthesia</strong></td>
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<tr>
<td>Course is designed to prepare dental hygiene students for the safe, effective administration of local anesthesia. Included are content areas in anatomy, physiology, pharmacology, and emergency management. Laboratory sessions provide actual experiences in administration of local anesthetics. (1 lecture, 1 lab)</td>
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| **DH 131 - Introduction to Dental Hygiene Theory** | 2 |
| Course is designed to acquaint the student with the professional, educational and therapeutic services of a dental hygienist and provide the background, knowledge and skills necessary to function in subsequent dental hygiene courses. |

| **DH 133 - Dental Hygiene Theory I** | 2 |
| Prerequisites: DH 131 and DH 140 with grades of B or higher. Students will be introduced to the process of scientific literature review and the principles of evidence-based decision making. Concepts of fluoridation, selective coronal polishing, ultrasonic scaling, instrumentation, sharpening, and patient education will be introduced and built upon as the semester progresses. |

| **DH 134 - Dental Hygiene Theory II** | 1 |
| Prerequisite: DH 141 with a grade of B or higher. Course is designed to introduce more advanced clinical techniques. Principles of ultrasonic scaling, air powder polishing, use of intra-oral cameras, and office management software will be introduced. Management of patients with sensitivity, dental therapeutics and locally applied antimicrobials will also be employed. |

| **DH 135 - Dental Hygiene Theory III** | 2 |
| Prerequisites: DH 134 and DH 143 with grades of B or higher. This course will focus on the management of patients with special needs including physical, mental, social, and emotional. Additional content will relate to patients with medically compromised conditions affecting care. |

| **DH 136 - Dental Hygiene Theory IV** | 2 |
| Prerequisites: DH 136 and DH 144 with grades of B or higher. The course will involve analysis of scientific literature and preparation of a table clinic, creation of a website as well as self-directed review of program material and improvement of test-taking skills for enhanced recall of material in preparation for the National Dental Hygiene Board Examination (NDHBE). |

| **DH 140 - Dental Hygiene Pre-Clinic I** | 4 |
| Course is designed to acquaint the student with the role of a dental hygienist and provide the background knowledge and skills necessary to function in subsequent dental hygiene clinical courses. Basic principles of ergonomics, instrumentation, infection control, patient examination, and education are presented in this course. |

| **DH 141 - Dental Hygiene Pre-Clinic II** | 2 |
| Prerequisites: DH 131 and DH 140 with grades of B or higher. Continuation of dental hygiene clinical practice and instrumentation techniques including periodontal examination, scaling and root planing and sharpening. Adjunctive dental hygiene procedures taught include fluorides and selective coronal polishing. Clinical activities utilize typodonts and student partners. Student's clinical performance will be evaluated. |

| **DH 142 - Dental Hygiene Clinic I** | 2 |
| Prerequisite: DH 141 with a grade of B or higher. Introduction to clinical dental hygiene practice. Emphasis on assessing, planning, dental hygiene diagnosis, and implementing comprehensive dental hygiene care on patients in a clinical setting. Students apply knowledge, critical thinking and basic clinical skills acquired in previously completed dental hygiene courses. |

| **DH 143 - Dental Hygiene Clinic II** | 3 |
| Prerequisites: DH 134 and DH 142 with grades of B or higher. Course continues skill development in the provision of dental hygiene care. Students continue clinical skill development by creating care plans that emphasize data assessment, analysis of risk factors and sequencing of care. |

| **DH 144 - Dental Hygiene Clinic III** | 6 |
| Prerequisites: DH 134 and DH 143 with grades of B or higher. Course continues skill development in the provision of dental hygiene care. Students continue clinical skill development by creating care plans that emphasize data assessment, analysis of risk factors and sequencing of care. Clinical emphasis will be on the treatment of advanced periodontal cases. |

| **DH 145 - Dental Hygiene Clinic IV** | 6 |
| Prerequisites: DH 135 and DH 144 with grades of B or higher. Dental hygiene skill will be perfected in this course. Students will be encouraged to make clinical decisions based on the evidence present by the individual patient. Clinical emphasis will be on the treatment of advanced periodontal cases. Clinical method of instruction and evaluation is competency-based. |
### Diagnostic Medical Sonography

#### DMS 102 - Patient Care and Health Care Communication
Entry-level patient care, professionalism and critical thinking skills utilized in the daily responsibilities of an imaging professional are presented in preparation for student clinical rotations. Best practice verbal and nonverbal communication skills within the health care setting are introduced. Students will learn about appropriate communication for health care providers in culturally sensitive and age-specific situations. Electronic communication basics as well as a brief review of fundamental writing skills will also be covered. Students will also complete training to receive American Heart Association CPR for Healthcare Providers certification. Local students must take the CPR course on campus. Nonlocal students have the option of taking the CPR course on campus or finding a local course that is approved by the American Heart Association.

#### DMS 103 - Cardiac Ultrasound I
Introduction to cardiac ultrasound fundamentals including principles of imaging, scan modes, cardiac anatomy and physiology, embryology, evaluation methods, and hemodynamics. Discusses diagnostic adult cardiac ultrasound including normal appearance, scanning techniques, patient care, and an introduction to pathology.

#### DMS 105 - Sonography Clinical Education I
Prerequisite: DMS 107 with a grade of B or higher. Internship of the Diagnostic Medical Sonography profession. Students will actively participate in the daily activities and patient examinations of an ultrasound department under the direct supervision of a registered sonographer. Students will begin obtaining scan competencies in this course. They must properly utilize the Trajecsys system to document hours spent in the clinical site and to log all observed and performed exams. Students must also complete scanning competencies as outlined in the DMS Student Handbook. Students are required to spend 24 hours per week in clinical for a total of 272 hours. All hours must be completed by the end of the semester. Clinical education settings can include, but are not limited to, hospital imaging departments, doctor’s offices, medical clinics, imaging centers, and mobile sonography practices.

#### DMS 107 - Ultrasound Scanning Lab I
Instructional lab consisting of instructor-guided hands-on scanning sessions in the Diagnostic Medical Sonography lab. Practical basic preparation for student’s first clinical education experience. Students admitted as nonlocal will complete these credit hours in a clinical setting and will complete assignments and tests as assigned by the lab instructor. In addition to lab contact hours the student may be assigned to complete 2 to 16 hours in a clinical setting.

#### DMS 108 - Seminar in Sonography
This writing intensive research–based course facilitates a comprehensive overview of sonography as part of the larger health care apparatus. Topics may include, but are not limited to case studies, physician interaction, other imaging modalities, laboratory exams, health care professions, ethical and legal considerations, billing and records, and professional organizations.

#### DMS 113 - Cardiac Ultrasound II
Prerequisite: DMS 103 with a grade of B or higher. Continuation of DMS 103. Cardiac ultrasound fundamentals including principles of imaging, scan modes, cardiac anatomy and physiology, embryology, evaluation methods, and hemodynamics. Discusses diagnostic adult cardiac ultrasound including normal appearance, scanning techniques, patient care, and pathology.

#### DMS 115 - Sonography Clinical Education II
Prerequisite: DMS 105 with a grade of B or higher. Internship of the Diagnostic Medical Sonography profession. Students will actively participate in the daily activities and patient examinations of an ultrasound department under the supervision of a registered sonographer. Students will obtain scan competencies in this course. They must properly utilize the Trajecsys system to document hours spent in the clinical site and to log all observed and performed exams. Students must also complete scanning competencies as outlined in the DMS Student Handbook. Students are required to spend 32 hours per week in clinical for a total of 272 hours. All hours must be completed by the end of the semester. Clinical education settings can include, but are not limited to, hospital imaging departments, doctor’s offices, medical clinics, imaging centers, and mobile sonography practices.

#### DMS 117 - Ultrasound Scanning Lab II
Prerequisite: DMS 107 with a grade of B or higher. Continuation of DMS 107. Instructional lab consisting of instructor-guided hands-on scanning sessions in the Diagnostic Medical Sonography lab. Practical basic preparation for student’s continued clinical education experience. Students admitted as nonlocal will complete these credit hours in a clinical setting and will complete assignments and tests as assigned by the lab instructor.

#### DMS 120 - Sonography Principles and Instrumentation I
Comprehensive instruction on acoustic physics, Doppler ultrasound principles, hemodynamics, and ultrasound instrumentation. Bioeffects, safety and the interactions between ultrasound and tissues will be presented. Quality assurance, quality improvement and sonography department protocols will also be covered.
DMS 122 - Sonography Principles and Instrumentation II
Prerequisite: DMS 120. Continuation of DMS 120. Comprehensive instruction on acoustic physics, Doppler ultrasound principles, hemodynamics, and ultrasound instrumentation. Bioeffects, safety and the interactions between ultrasound and tissues will be presented. Quality assurance, quality improvement and sonography department protocols will also be covered. This course will include Sonography Principles and Instrumentation (SPI) registry review material and mock exams.

DMS 123 - Cardiac Ultrasound III
Prerequisite: DMS 113 with a grade of B or higher. Continuation of DMS 113. Cardiac ultrasound fundamentals including principles of imaging, scan modes, cardiac anatomy and physiology, embryology, evaluation methods, and hemodynamics. Discusses diagnostic adult cardiac ultrasound including normal appearance, scanning techniques, patient care, and pathology.

DMS 125 - Sonography Clinical Education III
Prerequisite: DMS 115 with a grade of B or higher. Internship of the Diagnostic Medical Sonography profession. Students will actively participate in the daily activities and patient examinations of an ultrasound department under the supervision of a registered sonographer. Students will obtain scan competencies in this course. They must properly utilize the Trajecsys system to document hours spent in the clinical site and to log all observed and performed exams. Students must also complete scanning competencies as outlined in the DMS Student Handbook. Students are required to spend 24 hours per week in clinical for a total of 384 hours. All hours must be completed by the end of the semester. Clinical education settings can include, but are not limited to, hospital imaging departments, doctor’s offices, medical clinics, imaging centers, and mobile sonography practices.

DMS 130 - General Sonography I
Course includes a brief review of the anatomy, physiology and sectional anatomy of the human abdomen, superficial structures, and noncardiac chest. Pathology and pathophysiology specific to the general concentration will be presented. Recognition of the normal and abnormal sonographic appearances of the human thoracic, abdominal and superficial anatomy will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.

DMS 132 - General Sonography II
Prerequisite: DMS 130. Continuation of DMS 130. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human abdomen, superficial structures and non-cardiac chest. Pathology and pathophysiology specific to the general concentration will be presented. Recognition of the normal and abnormal sonographic appearances of the human thoracic, abdominal and superficial anatomy will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.

DMS 133 - Cardiac Ultrasound IV
Prerequisite: DMS 123 with a grade of B or higher. Continuation of DMS 123. Cardiac ultrasound fundamentals including principles of imaging, scan modes, cardiac anatomy and physiology, embryology, evaluation methods, and hemodynamics. Discusses diagnostic adult cardiac ultrasound including normal appearance, scanning techniques, patient care, and pathology. Will include an introduction to pediatric echo.

DMS 134 - General Sonography III
Prerequisite: DMS 132. Continuation of DMS 132. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human abdomen, superficial structures and noncardiac chest, and is a continuation of DMS 130 and DMS 132. Pathology and pathophysiology specific to the general concentration will be presented. Recognition of the normal and abnormal sonographic appearances of the human thoracic, abdominal and superficial anatomy will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed. This course will include Abdominal Sonography registry review material and mock exams.

DMS 135 - Sonography Clinical Education IV
Prerequisite: DMS 125 with a grade of B or higher. Internship of the Diagnostic Medical Sonography profession. Students will actively participate in the daily activities and patient examinations of an ultrasound department under the supervision of a registered sonographer. Students will obtain scan competencies in this course. They must properly utilize the Trajecsys system to document hours spent in the clinical site and to log all observed and performed exams. Students must also complete scanning competencies as outlined in the DMS Student Handbook. Students are required to spend 24 hours per week in clinical for a total of 384 hours. All hours must be completed by the end of the semester. Clinical education settings can include, but are not limited to, hospital imaging departments, doctor’s offices, medical clinics, imaging centers, and mobile sonography practices.

DMS 140 - OB/GYN Sonography I
Course includes a brief review of the anatomy, physiology and sectional anatomy of the human gravid and nongravid pelvis. Pathology and pathophysiology specific to the obstetrics and gynecology concentration will be presented. Recognition of the normal and abnormal sonographic appearances of the female human gravid and nongravid pelvis will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed. Human embryology as appropriate will be presented.
DMS 142 - OB/GYN Sonography II  2
Prerequisite: DMS 140. Continuation of DMS 140. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human gravid and nongravid pelvis. Pathology and pathophysiology specific to the obstetrics and gynecology concentration will be presented. Recognition of the normal and abnormal sonographic appearances of the female human gravid and nongravid pelvis will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed. Human embryology as appropriate will be presented.

DMS 150 - Vascular Sonography I  2
Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice direct and indirect examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.

DMS 152 - Vascular Sonography II  2
Prerequisite: DMS 150. Continuation of DMS 150. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice direct and indirect examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.

DMS 154 - Vascular Sonography III  2
Prerequisite: DMS 152. Continuation of DMS 152. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems and is a continuation of DMS 150 and DMS 152. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice direct and indirect examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed. This course will include Vascular Sonography registry review material and mock exams.

DMS 156 - Vascular Sonography IV  2
Prerequisite: DMS 154. Continuation of DMS 154. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed. Human embryology as appropriate will be presented.

DMS 158 - Vascular Sonography V  2
Prerequisite: DMS 156. Continuation of DMS 156. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice direct and indirect examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.

DMS 160 - Vascular Sonography VI  2
Prerequisite: DMS 158. Continuation of DMS 158. Course includes a brief review of the anatomy, physiology and sectional anatomy of the human venous and arterial systems. Pathology and pathophysiology specific to the vascular concentration will be presented. Recognition of the normal and abnormal sonographic appearances of human vascular anatomy will be taught. Best practice direct and indirect examination methods utilizing ultrasound technology are presented. Basic exam protocols will be discussed.
SECTION 3

COURSE DESCRIPTIONS

ECD 117 - Creative Expression and Play
Prerequisites: EDUC 108 and the successful completion of an approved background screening. Presents the development of creative expressions in the young child through activities such as music, art and dance, and their incorporation into the daily curriculum. The value of children’s play and discovery as learning opportunities will be emphasized.

ECD 121 - Curriculum Strategies for Early Childhood
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ECD 101, ECD 107, ECD 109 with grades of C or higher and ENGL 070 with a grade of C or higher or equivalent placement scores. Course is an examination of techniques, learning activities and materials used to teach young children with an emphasis on planning and implementing a developmentally appropriate curriculum utilizing the Constructivist Theory.

ECD 125 - Introduction to Special Individuals
Prerequisites: EDUC 108 and the successful completion of an approved background screening. Presents an introduction to characteristics of exceptional individuals and educational history and theories with exceptional individuals, especially children. Study will include effects of disability on adjustment to home, school, community, and on families of young children. Includes an overview of federal and state systems of support for children with special needs.

ECD 127 - Parent/Teacher Interaction
Course presents the principles of child development with family relationships applied to group and individual work with parents. It is intended to help providers in developing skills that will help them effectively relate to parents. Topics will include communication techniques, children’s fears, discipline, nutrition, and school and community resources.

ECD 129 - Administration in Early Childhood Care
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ECD 101 through ECD 127 with grades of C or higher. Course presents the operation of a child care facility including staff relations, budgeting, ordering, planning, and evaluating center operations. Early childhood care center ethics, funding opportunities, licensing, curriculum, and parent involvement are also incorporated into this course.

ECD 131 - Child Development Portfolio/Assessment Preparation
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ECD 101 and ECD 107 with grades of C or higher, and consent of instructor. Course provides a step-by-step approach of the activities necessary to complete the degree requirements. Course is a review of the functional areas along with an emphasis on the general understanding of the physical, social, emotional, language, and cognitive development of early childhood. The competencies required and the assessment processes are considered important components of this course.

ECD 175 - Child Care Practicum
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ECD 101 through ECD 129 with grades of C or higher. Course presents the operation of a child care facility including staff relations, budgeting, ordering, planning, and evaluating center operations. Early childhood care center ethics, funding opportunities, licensing, curriculum, and parent involvement are also incorporated into this course.

EARTH SCIENCE

EASC 101 - Introduction to Earth Sciences with Lab
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to earth science that concentrates on understanding the earth’s dynamic environments through the scientific study of processes and physical and human interactions related to geology, meteorology and astronomy. Lab topics include introduction to minerals and rocks, plate tectonics, geologic time, maps, earthquakes, weather, and basic astronomy. (4 lecture, 1 lab)

EASC 106 - Physical Geology with Lab
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Provides an understanding of the forces that were active in the formation of the Earth, the processes whereby the surface of the Earth is sculptured, the identity of Earth materials, and the location and value of the Earth’s resources. Topics include history of geology, plate tectonics, matter and minerals, rocks, volcanoes, weathering and soil, geologic time, earthquakes, plate boundaries, water and energy. Rock and mineral identification is a large part of the lab section of this course. Labs include identification of rocks and minerals, plate tectonics and geologic time. (4 lecture, 1 lab)

EASC 118 - Environmental Geology
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Focuses on natural hazards and the human consequences associated with geologic processes. Topics include the study of plate tectonics, earthquakes, volcanoes, floods, tornadoes, storms, wildfires, pollution, climate change, and global warming. Emphasis is placed on how these hazards affect humans and how human activity affects Earth’s environment.

EASC 120 - Introduction to Astronomy
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to our present knowledge of the universe. Topics include the solar system, stellar astronomy and the structure of the universe.

EASC 180 - Problems in Earth Science
Prerequisite: Consent of instructor. Independent study of a special problem in earth science under the supervision of a science instructor.
ECONOMICS

ECON 101 - Principles of Macroeconomics  3
Prerequisites: ENGL 070 and MATH 061 with grades of C or higher or equivalent placement scores. Examines the economy as a whole with an emphasis on how scarcity affects a nation. Topics include understanding and measuring economic growth, inflation, unemployment, monetary and fiscal policy, and exchange rates.

ECON 102 - Principles of Microeconomics  3
Prerequisites: ENGL 070 and MATH 061 with grades of C or higher or equivalent placement scores. Examines the price system and resource allocation, markets and efficiency, production costs, wage determination, market structures, and the role of government in regulating and supplementing the pricing system.

ECON 180 - Problems in Economics  1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in economics under the supervision of an economics instructor.

EDUCATION

EDUC 108 - Introduction to the Field of Education .5
Course is a prerequisite requirement for all potential students seeking an AAT degree in Elementary Education or an AAS in Early Childhood Development. Topics will include professionalism in the field, mandatory background screenings, health requirements, membership in professional organizations, observations and participation in classroom experiences, exit exams, and employment opportunities. The Department of Elementary and Secondary Education standards will be introduced along with state certification and transfer degree options. This is a pass/fail course.

EDUC 110 - Introduction to Physical Education in the Elementary School  2
Prerequisites: EDUC 108 and the successful completion of an approved background screening. Recommended for sophomore physical education majors and elementary education majors. Study of special methods and materials to be used in the teaching of elementary school physical education. Topics include course organization, teaching procedures and opportunities for integrating the physical education program with the school curriculum. Course will fulfill the wellness requirement.

EDUC 147 - Introduction to Teaching Online  2
Prerequisite: Consent of instructor. Introductory course designed to assist faculty in developing courses that are either web-based or web-assisted. Provides instruction for very basic course planning and will focus on topics such as methods, strategies, techniques, trends, and terminology used in instruction in general and online education in particular. Articles will be assigned for reading and discussion, and preliminary documents for teaching online courses will be created. Course is restricted to SFCC faculty.

EDUC 149 - Teaching with LMS Software  2
Prerequisite: Consent of instructor. Introductory course is designed to assist faculty in learning how to use the campus learning management system for facilitating web-based and web-assisted courses. Topics will include using the various components of the software as well as uploading and editing documents, getting technical assistance and managing information. In addition, issues pertinent to online education will be discussed. Course is restricted to SFCC faculty.

EDUC 180 - Problems in Teacher Education  1 to 3
Prerequisite: Consent of program coordinator. Independent study of a special problem in teacher education under the supervision of the program coordinator.

EDUC 205 - Teaching Profession with Field Experience  3
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ENGL 101 with a grade of C or higher. Course provides an opportunity to observe teaching and learning for 30 hours or more in pre K-12 classrooms. Students are introduced to the requirements for teacher preparation and certification. Students will examine characteristics of effective teaching. Course is designed to assist students in determining if a career in teaching is an appropriate goal.

EDUC 209 - Foundations of Education in a Diverse Society  3
Prerequisite: ENGL 101 with a grade of C or higher. Course examines the historical, philosophical, sociological, political, economic, and legal foundations of the American public education system. Students will explore the nature of school environments, design and organization of school curricula, characteristics of effective schools, and instruction in grades pre K-12. Educational structures, practices and projections for the future will be studied.

EDUC 212 - Educational Technology  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Students will learn to integrate instructional technology into the pre K-12 classrooms. Students will study a variety of software programs, presentation technology and telecommunication tools. Focus will also be on social, ethical, legal, and human issues surrounding the use of technology.

EDUC 218 - Children's Literature  3
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ENGL 070 with a grade of C or higher or equivalent placement scores. Intensive introduction to various genres of literature for children and ways of presenting literature in preschool, elementary or middle school.
EDUC 220 - Educational Psychology
Prerequisite: PSY 101 or PSY 102 with a grade of C or higher. Course is designed to help students relate the application of psychological principles to teaching, learning and assessment, and the educational practice in pre-K-12 classrooms. It will focus on the learner and the learning process, teacher characteristics and classroom processes that increase student motivation. Student diversity and appropriate instructional strategies for students with special needs will also be introduced. Writing papers in APA format is required.

EDUC 228 - Education of Exceptional Learners
Pre K-12
Prerequisites: EDUC 108 and the successful completion of an approved background screening and ENGL 070 with a grade of C or higher or equivalent placement scores. Survey course is an introduction to the exceptional learners and their education in grades pre-K-12. Students will attain knowledge, skills and dispositions that will enable them to work effectively with exceptional learners in general education or special education. Course will cover the adaptations of daily activities in inclusive classrooms.

EDUC 240 - Multicultural Education
Prerequisite: ENGL 101 with a grade of C or higher. Historical and contemporary analysis of educational policies incorporating ethnic, religious and linguistic minorities. The teacher candidate will gain awareness of diversity and develop a theoretical understanding through investigations of diversity within the local community by using selected presentations, text readings and survey of a professional and classroom action plan.

EDUC 250 - Paraprofessional Educator Practicum
Pre K-12
Prerequisites: EDUC 108 and the successful completion of an approved background screening. ENGL 101 with a grade of C or higher and consent of program coordinator. Students will actively participate, under supervision, in a paraprofessional setting for a total of 60 hours. Students will be responsible for implementation of duties assigned by the internship supervisor.

EDT 105 - Print Reading for Construction
Course introduces the concepts of sketching, technical drawing, measurement, scale, format, and how they are applied to reading drawings in mechanical, architectural, civil, structural, and electrical fields. The relationship between the intent of the drawings, trade practices, American Society of Mechanical Engineers (ASME) standards, and the ability to extract and utilize information found on various kinds of drawings will be emphasized.

EDT 111 - Introduction to Engineering Design
Course will involve the production of 2D technical drawings that meet industry standards using software. Emphasis will be placed on precision, accuracy and productivity. The use of symbols, line types, line weights, orthographic projection, multi-view placement, text format, dimensions, section views, auxiliary views, isometric views, plotting accuracy, and a variety of design fields will be reviewed.

EDT 115 - Advanced Engineering Design
Prerequisite: EDT 111 with a grade of C or higher. Course presents topics required for creating accurate two- and three-dimensional geometry. Study will include development of dimension styles, use of annotative objects and management of external references, blocks, attributes, and other advanced aspects of the software to maximize productivity.

EDT 120 - Architectural Design
Course offers the fundamentals of architectural design as it relates to light wood construction consistent with, but not limited to, residential construction. This course introduces building elements, Building Information Modeling (BIM) techniques, building code requirements, and professional and regional influences.

EDT 125 - Architectural Applications
Prerequisite: EDT 120 with a grade of C or higher. Course will introduce students to architectural software widely used in the commercial field to produce architectural models and working drawings. Building Information Management (BIM), design development, construction documentation, and planning techniques relating to the software will be emphasized.

EDT 130 - Manufacturing Design I
Course will introduce students to the fundamentals of Solid Modeling software to produce parametric models, assemblies, presentations, and drawings for the manufacturing industry. Topics will include sketches, reference planes, relations, part modeling techniques, constraints, mates, evaluation tools, redesign, and presentation techniques.

EDT 132 - Manufacturing Design II
Prerequisite: EDT 130 with a grade of C or higher. Advanced course presents different 3D and parametric solid modeling applications using Solid Modeling software. Studies include the development and generation of advanced 2D and 3D sketches, solid models, assemblies, presentations, and creating complex and detailed drawings, analyzing and testing solid models, and developing physical models with rapid prototyping equipment. Each student will complete an individual design project involving a mechanical assembly with appropriate documentation.
EDT 134 - Computer Aided Manufacturing  
Prerequisite: EDT 130 with a grade of C or higher. Course presents principles of computer aided manufacturing (CAM) and computer numerically controlled (CNC) machining, including lathes and mills utilizing CAM and other software. Students will design 3D parts, generate CAM code, tool paths, and graphically verify tool paths. Students will develop physical models with rapid prototyping and CNC equipment.

EDT 155 - 3D Visualization  
Course presents 3D modeling using a variety of currently utilized modeling software. Students will produce multiple projects using selected ACIS and parametric modeling software applying rendering and animation software to produce presentations of the models created.

EDT 175 - EDT Internship  
Prerequisites: EDT 115 with a grade of C or higher and consent of program coordinator. Course offers a cooperative work experience within an industry setting for Engineering Design Technology students. Students work under the supervision of an approved professional or specialist in the engineering design field. The instructor is a coordinator between the student and the employer and monitors the internship. A minimum of 160 work (clock) hours on the job site is required for successful completion of the course. Students will submit progress reports and a final report documenting the work experience.

EDT 180 - Problems in EDT  
Prerequisites: EDT 115 with a grade of C or higher and consent of program coordinator. Course includes the study of special problems and/or projects in Engineering Design Technology. The student works with industry and/or the instructor to solve a specific problem and/or complete project.

EDT 190 - EDT Capstone  
Prerequisites: EDT 115 with a grade of C or higher and consent of program coordinator. Student will complete a complex independent study project in an architectural, civil, mechanical, or another engineering design-related field with instructor input and guidance. The capstone course will promote critical thinking skills and technical resourcefulness while allowing students to broaden and show mastery of their engineering design skills.

ENGLISH

ENGL 005 - Intensive English for Non-Native Speakers  
Course is for students whose primary language is not English. Course will cover basic English grammar and usage for academic purposes, as well as speaking, listening, reading, and writing skills necessary for academic success. Does not apply toward a degree or certificate.

ENGL 060 - Foundations of English I  
Prerequisite: Equivalent placement scores. Course is designed to develop students’ critical reading and writing skills. Students will learn how to independently read and understand academic texts and respond to the ideas presented in those texts through well-written paragraphs. Successful completion requires a 70 percent in the course. Does not apply toward a degree or certificate.

ENGL 070 - Foundations of English II  
Prerequisite: ENGL 060 with a grade of C or higher or equivalent placement scores. Corequisite: ENGL 101. Course focuses on applying critical reading and writing skills for organizing, analyzing and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. Students will learn how to independently read and understand academic texts and critically respond to the ideas presented in those texts via well-organized essays. Successful completion requires a 70 percent in the course. Does not apply toward a degree or certificate.

ENGL 090 - Introduction to English Composition  
This one-hour course is designed as a review for students with borderline reading and writing scores, preparing them to retest in order to improve their scores. The course covers active reading, common errors in writing and a source-based paper. This is a pass/fail course. Does not apply toward a degree or certificate.

ENGL 101 - English Composition I  
Prerequisite: ENGL 090 as a corequisite or with a grade of C or higher or equivalent placement scores. Emphasizes planning, drafting and revising along with critical thinking and information management skills and their role in communicating concise written ideas to a range of audiences for a variety of purposes. Basic computer skills are essential for successful completion.

ENGL 102 - English Composition II  
Prerequisite: ENGL 101 with a grade of C or higher. Combines the process writing techniques acquired in ENGL 101 with higher-order reasoning and advanced research skills to communicate ideas in meaningful and effective writing. Basic computer skills are essential for successful completion.

ENGL 106 - Creative Writing  
Study and practice in the techniques of writing poetry, fiction, nonfiction and/or drama. Emphasis is placed on the recognition of those techniques in published works and their utilization in original work. Peer evaluation and individual conferences with the instructor are employed.

ENGL 110 - Business Communications  
Prerequisites: CAPP 125 and ENGL 070 with a grade of C or higher or equivalent placement scores. In-depth study of effective communication techniques and demeanor as applied in business situations. Topics may include the communication process, various business letters, oral presentations, and international communication.
ENGL 112 - Technical Writing  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Explores the theory and practice of workplace writing, emphasizing both practical and individual and collaborative decision making. Includes practice in writing instructions, proposals and reports.

ENGL 130 - Scriptwriting  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Course explores the fundamental process of writing short scripts for film, theatre and television. Students will learn to develop plot, style, characters, dialogue, setting, mood, and formatting as they draft and revise 10 to 15-minute scripts for reading in class and potential production. Course includes lecture, group work and presentations.

ENGL 180 - Problems in Writing  
Prerequisites: ENGL 101 with a grade of C or higher and consent of instructor. Independent study of a special problem in the area of research-based writing or creative writing under the supervision of an instructor in the department.

FRENCH

FREN 101 - Elementary French I  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Begins the four basic skills of language communication: listening, speaking, reading, and writing. Includes an introduction to the French culture.

FREN 102 - Elementary French II  
Prerequisite: FREN 101 with a grade of C or higher. Continuation of FREN 101 for further development of the four basic skills of language communication: listening, speaking, reading, and writing. Continues study of French culture.

FREN 201 - Intermediate French I  
Prerequisite: FREN 102 with a grade of C or higher. Course continues the study of French language and culture with a focus on communication and proficiency.

FREN 202 - Intermediate French II  
Prerequisite: FREN 201 with a grade of C or higher. Course continues the study of French language and culture with a focus on communication and proficiency.

FREN 210 - Special Topics in French  
Prerequisites: FREN 101, FREN 102, FREN 201, and FREN 202 with grades of C or higher. Independent study under the supervision of a French instructor.

GEOGRAPHY

GEOG 101 - World Geography  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. This introductory geography course surveys the processes of the earth’s formation, climates and biomes, human culture and institutions, global environmental issues, and interactions within the global village. Designed for prospective elementary and social studies teachers, as well as general education students.

HEALTH

HLTH 101 - Personal Health and Fitness  
 Presents a basic knowledge of physical fitness and personal fitness; the human body, personal hygiene, food and nutrition, diet and weight control, and mental health; alcohol, narcotics and drug abuse education; and protection against communicable diseases and other health hazards. Course will fulfill the wellness requirement.

HLTH 102 - First Aid  
 Prepares the student to make appropriate decisions regarding first aid care in minor or life-threatening situations. Course focuses on basic first aid techniques and when to call emergency medical services. cardiopulmonary resuscitation (CPR) and relief of airway obstruction of the adult, child and infant, as well as use of the automated external defibrillator (AED) for the adult and child, are included in the course. American Red Cross certification cards are given for First Aid and CPR upon completion of the course.

HEALTH INFORMATION TECHNOLOGY

HIT 100 - Introduction to Health Information Technology  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to the health care field and health information management. The health record is analyzed for content and use as it relates to documentation requirements, health care personnel responsibility, security, and organizational structure. Addresses the current and future direction of health information management.

HIT 105 - Health Care Technologies  
Prerequisite: CAPP 125 with a grade of C or higher. Covers the health record and information systems, indexes, registries, and computer-based patient record.

HIT 110 - Pharmacology and Diagnostic Procedures  
Prerequisites: HEOC 120 and HEOC 122 with grades of C or higher. A basic knowledge and understanding of clinical and diagnostic laboratory tests as performed in the acute care setting and the basics of pharmacology. Students will identify the classifications, uses and actions of the most commonly prescribed drugs for affecting each body system.
HIT 115 - Health Care and the Law 3
Prerequisite: HIT 100 with a grade of C or higher. Course covers medical records as legal documents focusing on procedures involved in court disclosure of medical records; laws pertaining to release of information from medical records; and medical record requirements for accrediting, approving, licensing, and certifying agencies. Covers laws and regulations governing preparation and use of medical records, responsibilities of physician, risk of malpractice, and physician's role in the hospital.

HIT 200 - Health Care Statistics and Quality Management 3
Prerequisites: CAPP 125 and MATH 110 or MATH 112 with grades of C or higher or equivalent placement score. Course covers the practical applications of health information management concepts as they apply to health care data collection, calculating inpatient hospital statistics, analyzing statistical outcomes, comparing and benchmarking facility data to national statistics, and other providers of service. Students will also demonstrate management skills in presenting data making recommendations based on statistical outcomes.

HIT 204 - Coding I 3
Prerequisites: BIO 103, HEOC 120, HEOC 122, and HIT 224 with grades of C or higher. Overview of the (International Classification of Diseases, 10th Division, Clinical Modification) ICD-10-CM code book with basic coding assignment/ guidelines instructions and the basic reimbursement methodologies, specifically diagnosis related groups (DRGs). Initial preparation for CCA Exam - AHIMA.

HIT 206 - Coding II 3
Prerequisite: HIT 204 with a grade of C or higher. Continuation of HIT 204 with the overview of the (International Classification of Diseases, 10th Division, Procedure Coding System) ICD-10-PCS code book with basic coding assignment/ guidelines instructions and the basic reimbursement methodologies, specifically diagnosis related groups (DRGs). Intense simulation of actual coding practices on all major body systems. Continuation of preparation for CCA Exam - AHIMA.

HIT 208 - Coding III 3
Prerequisites: HIT 206 and HIT 224 with grades of C or higher. 12 week course - Continuation of HIT 204 and HIT 206 corresponding with the overview of the CPT code book and the outpatient coding guidelines, reimbursement with major emphasis on current procedural terminology (CPT) coding. The focus is on all health information management domains. Student will study for and complete the CCA exam through AHIMA; upon passing, student will be eligible for CCA credential.

HIT 215 - Principles of Health Care Reimbursement 3
Prerequisites: ENGL 070 and HIT 206 with grades of C or higher or equivalent placement scores. Course provides an understanding of the various payment systems and how reimbursement affects providers, payers, consumers, and policy makers. Explanation will be given of the managed care, commercial insurance, and government-sponsored payment systems. The student will compare and contrast systems and how to use related resources for accurate reimbursement.

HIT 220 - Health Information Management 3
Prerequisites: BSMT 108 and HIT 100 with grades of C or higher. Course covers concepts of management as it applies to the health information management profession. Course will introduce management policies as they relate to the delivery of health care; accounting methodologies, policies and practices that support an ethical and culturally diverse workforce; managing and leading during organizational change; and process improvement.

HIT 224 - Human Disease and Conditions 3
Prerequisites: BIO 103 and HEOC 120 with grades of C or higher. Introduction to the nature of disease and its effects on body systems. Course deals with the disease processes of the more common clinical disorders. Signs, symptoms, diagnosis, treatment, and preventions are covered. Students will identify most commonly used laboratory and diagnostic tests, as well as prescribed drugs used in the treatment of diseases.

HIT 275 - Professional Practice Experience 3
Prerequisite: Consent of program coordinator. Field-based professional practice experience in a hospital, physician’s office, clinic, or other health care setting with directed projects common to a health information technologist on the job. Students will be assigned specific professional practice projects to be completed at the site and will participate in management and administrative activities. This is an unpaid work experience requiring 80 to 120 hours of participation.

HEALTH OCCUPATIONS

HEOC 120 - Medical Terminology I 3
Acquire a medical terminology vocabulary related to body systems necessary to communicate information in a medical office or hospital environment. Focuses on the principles of medical word formation, including the basic rules of building medical words, identifying suffixes, prefixes, and combining forms related to the structure and function of the associated systems of the body (musculoskeletal, cardiovascular, respiratory, gastrointestinal, urinary, and male reproductive). Concentration is on pronunciation, spelling and definitions of medical terms.

HEOC 122 - Medical Terminology II 3
Prerequisite: HEOC 120 with a grade of C or higher. Continuation of HEOC 120. Focuses on identifying suffixes, prefixes, and combining forms related to the structure and function of the associated systems of the body ( integumentary, nervous, sensory, endocrine, blood, lymphatic, and female reproductive).
HEOC 135 - Allied Health Career Development  .5
Focuses on developing health care career potential. The job search process is presented step-by-step. Guest speakers, group activities and mock interviews will be utilized, and resumes will be constructed. Internet sites to assist in resume writing and job searches will be explored.

HEOC 140 - Technology and Health Care  3
Provides an introduction to information technology, including hardware, software, telecommunications, medical informatics, administrative applications, and telemedicine in different care delivery areas. Addresses computer-assisted instruction, online health information, and security and privacy issues. Examines using technology to improve the quality of health care as it is delivered to the client, utilized by the provider and needed to meet the mission of an institution.

HEOC 146 - Phlebotomy  6
Prerequisite: Consent of program coordinator. Course is designed to provide students with knowledge, skills and techniques necessary to perform as a phlebotomist in the clinical setting. Students will learn various procedures and laboratory techniques in handling human blood. Students must satisfactorily perform in a laboratory setting as well as pass written tests.

HEOC 152 - Certified Nurse Assistant  6
Prerequisite: Consent of program coordinator. Corequisite: HEOC 155. Certified Nurse Assistant training prepares individuals for employment in a long-term care facility while teaching skills in resident care under the direct supervision of a licensed nurse. CNA and CNA Clinical will meet state requirements for CNA training. Additional state mandated requirements may be required to be employed as a CNA in a long-term care facility. Note: If a student passes HEOC 152 but does not pass HEOC 155, the student will have one additional semester to retake HEOC 155 from a regularly scheduled State Fair Community College course. Any retake of HEOC 155 after one semester will require that HEOC 152 be retaken.

HEOC 155 - Certified Nurse Assistant Clinical  2
Prerequisite: Consent of program coordinator. Corequisite: HEOC 152. Clinical provides 100 hours of on-the-job training with state-approved clinical supervisors in a long-term care facility. At the conclusion of the clinical sessions, a two-part, state-approved final examination must be passed. The two-part final examination includes a written or oral assessment and a practicum examination. This is a pass/fail course.

HEOC 158 - Certified Medication Technician  4
Prerequisites: Consent of program coordinator and an active listing on the Missouri CNA Registry. Corequisite: HEOC 160. This Certified Medication Technician training program prepares individuals for employment in a long-term care facility. Skills are taught in administration of nonparenteral medications to assist licensed practical nurses (LPNs) or registered nurses (RNs) in medication therapy. Training consists of at least 60 hours of classroom instruction. Upon successful completion of both this course and HEOC 160, the student will be eligible to take the final exam to become a certified medication technician through the Missouri Department of Health and Senior Services.

HEOC 160 - Certified Medication Technician Clinical  1
Prerequisite: Consent of program coordinator. Corequisite: HEOC 158. Training includes at least 15 hours of clinical practice under direct supervision. The student will participate in administering nonparenteral medications in a long-term care facility. This is a pass/fail course.

HEOC 162 - Home Health Aide  2
Prerequisite: Consent of program coordinator. The Home Health Aide training program provides the student with basic care skills for families with unique health needs in the patient’s home. The student will learn the goals of maintaining basic human needs, home management, nutrition, meal planning, adapting basic care activities, observing client’s medication, and special needs, as well as special procedures in emergency care.

HEOC 164 - Restorative Nurse Assistant  2
Prerequisite: Consent of program coordinator. Corequisite: HEOC 166. The Restorative Nurse Assistant training program is designed to train aides to fulfill requirements for efficient rehabilitative care of residents in nursing homes. The student will have the opportunity to learn the rehabilitative philosophy, work with departmental organizations, understand the role of the physical therapist, and learn the proper techniques of body mechanics, transfers and ambulation.

HEOC 166 - Restorative Nurse Assistant Clinical  1
Prerequisite: Consent of program coordinator. Corequisite: HEOC 164. The training includes clinical practice under direct supervision. The student will participate in working with the physical therapist in a long-term care facility. This is a pass/fail course.

HEOC 168 - Social Services Director/Activity Director  5
The Social Services Director/Activity Director training program provides an introduction to the long-term care setting and the various methods of providing recreation and social services in this setting. It includes information that provides understanding of the regulatory process and the quality assurance system in this setting. It will include study of human aging, an overview of social work practice, an introduction to recreation service provisions, and federal and state regulations. At the end of the training, the successful student will be qualified to hold a position as an activity director or social services director in a long-term care facility.
HEOC 170 - Level I Medication Aide  
Prerequisite: Consent of program coordinator. The Level I Medication Aide training program prepares individuals for employment as a level I medication aide in residential care facilities and assisted living facilities. The program is designed to teach skills in medication administration of nonparenteral medications in order to qualify students to perform this procedure only in residential care facilities and assisted living facilities in Missouri. The curriculum content is a minimum of 16 hours, which includes procedures and instruction in basic human needs and relationships, drug classifications and their implications; assessing drug reactions; techniques of drug administration; medication storage and control; drug reference resources; and infection control.

HEOC 172 - Insulin Administration  
Prerequisite: Consent of program coordinator and current Missouri Certified Medical Technician (CMT) or Level I Medication Aide (LIMA) Certificate. The Insulin Administration training program prepares medication technicians in a skilled or intermediate care facility or medication aides in a residential care facility or assisted living facility to administer insulin. The program is designed to present information on diabetes as it relates to symptoms and implications of proper or improper treatment and to teach skills in insulin administration in order to qualify students to perform this procedure in long-term care facilities in Missouri. The curriculum content includes procedures and instruction in diabetes and its treatment and complications; types of insulin; techniques of insulin administration; and methods of monitoring blood sugar levels.

HEOC 180 - Problems in Health Occupations  
Prerequisite: Consent of instructor. Independent study of a special problem in health care under the supervision of a Health Sciences instructor.

HIST 108 - World Civilization Before 1500  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Survey of the political, social, military, cultural, and religious history of Europe, Asia, and Africa from early human societies to 1500.

HIST 109 - World Civilization After 1500  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Survey of the political, social, military, cultural, economic, and ideological history of Europe, Asia, the Americas, and Africa from 1500 to the end of the Cold War.

HIST 180 - Problems in History  
Prerequisites: ENGL 070 with a grade of C or higher or equivalent placement scores and consent of instructor. Independent study of a special problem in history under the supervision of the lead history instructor.

INDUSTRIAL TECHNOLOGY

INDT 140 - Mechanical and Fluid Power Principles  
Course includes industrial technology principles and applications involving tools, hardware, mechanical advantage, bearings, belt and gear drives, lubrication, alignment, vibration, as well as fluid power systems, pressure, flow and directional controls, actuators, conduits, pumps, fluid conditioning, and a minor emphasis on maintenance/troubleshooting.

INDT 142 - Principles of Electricity  
Course includes industrial technology principles and applications involving electrical topics of direct current, alternating current and electrical quantities and values. Topics also include Ohm’s Law, electric generation, energy conversion, magnetism, electromagnetism, as well as series, parallel and combination circuits, inductance, capacitance, reactance, power factor, the application of electrical power in industry, single and poly-phase transformers, and wye and delta systems.

INDT 144 - Machine Controls  
Course includes industrial technology principles and applications involving the devices and components of industrial automation; relays, sensors and switches; fluid power components, motor starters and drives; combination of technologies in the systems of manufacturing and industrial processes; and an introduction to line diagrams of control circuits and troubleshooting.

INDT 146 - PLC Automation  
Course includes industrial technology principles and applications involving Rockwell Automation/Allen-Bradley hardware and software. Configuration of hardware and communications, number systems, logic circuits, and basic programming and functions such as one shot, latch, timers, counters, and data manipulation will be covered. Emphasis is on ability to visually assess the status of inputs and outputs, verify electrical signals and comprehend basic PLC operations and functions.
INDUSTRIAL ELECTRICAL MAINTENANCE

IEM 102 - Electric Fundamentals 3
Introduction to electrical theory. Topics include direct current, alternating current, electrical quantities and values, Ohm’s Law, electric generation, energy conversion, magnetism, electromagnetism, series, parallel, and combination circuits.

IEM 104 - Electrical Power 3
Prerequisite: IEM 102 with a grade of C or higher. Continuation of electrical studies in alternating current (AC), inductance, capacitance, reactance, power factor, and the application of electrical power in industry, single and polyphase transformers, and wye and delta systems.

IEM 106 - Industrial Mechanics 3
Course includes principles and applications of industrial mechanics, including tools, hardware, installation and maintenance of bearings, gear systems, belt drives, mechanical drives, principles of lubrication, vibration, and alignment.

IEM 107 - Introduction to Robotics 3
Prerequisite: Consent of program coordinator. Course is designed for someone who has no experience with robotics and has little to no experience with electronics, electricity and motors. Course breaks down the physical components that make up a robot, terminology and mathematical equations for basic design needs. The course will cover safety, understanding a robot’s operational umbrella, tooling designs and applications, end of arm tooling (EOAT), power transmission systems, and basics of programming, troubleshooting and maintenance. Course will provide hands-on exposure using an industrial robot(s).

IEM 108 - Fluid Power Technology 3
Course covers principles and applications of fluid power technology in industrial systems including operating, troubleshooting and maintaining hydraulic and pneumatic pressure; flow, directional control, and electrical devices; conduits, pumps, compressors, actuators, and ancillary devices; and conditioning and filtration of fluids. Critical thinking and analytical skills are emphasized.

IEM 110 - Digital Principles and Applications 3
Prerequisite: IEM 102 with grade of C or higher. Study of decimal, binary and hexadecimal numbering systems; Boolean algebra, basic logic and truth tables; digital/discrete logic circuits; flip-flops, timers counters; and registers.

IEM 112 - Control Circuit Troubleshooting 3
Prerequisite: IEM 104 with a grade of C or higher. Introduction to the devices and components of industrial automation, sensors, switches, fluid power components, and combination of technologies in manufacturing systems and industrial processes. Primary emphasis on interpreting line diagrams and troubleshooting control circuits.

IEM 114 - Motor Controls 3
Prerequisite: IEM 112 with a grade of C or higher. Course is designed to teach students how to construct, troubleshoot and isolate malfunctions in various types of control circuits and motor starters and understand application and installation of control devices and basic principles, operation, components, and application of AC drives.

IEM 116 - Solid State Devices 3
Prerequisite: IEM 104 with a grade of C or higher. Comprehensive overview of solid state devices and their basic principles and applications; the composition and operating characteristics of diodes, transistors, SCRs, DIACs, TRIACs, and solid state transducers; and the application of solid state devices in rectification of alternating current (AC) into direct current (DC), power supply filters, voltage regulation, industrial relays, sensors, and alarm systems.

IEM 118 - Analog/Digital 3
Prerequisite: IEM 116. Covers the basic principles involving the use of analog integrated operational amplifiers in signal generation applications; integrated A/D, D/A converters and their applications; shift registers and their applications; and control and timing circuits and their applications.

IEM 122 - Introduction to PLCs 3
Prerequisite: IEM 114 with a grade of C or higher. Introduction to hardware and software of programmable logic controllers (PLCs). Course is designed to instruct students in the operating system of PLCs, configuration of hardware and communications, number systems, logic circuits, and basic programming. The ability to perform basic computer operations is necessary.

IEM 124 - Intermediate PLCs 3
Prerequisite: IEM 122 with a grade of C or higher. Study of the interface between machine and controller, advanced programming functions and troubleshooting. Emphasis is on developing programs and interfacing with industrial type devices.

IEM 126 - Industrial Safety 3
Comprehensive study of requirements and programs of 29 Code of Federal Regulations (CFR) 1910. Application of safe work practices to industrial maintenance and manufacturing, including machine guarding, confined space, lockout/tagout, hazardous communication, electrical and fire safety, personal protective equipment, and more. Additional topics selected based on student interest and industry emphasis.

IEM 128 - Maintenance Management 3
Study of contemporary maintenance management practices, statistical applications, total productive maintenance, reliability-based procedures, predictive (PDM) and preventive (PM) maintenance, coordinate measuring machine (CMM) systems, nondestructive testing, and project management.
IEM 130 - Principles of Refrigeration  
Study of the principles of refrigeration, refrigerants, components, types of systems, operation, electrical controls, troubleshooting, servicing, and maintenance. Critical thinking and analytical skills are emphasized.

IEM 132 - Advanced PLCs  
Prerequisite: IEM 124 with a grade of C or higher. Study of the hardware that is programmed with RSLogix 5000. Course is designed for students who already understand RSLogix 500 and are ready to advance to Tag-based programming.

IEM 134 - PLC Networks  
Prerequisite: IEM 132 with a grade of C or higher. Course will cover the installation, operation, inspection, and maintenance of industrial communication networks using serial RS232, Ethernet and data bus. Examines various interface devices used in communication and integration of these devices with computers, PLCs and web-enabled technology.

IEM 136 - General NEC Requirements  
Prerequisite: IEM 104 with a grade of C or higher. Students learn to understand and apply the code to general industrial applications, wiring and protection, wiring methods and materials, and general equipment. Based on the general requirements of the National Electrical Code (NEC).

IEM 138 - Power Distribution and Switchgear  
Prerequisite: IEM 136. Course will cover the installation, operation, inspection, and maintenance of industrial electrical power systems and motor control centers; voltage, current and instrument transformers; feeder circuits and busways; switches and circuit breakers; protective devices; regulating devices; and neutral and grounding systems using the National Electric Code (NEC).

IEM 140 - Transformers and Motors  
Prerequisite: IEM 104 with a grade of C or higher. Course examines the principles, construction, types, and applications of transformers and motors, including DC generators and motors, alternators and AC motors. Transformers and AC motors applications include single-phase and poly-phase, wye and delta.

IEM 146 - Quality Management and Control  
Study of quality management principles and quality control procedures. Students will study quality management from a historical perspective as well as current quality management techniques. Production quality control methods such as sampling, inspecting and testing used to insure accuracy and high standards in production quality will be studied.

IEM 148 - Inventory and Production Control  
Study of production planning, scheduling, follow-up, and control of raw material, parts and finished goods inventories.

IEM 150 - Applications in IEM Problem Solving  
Designed to allow a company to utilize an instructor to facilitate an actual problem or improvement project with a group of students or company employees and for individualized special instruction by the instructor.

IEM 175 - IEM Internship  
Prerequisites: Completion of 30 technical credit hours and consent of program coordinator. Application of work skills in a supervised work environment. Companies that sponsor internships provide the supervision. The college provides general guidance and works with the sponsoring company in developing an outline of the work experiences unique to the site. Course is designed to provide the student an opportunity to demonstrate work skills, work ethics and the ability to work with others. In addition to completing the training plan, the student must submit four to eight written technical reports.

IEM 200 - Technology Integration  
Prerequisite: IEM 124 with a grade of C or higher. Course will evaluate a student’s skills and ability to design, develop and troubleshoot a simulated manufacturing production system. Students will build a working production system in a simulated workplace environment stressing teamwork and troubleshooting skills. The goal is to prepare a student for entry into the workforce as an IEM technician.

LITERATURE

LIT 101 - Introduction to Literature  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Study of fiction, poetry and drama. Special attention is given to literary terminology and critical analysis. Recommended but not required as a preparation for other courses in literature.

LIT 107 - American Literature  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Study of major American authors and works from the Colonial Period to the present, emphasizing development of concepts that have shaped American life and literature.

LIT 109 - British Literature  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Study of major English authors, genres and works from Beowulf to the present, emphasizing the development of concepts that have shaped English life and literature.

LIT 112 - World Literature  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Students will examine selected works of various Asian, African and European literature in translation from the ancient world to the 20th century.

LIT 114 - Topics in Literature  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Study of a special problem in literature under the supervision of an instructor in the department.
MACH 101 - Introduction to Machining 4
Introduction to measuring tools used for work in machining or inspection processes. Introduces the proper setup and use of drilling machines, band saws and lathes. Theories will include use of tools and tool holders, cutting tool applications and facing and turning on the lathe. Areas of study include safety, blueprint interpretation, hand tools, layout, and various gages and precision measuring instruments used to complete and inspect a machined part. (1 lecture, 3 lab)

MACH 102 - Lathe and Milling Machine Operations 4
Prerequisite: MACH 101 with a grade of C or higher. Continuation in the application of lathe operations including inner and outer (ID/OD) diameter turning, threading, boring, and tapering. Introduces the proper use and setup of the vertical milling machine. Applications include squaring the machine and indicating angle pieces. Areas of study include safety, blueprint interpretation and the selection of cutters, feeds and speeds. (1 lecture, 3 lab)

MACH 103 - Milling and Grinding Machine Applications 4
Prerequisite: MACH 102 with a grade of C or higher. Continuation of milling machine operations including dividing heads, precise movement of machines, turntable operations, and keyways. Introduces surface grinders, including wheel selections, truing and dressing, work holders, and solutions in surface grinding. Areas of study include safety, blueprint interpretation and proper setup and use of milling and grinding attachments. (1 lecture, 3 lab)

MACH 104 - Advanced Machining 4
Prerequisite: MACH 103 with a grade of C or higher. Introduces the use of the sine bar and sine plates on milling machines and surface grinders. Course presents advanced applications of lathes, mills and surface grinders. Advanced projects will be timed. Areas of study include estimation of project time and bidding process, quality control and International Standards Organization (ISO). (1 lecture, 3 lab)

MACH 106 - CNC Machining 3
Provides fundamental technical information and some practical experience necessary for programming, editing and operating computer numerically controlled (CNC) machine tools. Applications will include CNC mill and CNC lathe using manual data input (MDI) techniques. (1 lecture, 2 lab)

MACH 109 - Advanced CNC Machining 3
Prerequisite: MACH 106 with a grade of C or higher. Provides technical information and considerable practical experience in preparation, setup and operation of CNC machining center and CNC lathe. Proofing, editing and post processing of programs will be emphasized using computer aided manufacturing (CAM) software. Tooling and tool path generation methods will be explained along with fixed and canned cycles. (1 lecture, 2 lab)

MACH 112 - Machine Tool Equipment Repair 4
Prerequisite: MACH 106 with a grade of C or higher. Designed to teach correct procedures for repair and maintenance of machine tools. Study includes safety, repair and replacement of worn parts and diagnosis and repair of hydraulics and pneumatics and electrical components. (1 lecture, 3 lab)

MACH 113 - Print Reading for Machinists 3
Study of symbols, industry standards, measurement systems, terminology, prints, and diagrams associated with work performed by professional welders and machinists, including the interpretation of tool and die, machine prints, welding symbols and prints, and related technologies.

MACH 114 - Quality and Precision Measurement 3
Designed around the process of plotting production results to determine if both product and process meet company standards. Encourages prevention, as opposed to detection of defects, to help eliminate costly repairs and scrap.

MACH 115 - Heat Treating and Metallurgy 3
Knowledge of heat treatable steel and alloys will be presented in this course. Study of the operation of heat treating and drawing furnaces, quenching mediums, color spectrum, and hardness testing is included. Students will become familiar with the process involved in making iron and steel, noncarbon diagrams and identification of ferrous and nonferrous metals.

MACH 117 - Machine Tool Internship 1 to 8
Prerequisite: Consent of program coordinator. Provides opportunity to work with a skilled machinist to better understand skills and knowledge needed and to determine how the student likes actual machine tool work.

MACH 118 - Problems in Machine Tool 1 to 3
Prerequisite: Consent of program coordinator. Independent study of a special problem in machine tool technology under the supervision of a machine tool instructor.

MARINE TECHNOLOGY

MRN 101 - Marine Systems Rigging I 6
Course provides a foundation of information and skills for a marine career. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 105 - Marine Ignition Systems 3
Outboard, inboard, inboard/outboard, and personal watercraft ignition systems are explored in this course. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 107 - Marine Starter and Charging Systems 2
Course follows the progression of starter and charging systems in the outboard, inboard/outboard and the personal watercraft. Course is offered through an agreement with the Lake Career and Technical Center.
MRN 109 - Marine Cooling Systems 2  
Course covers the systems used in the cooling process. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 111 - Marine Lubrication Systems 2  
Course begins with the manual mixing of oil and fuel to provide lubrication and progresses into the different automatic oiling systems. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 113 - Marine Engine Component and Precision Measuring 3  
Course provides the student with the skills to determine if an engine component is reusable. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 115 - Marine Shop Procedures and Business Operations 2  
Properly completing a repair order, providing proper communication with the customer, keeping track of the unit(s) brought in for service, recording the diagnosis and repair process, and the date promised for repair completion. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 117 - Marine Engine Systems Analysis 2  
Course covers proper break-in procedure. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 119 - Marine Systems Preventive Maintenance 4  
Course covers maintenance items the student must be responsible to complete. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 121 - Marine Power Transfer Systems 4  
Transom plate and adapter systems, couplers, upper gear case, driveshaft housing, jet pumps, gear housings, strut bearings, and surface-piercing drive systems are part of the course. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 123 - Marine Systems Troubleshooting 3  
Course covers correct troubleshooting techniques. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 125 - Marine Fuel Systems 4  
Course will cover the complexities of marine fuel systems and automatic oiling systems. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 127 - Marine Instrumentation Systems 2  
Course promotes understanding the different manufacturer systems and sending units. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 129 - Marine Power Trim/Tilt Systems 2  
Course will enable students to understand how hydraulic pumps can manage the pressure in a hydraulic system. Course is offered through an agreement with the Lake Career and Technical Center.

MRN 175 - Marine Technology Internship 4  
The internship consists of approximately 160 clock hours at an approved marine facility. Course is offered through an agreement with the Lake Career and Technical Center.

MATH 061 - Pre-Algebra 3  
Prerequisite: Equivalent placement score. Course is designed for review of basic math skills to prepare for MATH 101, MATH 107, MATH 110, or MATH 111. Students will achieve proficiency in the fundamental concepts including the manual process used for adding, subtracting, multiplying, and dividing with whole numbers, integers, fractions, decimals, percentages, exponents, least common multiple (LCM) and greatest common factor (GCF), ratio/proportions, unit analysis, and an introduction to graphing, including evaluation of algebraic expressions. Successful completion requires a 70 percent on the comprehensive departmental final and a 70 percent in the course. Does not apply toward a degree or certificate.

MATH 101 - Business Math 3  
Prerequisite: MATH 061 with a grade of C or higher or equivalent placement score. Practical approach to understanding the application of mathematics within the business environment. Emphasis is placed on developing mathematical solutions to problems in the areas of marketing, accounting, finance, and banking.

MATH 107 - Technical Math I 3  
Prerequisite: MATH 061 with a grade of C or higher or equivalent placement score. Course is designed to stress applications to practical problems as they apply to trade. Topics include whole numbers, number systems, dimensions, fractions, powers, roots, exponents, scientific notation, basic algebra (linear and nonlinear equations), rate, base and percentage, precision, accuracy, tolerance, simple equations, complex equations, and trigonometric functions especially as they relate to the right triangle and the six trigonometric functions of sine, cosine, tangent, cotangent, secant, and cosecant.

MATH 108 - Technical Math II 3  
Prerequisite: MATH 107 with a grade of C or higher or equivalent placement score. Designed to stress applications to practical problems as they apply to trade. Topics include plane geometry, solid geometry, angular measure, probability, statistics, Pythagorean Theorem, and fundamentals of trigonometry.

MATH 110 - Intermediate Algebra with Review 5  
Prerequisite: MATH 061 with a grade of C or higher or equivalent placement score. Course covers real and complex number systems, linear and absolute value equations and inequalities, linear graphs, systems of equations, rational expressions and equations, rules of exponents, rational exponents, radicals and their equations, operations on and factoring of polynomials, and solving quadratic equations using various techniques.
MATH 111 - Review of Essential Mathematics  
Prerequisites: MATH 061 or equivalent placement score. Corequisite: MATH 113, MATH 117 or MATH 119. This corequisite course is designed to review essential mathematical concepts and techniques while providing structured support through practice and review. This course is for students who place just below MATH 113, MATH 117 or MATH 119. Topics include using graphical representations of data, rational and irrational numbers, 1- and 2-variable equations, inequalities, rational and exponential expressions, functions, and mathematical formulas. In order to provide customized support for each student, additional topics may be added.

MATH 112 - Intermediate Algebra  
Prerequisite: Equivalent placement score. Topics include equations and inequalities involving absolute value, rational expressions and equations, graphs of inequalities in the plane, systems of equations in two unknowns, rational exponents and radicals, radical equations, imaginary and complex numbers, and quadratic equations.

MATH 113 - Mathematical Reasoning and Modeling  
Prerequisite: MATH 110. MATH 111 or MATH 112 with a grade of C or higher or equivalent placement score. Corequisite: MATH 111. Provides humanities students with a comprehensive overview of the skills required to navigate the mathematical demands of modern life and a deeper understanding of mathematical information. Students will develop critical thinking and problem-solving skills in order to draw conclusions, make decisions, and communicate effectively in mathematical situations that depend upon multiple factors.

MATH 114 - Precalculus Algebra  
Prerequisite: MATH 110 or MATH 112 with a grade of C or higher or equivalent placement score. This course prepares students for fields of study that require a high level of algebraic reasoning or calculus. Topics include the foundational principles of functions, the analysis of functions, algebraic reasoning, and matrices. Students will study the following functions: linear, quadratic, exponential, logarithmic, rational, piecewise, and absolute value.

MATH 117 - Contemporary Mathematics  
Prerequisite: MATH 110. MATH 111 or MATH 112 with a grade of C or higher or equivalent placement score. Corequisite: MATH 111. Designed for students in the field of elementary education, this course will cover mathematical concepts with historical perspectives from various branches of mathematics including an introduction to set theory, logic, number theory, statistics, probabilities, combinatorics, and geometry.

MATH 119 - Statistical Reasoning  
Prerequisite: MATH 110. MATH 111 or MATH 112 with a grade of C or higher or equivalent placement score. Corequisite: MATH 111. This is a first course in statistics for students, such as social science majors, whose college and career paths require knowledge of the fundamentals of the collection, analysis and interpretation of data. Topics include interpretation of univariate and bivariate data using graphical and numerical methods, probability, discrete and continuous probability distributions, linear regression, an understanding of good practice in study design, statistical inference, confidence intervals, and hypothesis testing. Data-collection methods, statistical thinking and techniques, simulation, and the use of technology will support decisions and conclusions.

MATH 120 - Precalculus Trigonometry  
Prerequisite: MATH 114 with a grade of C or higher or equivalent placement score. Corequisite: MATH 114. This course prepares students for the fields of science, technology, engineering, or mathematics as well as other fields that require a high level of algebraic reasoning or would require calculus. Topics include radius vector, right triangle and unit circle definitions of trigonometric functions, trig identities, graphs, inverse trig functions, trig equations, De Moivre’s Theorem, and conics.

MATH 125 - Calculus for Business  
Prerequisite: MATH 114 with a grade of C or higher or equivalent placement score. A brief treatment of elementary calculus with applications to business and economics. Topics include limits and continuity, derivatives and integrals of algebraic, exponential and logarithmic functions, compound interest, cost revenue and profit functions, and elasticity of demand.

MATH 127 - Business Statistics  
Prerequisites: CAPP 125 and MATH 114 with grades of C or higher or equivalent placement score. Emphasizes data analysis, data production and statistical inference. Topics include descriptive statistics, probability, normal distributions, sampling, the central limit theorem, confidence intervals, and hypothesis testing. Correlation and regression will be discussed time permitting.

MATH 130 - Calculus and Analytic Geometry I  
Prerequisites: MATH 114 and MATH 120 with grades of C or higher or equivalent placement score. Topics include limits, continuity, derivatives, integrals of algebraic and transcendental functions, and appropriate applications.

MATH 131 - Calculus and Analytic Geometry II  
Prerequisite: MATH 130 with a grade of C or higher. Topics include parametric and polar coordinates, methods of integration, series, conic sections, and application of these topics.

MATH 132 - Calculus and Analytic Geometry III  
Prerequisite: MATH 131 with a grade of C or higher. Topics include parametric equations of lines and curves in space; vectors and calculus of vector functions; multivariable, differential and integral calculus; introduction to vector analysis; and application of these topics.
MATH 134 - Differential Equations 3
Prerequisite: MATH 132 with a grade of C or higher. Course presents linear differential equations with application, series solutions and Laplace transforms.

MATH 180 - Problems in Math 1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in mathematics under the supervision of a mathematics instructor.

MEDICAL ASSISTANT

MEA 100 - Medical Assisting General Orientation .5
This course is part of the MEA program. Students abide by the admission requirements for the program. Introduction and review of the program curricular component that includes discovering the role of medical assistant, effective communication, professionalism, legal and ethical issues, interdisciplinary teamwork, and safety. Furthermore, students will achieve 100 percent of course designated MAERB core competencies for this course. Students must maintain a grade of C or higher to successfully pass the class.

MEA 104 - Medical Assisting Psychology of Human Relations 3
This course is part of the MEA program. Students abide by the admission requirements for the program. Topics covered will include abnormal behavior patterns, terminally ill patients, patient advocacy, developmental stages of life, gender, sexuality, self-identity, morals, information processing, and working with diverse populations. Furthermore, students will achieve 100 percent of designated MAERB core competencies for this course. Students must maintain a C or higher to successfully pass the class.

MEA 108 - Medical Assisting Administrative Procedures 3
This course is part of the MEA program. Students abide by the admission requirements for the program. Course includes records management, financial practices, insurance and coding, scheduling, office environment, and communication. Furthermore, students will achieve 100 percent of designated MAERB core competencies in the course. Students must maintain a B or higher to successfully pass the class.

MEA 112 - Medical Assisting Clinical Procedures 3
This course is part of the MEA program. Students abide by the admission requirements for the program. Course includes infection control, patient screening, general/physical examination, specialty examination, procedure/minor surgery, medication administration, office emergencies, patient education, alternative health care/community resources, communication strategies, and adaptations. Furthermore, students will achieve 100 percent of designated MAERB core competencies in the course. Students must maintain a B or higher to successfully pass the class.

MEA 116 - Medical Assisting Laboratory Procedures 3
This course is part of the MEA program. Students abide by the admission requirements for the program. Course includes quality control, Clinical Laboratory Improvement Amendments (CLIA)-waived tests, biohazards, specimens, patient instructions. Students will achieve 100 percent of designated MAERB core competencies in the course. Students must maintain a B or higher to successfully pass the class.

MEA 190 - Medical Assisting Capstone 6
Prerequisite: MEA 108, MEA 112 and MEA 116 with grades of B or higher and MEA 100 and MEA 104 with grades of C or higher. Students must have met the course progression and grade requirements. This course applies the concepts learned throughout the Medical Assistant program in the clinical setting. The student will complete a minimum of 160 hours in an ambulatory care outpatient setting applying the knowledge learned throughout the program. Students must maintain a B or higher to successfully pass the class.

MEDICAL LABORATORY TECHNICIAN

MLT 150 - Introduction to Lab Science Methods 2
Course orients the student to the concepts in the laboratory environment including safe specimen handling, testing procedures, reporting results, basic quality control, laboratory organization, and professionalism.

MLT 210 - Immunology 3
Course consists of the principles and theories of antigen and antibody reactions and the immune system as related to diagnostic serologic procedures.

MLT 220 - Clinical Chemistry and Urinalysis 5
Course introduces the student to methods of analysis of chemical components found in the human body, the testing methodologies for those constituents and the results as applied to normal and abnormal disease states.

MLT 250 - Hematology and Coagulation 5
Course studies the cellular structures in blood, normal and abnormal cell development, alterations present in disease and the mechanisms of coagulation.

MLT 260 - Phlebotomy 2
Course covers various procedures in performing venipuncture and other specialized collection techniques in addition to laws and regulations for safe phlebotomy practices.

MLT 270 - Immunohematology 5
Course consists of concepts, applications and discrepancies of blood group testing, screening and crossmatch procedures and identifying unexpected antibodies.
MLT 280 - Clinical Microbiology 4
Course consists of the role of pathogenic bacteria and other microorganisms that includes bacterial culturing, differentiation and identification of human normal flora and disease-causing microorganisms.

MLT 290 - Parasitology, Mycology and Virology 1
Course introduces the student to parasites, fungus and viruses and their role in human health and disease.

MLT 291 - Hematology and Coagulation Practicum 2
Supervised clinical practice coordinated by the consortium in the hematology lab of selected clinical affiliates.

MLT 292 - Clinical Chemistry Practicum 2
Supervised clinical practice coordinated by the consortium in the clinical chemistry lab of selected clinical affiliates.

MLT 293 - Clinical Microbiology Practicum 2
Supervised clinical practice coordinated by the consortium in the microbiology lab of selected clinical affiliates.

MLT 294 - Clinical Immunohematology Practicum 2
Supervised clinical practice coordinated by the consortium in the immunohematology lab of selected clinical affiliates.

MUSIC

MUS 100 - Fundamentals of Music 3
Prerequisite: MUS 100B or music theory placement test. Corequisites: MUS 100B and MUS 105. Introduction to musical elements of notation, scales, key signatures, rhythms, melodies, and harmonies, and their application within the context of music theory. Students must possess at least a basic understanding of music notation (names of notes, note values, etc.) when enrolling in this course as demonstrated by a grade of C or higher on the music theory placement exam given on the first day of class. Those students not earning a C or higher will be concurrently enrolled in MUS 100B for the semester in order to strengthen foundation skills and continue as a music major.

MUS 100B - Exploring Music Theory 2
For students interested in enhancing their musicianship, exploring how music works, preparing for more serious collegiate study of music theory, or strengthening their fundamental music theory skills.

MUS 101 - Music Appreciation 3
Overview providing knowledge of the basic elements of music, the important musical masterpieces of various eras and the significant composers in musical history. A portion of the course time is devoted to listening to recordings and viewing supporting video footage of selected composers and performers. Students enrolled in this course must be able to independently attend two live concerts at some point in the course.

MUS 102 - History of Rock Music 3
Analyses by decade of the many styles of modern music that have fallen under the descriptive term of rock and roll resulting in an understanding of rock music's importance as a cultural, generational and historical force in the 20th century. Focus will be given to key performing artists, groups and music trends in each decade from 1950 to the present. Lecture and discussion will also include the role that gender, race and socio-political events played in the music of the second half of the 20th century.

MUS 103 - Music History and Literature Before 1800 3
Survey of music history and literature from its beginnings through the Baroque era as well as the role of music in the historical fabric of each era. Instrumental and vocal/choral genres and major composers will be studied. A significant portion of course time will be devoted to listening to recordings of appropriate music, composers and performers.

MUS 104 - Music History and Literature Since 1800 3
Survey of music history and literature from the Classical era to the present as well as the role of music in the historical fabric of each era. Instrumental and vocal/choral genres and major composers will be covered. A significant portion of course time will be devoted to listening to recordings of appropriate music, composers and performers.

MUS 105 - Fundamentals of Aural Training 1
Corequisite: MUS 100. Introduction to musical elements of notation, scales, key signatures, rhythms, melodies, and harmonies, and their application within the context of music theory. Students must possess at least a basic understanding of music notation (names of notes, note values, etc.) when enrolling in this course as demonstrated by a grade of C or higher on the music theory placement exam given on the first day of class. Those students not earning a C or higher will be concurrently enrolled in MUS 100B for the semester in order to strengthen foundation skills and continue as a music major.

MUS 106 - Music Theory I 3
Prerequisite: MUS 100. Corequisite: MUS 109. Continuation of MUS 100, developing theoretical competency in music notation, rhythm and meter, scales, intervals, triads, and melodic and harmonic analysis.

MUS 107 - Music Theory II 3
Prerequisite: MUS 106. Corequisite: MUS 110. Continuation of MUS 106 resulting in the application of more advanced theory concepts including the use of primary and secondary triads and seventh chords, the introduction of altered chords, modulations, and the use of cadential figures.

MUS 108 - Music Theory III 3
Prerequisite: MUS 107. Corequisite: MUS 111. Continuation of MUS 107 that will introduce advanced theory topics such as the use of modality and counterpoint in music as well as late 19th century harmonic functions and early 20th century compositional techniques. This is the terminal theory course for all music majors.
MUS 109 - Aural Training I
Prerequisite: MUS 105. Corequisite: MUS 106. Provides practical application of the skills being learned in MUS 106 through sight singing, solfege and rhythmic, melodic, and harmonic dictation. Enhances and supports confidence in music composition and performance through the aural process.

MUS 110 - Aural Training II
Prerequisite: MUS 109. Corequisite: MUS 107. Provides practical application of the skills learned in MUS 107 through more advanced sight singing, solfege and rhythmic, melodic, and harmonic dictation experiences. Enhances and supports confidence in writing and performing music through the aural process.

MUS 111 - Aural Training III
Prerequisite: MUS 110. Corequisite: MUS 108. Provides practical application of the skills learned in MUS 108 through advanced sight singing, solfege and rhythmic, melodic, and harmonic dictation experiences. Enhances and supports confidence in writing and performing music through the aural process. This is the terminal aural training course for all music majors.

MUS 119 - Jazz Band I
Prerequisite: Consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Instruction will focus on skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 120 - Jazz Band II
Prerequisites: MUS 119 and consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Second enrollment in Jazz Band will focus on advancing those skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 121 - Jazz Band III
Prerequisites: MUS 120 and consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Third enrollment in Jazz Band will focus on advancing those skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 122 - Jazz Band IV
Prerequisites: MUS 121 and consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Fourth enrollment in Jazz Band will focus on advancing those skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 123 - Jazz Band V
Prerequisites: MUS 122 and consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Fifth enrollment in Jazz Band will focus on advancing those skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 124 - Jazz Band VI
Prerequisites: MUS 123 and consent of instructor. A select ensemble that performs band literature representing the various styles and genres of traditional and nontraditional jazz. Sixth enrollment in Jazz Band will focus on advancing those skills required for successful performance (tone, articulation, breathing, balance, rhythm, etc.).

MUS 136 - Applied Instrumental Lessons I
Prerequisite: MUS 136. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.

MUS 137 - Applied Instrumental Lessons II
Prerequisite: MUS 136. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.

MUS 138 - Applied Instrumental Lessons III
Prerequisite: MUS 137. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.

MUS 139 - Applied Instrumental Lessons IV
Prerequisite: MUS 138. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.

MUS 139B - Applied Instrumental Lessons V
Prerequisite: MUS 139. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.

MUS 139C - Applied Instrumental Lessons VI
Prerequisite: MUS 139B. Performance-oriented study of the technique and literature associated with a specific musical instrument through weekly private lessons and student independent study. Performance on one recital and final jury required.
MUS 140 - Guitar Class I
Practical study of the guitar designed for beginning students with less than one year of experience.

MUS 141 - Guitar Class II
Prerequisite: MUS 140 or approval of instructor. Continuation of those skills learned in MUS 140 leading to more advanced guitar performance skills. Designed to allow the student to continue studying guitar beyond MUS 140.

MUS 145 - Beginning Piano Class I
Study of piano performance skills, especially for students with little or no previous training. Covers rudiments of music, hand positions, and performing hands separately and together; intervals, triads and scales are also covered. Required for music majors.

MUS 146 - Beginning Piano Class II
Prerequisite: MUS 145. Continuation of the study of piano performance skills learned in MUS 145. Continued work performing hands separately and together, intervals, triads, simple harmony, and scales are covered. Required for music majors.

MUS 147 - Intermediate Piano Class I
Prerequisite: MUS 146. Continuation of the study of piano performance skills learned in MUS 146 with emphasis on specific skills necessary to pass the piano proficiency examination. Required for music majors.

MUS 148 - Intermediate Piano Class II
Prerequisite: MUS 147. Continuation of the study of piano performance skills learned in MUS 147 with emphasis on specific skills necessary to pass the piano proficiency examination. Required for music majors.

MUS 150 - Applied Piano Lessons I
Prerequisite: One year of a piano course. Private piano lessons. Intended only for serious piano students.

MUS 151 - Applied Piano Lessons II
Prerequisite: MUS 150. Second enrollment in piano lessons. Private piano lessons. Intended only for serious piano students.

MUS 152 - Applied Piano Lessons III
Prerequisite: MUS 151. Third enrollment in piano lessons. Private piano lessons. Intended only for serious piano students.

MUS 153 - Applied Piano Lessons IV
Prerequisite: MUS 152. Fourth enrollment in piano lessons. Private piano lessons. Intended only for serious piano students.

MUS 155 - Voice Class
Study of vocal techniques and beginning vocal performance. Open to any interested students. Will include both group and individual singing.

MUS 160 - Applied Voice Lessons I
Prerequisite: One year of a voice course. Performance-oriented study of voice through weekly private applied lesson and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 161 - Applied Voice Lessons II
Prerequisite: MUS 160. Performance-oriented study of voice through weekly private applied lessons and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 162 - Applied Voice Lessons III
Prerequisite: MUS 161. Performance-oriented study of voice through weekly private applied lessons and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 163 - Applied Voice Lessons IV
Prerequisite: MUS 162. Performance-oriented study of voice through weekly private applied lessons and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 163B - Applied Voice Lessons V
Prerequisite: MUS 163. Performance-oriented study of voice through weekly private applied lesson and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 163C - Applied Voice Lessons VI
Prerequisite: MUS 163B. Performance-oriented study of voice through weekly private applied lesson and student independent study. Instruction will focus on individual vocal needs and strengths. Performance on one recital and final jury required.

MUS 175 - Chamber Singers I
Prerequisite: Consent of instructor. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).

MUS 176 - Chamber Singers II
Prerequisites: MUS 175 and consent of instructor. Second enrollment in cingers. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).
MUS 177 - Chamber Singers III  1
Prerequisites: MUS 176 and consent of instructor. Third enrollment in chamber singers. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).

MUS 178 - Chamber Singers IV  1
Prerequisites: MUS 177 and consent of instructor. Fourth enrollment in chamber singers. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).

MUS 178B - Chamber Singers V  1
Prerequisites: MUS 178 and consent of instructor. Fifth enrollment in chamber singers. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).

MUS 178C - Chamber Singers VI  1
Prerequisites: MUS 178B and consent of instructor. Sixth enrollment in chamber singers. Select choir of mixed voices that performs chamber music from all historical periods. Instruction will focus on ensemble skills necessary for successful performance (tone production, diction, blend, balance, phrasing, etc.).

MUS 180 - Problems in Music  1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in music under the supervision of a music instructor.

MUS 195 - Concert and Recital Attendance  0
Attendance of at least eight music concerts and/or recitals in a semester performed by college soloists and ensembles or community nonacademic performing groups such as professional or semi-professional ensembles, operas or university musicals. Community performances must be pre-approved by the Music Arts program coordinator prior to attending. This is a pass/fail course.

MUS 210 - Jazz Choir I  2
Prerequisite: Consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

MUS 211 - Jazz Choir II  2
Prerequisites: MUS 210 and consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

MUS 212 - Jazz Choir III  2
Prerequisites: MUS 211 and consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

MUS 213 - Jazz Choir IV  2
Prerequisites: MUS 212 and consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

MUS 214 - Jazz Choir V  2
Prerequisites: MUS 213 and consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

MUS 215 - Jazz Choir VI  2
Prerequisites: MUS 214 and consent of instructor. This small vocal ensemble performs a wide range of vocal jazz/contemporary periods and styles. Instruction focuses on those vocal skills unique to jazz including harmonies, rhythms, scat singing, and improvisation.

NET 101 - Introduction to Networks  3
Introduces the architecture, structure, functions, components, and models of the internet and computer networks. The principles of Internet Protocol (IP) addressing, fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple local area networks (LANs), perform basic configurations for routers and switches and implement IP addressing schemes.

NET 102 - Networking Essentials  3
Introduces the student to the use and implementation of local area networks and basic network design concepts. Subject matter covered during this course all align with current Network+ certification topics and help prepare a student for this certification.

NET 103 - Routing and Switching Essentials  3
Prerequisite: NET 101 with a grade of C or higher. Corequisite: NET 101. Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area open shortest path first (OSPF), virtual LANs, and inter-virtual LAN routing in both IPv4 and IPv6 networks.
NET 106 - Introduction to Network Security  3
Prerequisite: NET 101 with a grade of C or higher. Course will introduce students to a basic understanding of computer, network and organizational security as it relates to the information technology field.

NET 120 - Network Server  3
Prerequisite: NET 101 with a grade of C or higher. Course will cover the current popular server operating system. Topics include planning a network, installing hardware and software, management, client accounts, and troubleshooting. Course will be structured to the requirements for certification.

NET 125 - Linux Operating Systems  3
Prerequisite: NET 101 with a grade of C or higher. Course will cover the basics of operating and managing a Linux-based operating system.

NET 126 - Network Client  3
Prerequisite: NET 101 with a grade of C or higher. Study of the operating system used on today's workstations. Installation, administration, configuring files, security, and local and network printing will be presented from a network administrator's viewpoint. Troubleshooting and networking the operating system will be included.

NET 135 - SQL Server System Administration  3
Prerequisite: NET 120 with a grade of C or higher. Course covers how to install, configure and administrate a structured query language (SQL) server. Topics include configuring database options (capacity, connectivity and performance); automating data transfer and manipulation with data transformation services (DTS) packages; using SQL server replication services; managing security (authentication, logins, permissions, and alerts); monitoring and fine-tuning system performance; performing backups and restorations; clustering databases; supporting SQL server in a clustered environment; implementing disaster recovery; and optimizing clustering performance.

NET 136 - Exchange Server Administration  3
Prerequisite: NET 120 with a grade of C or higher. Study of installing, configuring and administering Microsoft Exchange Server. Configure Microsoft Directory Services, administer groups and public folder solutions for Exchange Server. Deployment of mail clients such as Outlook and Outlook Web Access, as well as configuring recipient objects for email, instant messaging and chat. Learn to troubleshoot messaging connectivity and how to resolve problems with clients, routing, foreign mail systems, and links between servers. Additional topics include enhanced Exchange Server Security using v3 certificates, virtual servers, and Microsoft Key Management Server; optimizing messaging, collaboration and calendaring services; managing the Microsoft Web Storage System; and developing a backup and recovery plan for system and user data.

NET 138 - Network Directory Services  3
Prerequisite: NET 120 with a grade of C or higher. Study of planning, configuring and administering of network directory services and infrastructure on a LAN. Topics include the installation and configuration of domain name system (DNS); the administration of the network users' environment and software using group policies; remote installation services (RIS); management of users, groups, shared folders, and network resources; implementing network security and security troubleshooting; and monitoring and optimizing the directory services.

NET 140 - PC Hardware  3
Prerequisite: NET 120 with a grade of C or higher. Study of computer operating systems including Windows, Linux and DOS, with requirements of necessary hardware and known problems and features. Laboratory consists of troubleshooting selected computer systems.

NET 142 - PC Operating Systems  3
Prerequisite: NET 101 with a grade of C or higher. Study of computer operating systems including Windows, Linux and DOS, with requirements of necessary hardware and known problems and features. Laboratory consists of troubleshooting selected computer systems.

NET 158 - Network Firewalls  3
Prerequisites: NET 106 and NET 203 with grades of C or higher. Course will cover the functions, features and configuration of a firewall as applied in a network. Covers setup, management, traffic filtering, and virtual private networks (VPNs). Students will configure and implement firewalls to protect the network from external threats. Hands-on coursework is included in the course.

NET 175 - Network Administration Internship  4
Prerequisite: Consent of program coordinator. Designed for practical application in the operations of a network. Provides on-the-job training work experience in the area of computer networks. Student will be supervised and evaluated by the instructor.

NET 180 - Networking Project  1 to 3
Prerequisite: Consent of program coordinator. Independent study of a special problem in networking under the supervision of a networking instructor.

NET 201 - Scaling Networks  3
Prerequisite: NET 103 with a grade of C or higher. Describes the architecture, components and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with open shortest first path (OSPF), enhanced interior gateway routing protocol (EIGRP), spanning tree protocol (STP), and virtual local area networking trunking protocol (VTP) in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement dynamic host configuration protocol (DHCP) and domain name system (DNS) operations in a network.
NET 202 - Digital Forensics  
Prerequisites: NET 101 and NET 106 with grades of C or higher. Course will introduce students to the basics concepts and skills used when investigating possible computer crimes. Such skills could be beneficial in a variety of roles, i.e., working with law enforcement, private contractors, etc.

NET 203 - Connecting Networks  
Prerequisite: NET 201 with a grade of C or higher. Corequisite: NET 201. Discusses the wide area network (WAN) technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement internet protocol security (IPSec) and virtual private network (VPN) operations in a complex network.

NET 206 - Ethical Hacking  
Prerequisites: NET 101 and NET 106 with grades of C or higher. Course will introduce students to the basics of scanning, testing, hacking, and securing resources. Expanding upon the basics of general security practices, students will gain a better understanding of how to better secure resources.

NET 222 - Enterprise Applications I  
Prerequisites: NET 120 and NET 138 with grades of C or higher. Course will introduce students to various server applications that are widely utilized throughout the information systems industry.

NET 223 - Enterprise Applications II  
Prerequisites: NET 120 and NET 138 with grades of C or higher. Course will introduce students to various server applications that are widely utilized throughout the information systems industry.

NET 231 - Mobile Networking  
Prerequisites: NET 101 and NET 126 with grades of C or higher. This course will teach students the basics of configuration, supporting and managing mobile devices in the corporate network.

NET 238 - Server Virtualization  
Prerequisite: NET 120 with a grade of C or higher. Course will teach students in the setup, configuration and management of virtualized servers.

NET 240 - Enterprise Storage  
Prerequisite: NET 120 with a grade of C or higher. Course is designed to introduce students to technologies utilized for data storage in the enterprise environment.

NURSING

NURS 102 - CPR for Health Care Providers  
American Heart Association course teaches health care providers how to recognize and respond to life-threatening emergencies such as respiratory arrest, cardiac arrest and foreign-body obstruction in infants, children and adults. The skills necessary to respond to these emergencies are demonstrated and practiced during the course. Course includes use of an automated external defibrillator (AED). Upon successful completion the student will be issued an American Heart Association Cardiopulmonary Resuscitation (CPR) card for Health Care Providers. This is a pass/fail course.

NURS 103 - CPR Recertification  
Prerequisite: Consent of instructor. Course is required to maintain American Heart Association CPR certification in the health care field. A current American Heart Association CPR card for Health Care Provider is required to enroll in the course. This is a pass/fail course.

NURS 110 - Personal Vocational Concepts  
Evidence-based practice concepts in nursing are introduced as they relate to standards of care, behavioral concepts important to the nurse, history of nursing, role identification and responsibility, interprofessional collaboration, the quality improvement process, and ethical and legal aspects of the licensed practical nurse and registered nurse.

NURS 111 - Introduction to Psycho-Social Health  
Basic concepts of wellness and illness, caring, communication techniques, and growth and development across the life cycle are introduced with an emphasis on evidence-based care. Special circumstances and interpersonal relationships, such as the impact of violence and abuse, cultural awareness, the grieving process, and spiritual needs of the individual and family will be explored. Special treatment modalities such as medications will be discussed with regard to concepts of mental health.

NURS 112 - Fundamentals I  
Essential nursing skills utilizing current standards of practice required for entry-level nurses are introduced. The learner will demonstrate an understanding of how to assist clients with important daily activities and basic nursing assessment skills through both classroom and hands-on learning experiences. (1 lecture, 1 lab)

NURS 113 - Fundamentals II  
Presents more advanced essential nursing skills based upon current standards of practice that are required for entry-level nurses. The learner is introduced to the nursing process that is utilized in the delivery of nursing care. Skills are presented through both classroom and hands-on learning experiences and includes development of nursing assessment skills, medication administration, intravenous (IV) therapy, use of information technology, and other technical skills.
NURS 118 - Fundamentals II Clinical  1.5
Essential nursing skills utilizing current standards of practice presented in NURS 114 and NURS 117 will be applied in both long-term and acute care clinical settings. Skills that will be mastered include physical assessment, therapeutic communication, basic nursing care, IV therapy, and nursing documentation. This is a pass/fail course.

NURS 119 - Allied Health Pharmacology  3
Basic pharmacologic, pharmacodynamics and pharmacokinetic principles for the most common drug classifications and specific select drugs will be explored using evidence-based practices. Emphasis on patient safety needs are incorporated through individualized teaching related to the most common drug classifications.

NURS 122 - Adult Health I  4
Entry-level, evidence-based nursing care will be discussed for adult and elderly clients experiencing alterations in the integumentary, respiratory and cardiac systems; clients undergoing surgery; and clients with cancer.

NURS 124 - Adult Health II  4
The basic nursing course addresses evidence-based practice principles and nursing care of adult and elderly clients experiencing alterations in renal, neurological and gastrointestinal systems, as well as the client who has developed diabetes mellitus. Included are basic strategies for leadership and conflict resolution.

NURS 126 - Adult Health Nursing Clinical  3
Basic nursing concepts utilizing current standards and evidence-based best practices are applied to the acute clinical setting. The student will provide nursing care to the client and family with altered health status, while evaluating laboratory and diagnostic findings, medication effectiveness and client responses. This is a pass/fail course.

NURS 128 - Adult Health III  2
Principles of evidence-based nursing care are addressed for adult and elderly clients experiencing alterations in the endocrine, sensory, musculoskeletal, hematological, and immune systems.

NURS 130 - Adult Health Care Coordination Clinical  2
Focuses on the utilization and application of basic skills gained from the practical nursing curriculum and incorporates current standards and evidence-based practices for the role of an entry-level nurse. Emphasis is placed on principles of leadership, conflict resolution, coordinating client care, and applying basic principles across the lifespan, particularly the elderly client. This is a pass/fail course.

NURS 132 - Nutrition  3
Essential nutrient digestion, absorption, metabolism, and excretion are emphasized, throughout various cultures. Diet analysis and current issues in nutrition will aid the student in applying evidence-based practice to the basic concepts of everyday situations throughout the life cycle.

NURS 134 - Nursing Care Childbearing Family  2
Foundational learning that focuses on the uncomplicated health care and wellness promotion, by using evidence-based, culturally sensitive care for the family during the reproductive years, including the laboring woman, postpartum patient/family, the newborn, and gynecological issues.

NURS 136 - Childbearing Family Clinical  1.5
Foundational learning that focuses on the uncomplicated health care and wellness promotion, by using evidence-based care for the family during the reproductive years, including the laboring woman, postpartum patient/family, the newborn, and gynecological issues. This is a pass/fail course.

NURS 140 - Nursing Care Child Rearing Family  2
Concepts of assessment, growth and development, nutrition for the pediatric patient, medication administration for children, common recurring health conditions, and evidence-based nursing care of the hospitalized child are discussed.

NURS 142 - Child Rearing Family Clinical  1.5
Participation in activities to develop skills in family-centered nursing care of children is expected. Experiences will include health promotion activities in the community, providing evidence-based patient centered nursing care of ill children, and promoting interpersonal relationships within the family unit. This is a pass/fail course.

NURS 210 - Nursing Transition Course  2
Prerequisite: Acceptance to Year Two of the Associate Degree Nursing (ADN) program. Building upon the knowledge obtained from the practical nursing curriculum, the advanced placement student reviews the philosophy, outcome-based curriculum and use of evidence-based practice. The student transitioning into the ADN program will have opportunities to demonstrate competencies in pharmacology (including dosage calculations), IV starts and maintenance, physical assessment, and more. The student will explore safe and effective care, health promotion, care of the older adult, and cultural awareness. Completion of the course with a B or better is required to continue in the ADN program.

NURS 213 - Introduction to Professional Nursing  2
Building upon the knowledge obtained from the practical nursing curriculum and incorporating current standards of practice and evidence-based care for the entry-level professional nurse, the student’s current leadership and management abilities are explored and enhanced. Exploration focuses on the roles and functions of the professional registered nurse in various health care settings. Topics of discussion include cultural awareness, quality improvement, professionalism, leadership and management styles, communication, delegation, disaster management, and priority setting when caring for diverse and aging populations and cultures.
NURS 215 - Complex Health: Mental Health 2.5
Building upon the knowledge obtained from the practical nursing curriculum, the nurse’s role in promoting evidence-based psychosocial integrity for the client and family/significant others are explored. Topics include the use of coping mechanisms, crisis intervention, therapeutic communication, psychopathology, and case management. Emphasis is placed on cultural awareness, client education, available resources and strategies, and current trends in providing care in the community setting to promote wellness.

NURS 216 - Complex Health: Mental Health Clinical 2
Focuses on managing clients in the mental health setting by incorporating current standards and evidence-based practice to the professional registered nurse role. Emphasis will be on planning and managing the care of a client in an inpatient mental health facility by participating and leading therapeutic groups. Application from NURS 215 will be demonstrated in the clinical settings. This is a pass/fail course.

NURS 219 - Complex Health: Elimination 3
Building upon the knowledge obtained from the practical nursing curriculum and incorporating current standards for the professional registered nurse, complex features of selected diseases and disorders of the liver, gastrointestinal and renal systems are discussed and explored. Topics will include pathophysiology and the medical and/or surgical management, and interprofessional collaboration needed for the patient with these diseases or disorders. The discussions will be centered on using evidence-based practice to guide the nursing process and the Gordon’s Functional Health patterns framework. Cultural and psychosocial issues, including involvement of patients in decision making and best practices for promoting healthy lifestyles and providing patient-centered care are also discussed.

NURS 221 - Complex Health: Nutrition/Metabolic 2.5
Building upon the knowledge obtained from the practical nursing curriculum and the first semester of professional nursing school, the student will be incorporating current standards, interprofessional collaboration, and evidence-based practice for the professional registered nurse. Complex features of selected acid-base, fluid and electrolyte disorders; selected exocrine disorders and injuries; and management of immune system problems are discussed and explored. The student will evaluate safe and effective care, health promotion, care of the older adult, and cultural awareness. The discussions will be centered on the nursing process and the Gordon’s Functional Health patterns framework.

NURS 227 - Complex Health: Family 3
Advances the student’s ability to provide patient-centered, culturally sensitive, evidence-based complex care for the newborn, pediatric and obstetric clients with complicated issues or at high risk for developing complications addressing individual patient needs. Discussions will be centered on the nursing process.

NURS 228 - Complex Health: Family Clinical 1
Focuses on managing clients with complex health care needs and incorporates current standards of evidence-based practice to the professional registered nurse role. Emphasis is placed on problem-solving, advanced physical assessment techniques and time management activities. Application of the principles from NURS 227 will be demonstrated in the appropriate clinical settings. This is a pass/fail course.

NURS 230 - Complex Health: Adult Clinical I 1
In this clinical, the student will begin to utilize and apply appropriate advanced nursing concepts from Introduction to Professional Nursing and medical surgical knowledge to the professional registered nurse role, including principles of the nursing process, current standards of evidence-based practice, leadership, management, communication, interprofessional collaboration, and use of information technology where applicable to care for adults and older adults. This is a pass/fail course.

NURS 231 - Complex Health: Adult Clinical II 1
This clinical course is a continuation of Complex Adult Health I and preparation for Complex Health Adult III. Using current standards of care and evidenced-based practice, the student will begin to coordinate and manage care for multiple clients at the acute care clinical site. The emphasis will be on further development of the professional nursing role in prioritization and coordination of patient care for adults and older adults. This is a pass/fail course.

NURS 233 - Complex Health: Adult Clinical III 3
Building upon the knowledge obtained from the practical nursing curriculum and the first semester of professional nursing school, students will work in an inpatient clinical area focusing on managing clients with complex health care needs. The student will manage care for clients in medical and surgical units, intensive care units (ICU), emergency rooms (ER) and step-down units. There will be an emphasis on prioritization, critical thinking, delegation, problem-solving, advanced physical assessment techniques, cultural awareness, care of the aged, and time management activities. Evidence-based practice is used in applying the assessment process to nursing care. Application of the principles from NURS 213. NURS 221, NURS 234, and NURS 237 will be demonstrated in the appropriate clinical settings while building upon NURS 230 and NURS 231 clinical. This is a pass/fail course.
NURS 234 - Complex Health: Activity and Rest 3
Building upon the knowledge obtained from the practical nursing curriculum and the first semester of professional nursing school, students will incorporate current standards and evidence-based practice for the professional registered nurse. This will include complex features of selected cardiovascular, respiratory, gastrointestinal, and traumatic disorders and injuries and discussion of the nursing care. Nursing that includes safe and effective care, health promotion and age and culture implications are explored as part of the learning process. The discussions will use evidence-based practice centered on the nursing process, application of the nursing assessment to case studies, and review of prioritization and implementation in conjunction with Gordon’s Functional Health patterns framework.

NURS 237 - Complex Health: Cognitive/Perceptual 3
Building upon the knowledge obtained from the practical nursing curriculum and incorporating current standards and evidence-based practice for the professional registered nurse, complex features of selected neurological diseases, disorders and injuries are discussed and explored. Corresponding pharmacological interventions and interdisciplinary collaboration will be discussed. The discussions will be centered on the nursing process and the Gordon’s Functional Health patterns framework.

NURS 243 - Professional Nursing Capstone Clinical 2.5
Focuses on the utilization and application of complex skills and knowledge gained from the associate nursing curriculum and incorporates current standards and evidence-based practice to the professional registered nurse role. Emphasis is placed on mastery of assessment, documentation, teaching, medication knowledge and administration, prioritization, time management, and communication with clients, families, staff, and peers. Application and demonstration of leadership, management, legal and ethical principles of delegation for the registered nurse in various community and acute care settings is also expected. This is a pass/fail course.

OCCUPATIONAL SAFETY HEALTH ADMINISTRATION

OSHA 102 - OSHA 10-hour Construction Industry 1
Course is provided for those seeking employment in a field that operates on construction sites governed by the safety regulations of 29 CFR 1926, Occupational Safety and Health Administration (OSHA) standards for the construction industry. Upon successful completion of this course, the student will earn an OSHA 10-hour completion card. This is a pass/fail course.

OCCUPATIONAL THERAPY

OTA 200 - Foundations of Occupational Therapy 4
Course presents an introduction to occupational therapy including history, philosophical base, values, ethics, practice framework, and clinical reasoning. Students will learn selected theories and frames of reference as they pertain to interventions in mental health, physical disabilities, pediatrics, and community practice areas. An overview of the occupational therapy process, including assessment, treatment planning, treatment implementation, and discontinuation of intervention will be presented. Role delineation and collaboration of the occupational therapy assistant with other occupational therapy and health care personnel are discussed.

OTA 205 - Medical Conditions in Occupational Therapy 3
Course will provide a framework for students to learn about common medical conditions seen by occupational therapy practitioners and to facilitate learning of these conditions from an occupational therapy perspective. It is not intended to emphasize treatment of a diagnosis; however, students will learn about specific factors unique to given conditions that may impact an individual’s occupational roles and functions. These factors must be understood and analyzed regarding the relative impact on the individual’s occupational performance. The knowledge gained from this course is a necessary prerequisite to Physical Disabilities Practice.

OTA 210 - Analysis of Occupations 2
Course is designed to foster a beginning exposure to individuals experiencing a variety of physical or mental disabilities, including caregivers of individuals with disabilities, through community experiences. Through these experiences, students will develop skills in observation, analysis, interview, assessment and data collection, and relational skills. Students will complete writing assignments with an emphasis on their observations, analysis and performance of human occupation across the lifespan, with an emphasis on contextual factors impacting occupational performance. Through the written assignments, students will learn the style of professional writing required for OTAs. Professional and therapeutic relationships will be emphasized throughout the course.

OTA 215 - Mental Health and Psychosocial Practice 4
Course presents the role of the occupational therapy assistant in the psychosocial area of occupational therapy practice. Students will learn selected frames of reference and explore the effects of psychosocial dysfunction on areas of occupation. Students will learn skills necessary to assess, implement and document intervention in a variety of mental health settings. Client factors, including culture and diversity, therapeutic interactions and methods are studied. Students will develop skills in administering individual and group interventions, professional communication, conflict negotiation, and advocacy. Lab activities, in-class activities, and level I fieldwork opportunities will enable students to participate in and apply psychosocial principles to practice.
OTA 220 - Pediatric and Adolescent Practice  4
Treatment of pediatric and adolescent conditions. Normal and delayed development of the infant, child and adolescent are explored. The lab component incorporates theoretical principles and provides opportunities for students to develop assessment, intervention planning and implementation, and documentation skills to address a range of childhood sensory-motor, cognitive and psychosocial performance deficits. Students will learn to adapt the environment, tools, materials, and occupations to meet the self-care, work/play and leisure needs of the pediatric and adolescent population. Lab activities, site visits and level I fieldwork opportunities will enable students to participate in and apply pediatric and adolescent treatment principles to practice.

OTA 250 - Functional Kinesiology  2
In this course, students use and apply their knowledge of anatomy and physiology to study muscle groups and their function relative to performing various activities. Analysis of functional movement patterns required for work, self-care, play, and leisure activities is emphasized. Manual muscle testing, range of motion, goniometry and basic transfer skills are practiced. Principles of energy conservation, joint protection and work simplification are presented. Prevention, health maintenance and safety procedures relevant to functional mobility are reviewed.

OTA 255 - Physical Disabilities Practice  4
Course provides in-depth opportunities for students to develop assessment, intervention planning, intervention, and documentation skills to address a wide range of adult and geriatric physical disabilities and conditions typically treated by occupational therapists and occupational therapy assistants. Topics include, but are not limited to, stroke, spinal cord injury, fractures and joint replacement, head injury, and cardiopulmonary disorders. The use of splinting, orthotics, modalities, and assistive technology in treatment will also be presented. Students will learn to adapt the environment, tools, materials, and occupations to meet the self-care, work, play, and leisure needs of the adult and geriatric population. Lab activities and level I fieldwork opportunities will enable students to participate in and apply physical disabilities treatment principles to practice.

OTA 260 - Community Practice  3
Site visits and level I fieldwork opportunities will enable students to participate in and apply occupational therapy assessment and intervention principles to a wide range of community settings, including vocational, vocational rehabilitation, home health, and emerging community practice areas. Emphasis will be on community settings in the students' state and geographic region. The course also provides a broad exposure to the social, political, legislative, economic, and cultural factors that influence service delivery.

OTA 265 - Ethics, Management and Leadership  3
Course focuses on the OTA role in managing and directing occupational therapy services. It covers ethical provision of services, departmental operations, program development, supervisory requirements, personnel development and supervision, professional team building, quality assurance, compliance with regulations, reimbursement, and national and state credentialing requirements. Techniques for developing a resume and job interview skills are practiced. The importance and responsibility for ongoing OTA professional development, ethical practice, contributing to research and evidence-based practice, attention to emerging practice issues and areas, and international perspectives are explored.

OTA 270 - Professional Skills  3
Course is designed to foster practical professional skills in critical thinking using literature to make evidence-based practice decisions and recommendations and using theory to guide practice, all through the completion of a professional portfolio.

OTA 290 - Level II Fieldwork A  8
Full-time clinical fieldwork experience in mental health, physical disabilities, geriatric, pediatric, and/or community-based practice working under the supervision of an OTR and/or COTA. Focus is on achieving entry-level competence in planning and implementing interventions.

OTA 295 - Level II Fieldwork B  8
Full-time clinical fieldwork experience in mental health, physical disabilities, geriatric, pediatric, and/or community-based practice working under the supervision of an OTR and/or COTA. Focus is on achieving entry-level competence in planning and implementing interventions.

OADM 102 - Introduction to Keyboarding  1
Optional test out. Individualized course that provides the student with a mastery of touch-typing. Emphasis is placed on developing speed and accuracy through instruction, guided practice and timed writings. Course is not intended for health information technology or office management majors. There is not any document production in this course.

OADM 104 - Keyboarding  3
Optional test out. Individualized course provides the beginning student with a mastery of touch-typing and an introduction to basic formats of letters, memos, tables, and reports. All office management students are required to take this course as part of their core curriculum.

OADM 106 - Document Formatting  2
Optional test out. Prerequisite: OADM 104. Individualized course that includes processing various business and professional documents and forms. Emphasis is placed on accuracy, speed development, and ability to follow directions. Core requirement for all office management majors.
**OADM 116 - Records Management**  
Emphasize principles and practices of effective records and information management for physical and electronic records systems. Emphasis is placed on the need to understand the changes occurring with the volume of information, the need for compliance to government regulations and advances in technology.

**OADM 118 - Business English for Office Management**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Consists of concentrated drill and discussion of business English usage, punctuation and style as applied to editing and proofreading documents.

**OADM 121 - Calculators**  
Course is designed to teach touch operation of 10-key printing and display calculators along with their special timesaving features. Emphasis is placed on speed and accuracy.

**OADM 125 - Skillbuilding for Office Support Services**  
Prerequisite: OADM 104 or optional test out. Individualized course designed to improve accuracy and speed. Office Support Services certificate candidates must achieve a grade of C or higher in order to complete graduation requirements for the program.

**OADM 127 - Skillbuilding for Office Management**  
Prerequisite: OADM 104 or optional test. Individualized course designed to improve accuracy and speed. Office Management degree candidates must achieve a grade of B or higher in order to complete graduation requirements for the program.

**OADM 134 - Office Management**  
Prerequisite: Consent of program coordinator. Capstone course for the Professional Certificate in Office Support Services and the Associate of Applied Science in Business Management with Office Management Specialty. Course includes activities and information in human relations, personal and professional qualities, decision making, office supervision, incoming and outgoing mail, minutes, office procedures, work ethics, time management, appearance, record keeping, office organization, personnel management, and demeanor.

**OADM 175 - Office Management Internship**  
Prerequisite: Consent of program coordinator. An on-the-job work experience that provides the student the opportunity to work in an office environment. Students are evaluated by the instructor and employer.

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**PHARMACY TECHNOLOGY**

**PHRM 105 - Pharmacy Technician I**  
Prerequisite: Basic computer skills. Introduction to the fundamentals and knowledge necessary to take the Pharmacy Technician Certification Board (PTCB) exam. Contents of this course include a brief history of pharmacy and how it has evolved into today’s pharmacy, drug regulation and control, pharmaceutical terminology, factors that make up a prescription, pharmaceutical calculations, and different routes and formulations of various medications.

**PHRM 107 - Pharmacy Technician II**  
Prerequisites: PHRM 105 with a grade of C or higher and basic computer skills. Course will provide additional necessary knowledge needed for the Pharmacy Technician Certification board (PTCB) exam. Contents of this course include compounding, biopharmaceutics and other factors affecting drug activity, utilizing appropriate resources, inventory management, and financial issues. Course will also go further in depth to the different areas of pharmacy where a pharmacy technician is needed.

**PHRM 109 - Pharmacology for Pharmacy Technicians**  
Course introduces basic pharmacological principles needed by pharmacy technicians, including basic understanding of the drug action, how antagonists and agonists work, the significance and meaning of blood concentration-time profiles, and other aspects of pharmacology suited for pharmacy technicians.

**PHRM 111 - Practicum for Pharmacy Technicians**  
Prerequisites: PHRM 105 and PHRM 107 with grades of C or higher and basic computer skills. Course provides a study of and an introduction to the pharmacy in providing patient care. There will be an opportunity for students to observe activities in a pharmacy setting of their choice. There will be practical, general workplace training supported by an individualized learning plan developed by the employer, program coordinator and student.

**PHRM 115 - Pharmacology Certification**  
Course will cover the nationally accredited and state-licensed program and prepare students for the PTCB exam to achieve their Certified Pharmacy Technician (CPhT) designation.

**PHRM 175 - Professional Practical Experience**  
Prerequisite: Consent of program coordinator. Field-based professional practice experience in a hospital or commercial pharmacy setting. Students will be assigned specific professional practice objectives and skills to be completed at the site and will participate in daily pharmacy activities. This is an unpaid work experience requiring 80 to 120 hours of participation.
PHILOSOPHY

PHIL 101 - Introduction to Philosophy 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. An introduction to historical and topical themes in philosophy, such as free will, God, personal identity, the limits of knowledge, the nature of inferential reasoning, morality, and social justice.

PHIL 102 - Ethics 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. An introductory examination of the foundations of moral discourse and ethical practice. This course includes both an introduction to a number of moral theories and discussion of contemporary moral issues.

PHIL 104 - Living Religions 3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. An introduction to a wide variety of the world’s living religions as both beliefs and practices, and an analysis of the historical-cultural value systems underpinning their various divergent or overlapping value systems. Religions reviewed include Hinduism, Buddhism, Judaism, Christianity, Islam and to a lesser extent Jainism, Sikhism, Confucianism, Daoism, and Shinto.

PHYSICAL EDUCATION-ACTIVITY

PEAC 124 - Varsity Basketball - Men 1
Prerequisite: Consent of athletic director. Participation in the men’s varsity basketball program.

PEAC 125 - Varsity Basketball - Women 1
Prerequisite: Consent of athletic director. Participation in the women’s varsity basketball program.

PHYSICAL EDUCATION-PROFESSIONAL

PPRO 101 - Sports Officiating I 2
Includes lectures, readings, class discussions, and field experience in the officiating of fall sports, including football, soccer, basketball, etc.

PPRO 102 - Sports Officiating II 2
Includes lectures, readings, class discussions, and field experience in the officiating of spring sports, including softball, baseball, volleyball, etc.

PPRO 104 - Care and Prevention of Athletic Injuries 3
Introduction to athletic training and its administrative procedures and problems. Includes prevention and care of injuries and other special considerations.

PPRO 108 - Philosophy of Sports 2
Study of motivation, skill and physical learning behaviors in physical education and athletics. Special problems of coaching athletics, specifically dealing with motivational, mental and behavioral problems.

PPRO 180 - Problems in Professional PE 1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in professional physical education under the supervision of a physical education instructor.

PHYSICAL SCIENCE

PHYS 103 - Introduction to Physical Science 3
Prerequisites: ENGL 070 and MATH 110 or MATH 112 with grades of C or higher or equivalent placement scores. Introduction to physical science that includes the basic concepts of chemistry, physics and astronomy. Not open to students with college credit in PHYS 105 or higher-level course.

PHYS 105 - College Physics I with Lab 5
Prerequisite: MATH 110 or MATH 112 with a grade of C or higher or equivalent placement score. An introduction to the fundamental ideas of physics. Topics include mechanics, wave motion and heat. (4 lecture, 1 lab)

PHYS 106 - College Physics II with Lab 3
Prerequisite: PHYS 105 with a grade of C or higher. Continuation of PHYS 105. Covers electricity, magnetism, optics, and modern physics. (2 lecture, 1 lab)

PHYS 118 - General Physics I with Lab 5
Prerequisite: MATH 130 with a grade of C or higher. Corequisite: MATH 131. An introduction to the fundamental ideas of physics. Topics include mechanics, oscillatory motion and thermodynamics. First course in calculus-based physics for the science and engineering student. (4 lecture, 1 lab)

PHYS 119 - General Physics II with Lab 5
Prerequisite: PHYS 118 with a grade of C or higher. Continuation of PHYS 118. Topics in the field of electromagnetism will be covered. (4 lecture, 1 lab)

PHYS 125 - Technical Science 4
Prerequisite: MATH 108, MATH 110 or MATH 112 with a grade of C or higher or equivalent placement score. Corequisite: MATH 108. MATH 110 or MATH 112. Designed to help students develop a better understanding of physics as it applies to the operation of machinery. Topics include measurement, applied geometry, mechanics, fluids, waves, simple machine, energy and power, heat and temperature, electricity, and magnetism.

PHYS 180 - Problems in Physics 1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in physics under the supervision of a science instructor.

PHYS 203 - Statics 3
Prerequisite: PHYS 118 with a grade of C or higher. Application of the principles of mechanics to engineering problems of equilibrium. Topics include resultants, equilibrium, friction, trusses, center of gravity, and moment of inertia.
# Political Science

**POLS 101 - American/National Government**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Survey course of the American government and political systems. Particular attention is given to the government’s origins, politics, the branches of government, and policy making. The Missouri Constitution is included to meet the requirements of Senate Bill No. 4.

**POLS 102 - Missouri Constitution**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Designed to meet requirements of Senate Bill No. 4. Intended for students testing out of history or government courses or transferring these courses from another state. Course is available on an individual basis. This is a pass/fail course.

**POLS 103 - Introduction to Political Science**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Study of the nature of government, politics, the state, relations among nations, and the areas of political science. Students will make a preliminary examination of governmental institutions and selected political theories with an emphasis on basic principles, concepts and characteristics of governments around the world. Does not meet requirements of Senate Bill No. 4.

**POLS 175 - Political Science Internship**  
Prerequisite: Consent of instructor. On-the-job work experience provides an opportunity for the student to work in a state or local government office or in a political action setting.

**POLS 180 - Problems in Political Science**  
Prerequisite: Consent of instructor. Independent study of a special problem in political science under the supervision of a political science instructor.

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# Psychology

**PSY 101 - General Psychology**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to the scientific study of behavior and mental processes. Includes a survey of historical and current theories, theorists and perspectives in psychology. Goals include increasing critical thinking and intellectual curiosity about psychological phenomenon and provides a basis for further study in the field. Topics include neurology, sensation and perception, consciousness, learning, psychometrics, personality development, and mental illness and wellness. Writing papers in APA format is required.

**PSY 102 - Child Psychology**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Investigation into the interaction of biological and environmental factors affecting the physiological, intellectual and emotional development of the child from conception through adolescence. Writing papers in APA format is required.

**PSY 104 - Psychology of Personal Adjustment**  
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Overview of the major theories, concepts and principles in psychology that can be applied to personal and social adjustment. Topics include self-esteem, motivation, stress management, and others.

**PSY 180 - Problems in Psychology**  
Prerequisites: PSY 101 with a grade of C or higher and consent of instructor. Writing papers in APA format is required. Students are advised to have completed ENGL 101 prior to enrolling. Independent study of a special problem in psychology under the supervision of a psychology instructor.

**PSY 210 - Lifespan Development**  
Prerequisite: PSY 101 with a grade of C or higher. Writing papers in APA format is required. Students are advised to have completed ENGL 101 prior to enrolling. Study of major theories of psychological development during infancy, childhood, adolescence, and adulthood. Topics include physical, psychosocial and cognitive development across the lifespan giving consideration to cultural and individual variations.

**PSY 220 - Abnormal Psychology**  
Prerequisite: PSY 101 with a grade of C or higher. Not offered every semester. Writing papers in APA format is required. Students are advised to have completed ENGL 101 prior to enrolling. Study of the historical and cultural context of abnormal behavior and diagnosis of mental disorders. Topics include a survey of the causes and treatment of major mental illness such as mood disorders, anxiety disorders, substance abuse, schizophrenia, and personality disorders. Writing papers in APA format is required.

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# Radiologic Technology

**RAD 106 - Clinical Education I**  
Radiology student will complete an average of 240 contact hours, which equates to 3 credit hours. Supervised clinical rotations will be performed at assigned clinical sites. Clinical education provides the students with the opportunity to practice the skills and theory taught in the classroom. The "Five Steps to Clinical Competency" allow the student to progress in competency exams while practicing patient care and professionalism. Students are expected to complete seven mandatory competencies.
RAD 109 - Clinical Education II
Radiology student will complete an average of 160 contact hours, which equates to 2 credit hours. Supervised clinical rotations will be performed at assigned clinical sites. Clinical education provides the students with the opportunity to practice the skills and theory taught in the classroom. The ‘Five Steps to Clinical Competency’ allow the student to progress in competency exams while practicing patient care and professionalism. Students are expected to complete nine competencies.

RAD 111 - Clinical Education III
Radiology student will complete an average of 160 contact hours, which equates to 2 credit hours. Supervised clinical rotations will be performed at assigned clinical sites. Clinical education provides the students with the opportunity to practice the skills and theory taught in the classroom. The ‘Five Steps to Clinical Competency’ allow the student to progress in competency exams while practicing patient care and professionalism. Students are expected to complete nine competencies.

RAD 113 - Clinical Education IV
Radiology student will complete an average of 160 contact hours, which equates to 2 credit hours. Supervised clinical rotations will be performed at assigned clinical sites. Clinical education provides the students with the opportunity to practice the skills and theory taught in the classroom. The ‘Five Steps to Clinical Competency’ allow the student to progress in competency exams while practicing patient care and professionalism. Students are expected to complete nine competencies.

RAD 115 - Clinical Education V
Radiology student will complete an average of 360 contact hours, which equates to 4 credit hours. Supervised clinical rotations will be performed at assigned clinical sites. Clinical education provides the students with the opportunity to practice the skills and theory taught in the classroom. The ‘Five Steps to Clinical Competency’ allow the student to progress in competency exams while practicing patient care and professionalism. Students are expected to complete the remainder of required competencies.

RAD 117 - CT Clinical Education
Prerequisite: RAD 169 with a grade of C or higher. Clinical education provides the student with the opportunity to practice the skills and theory taught in the classroom. Students will demonstrate CT exam competency while practicing patient care and professionalism. Exam performance skills and critical thinking will be evaluated in this course.

RAD 120 - Radiographic Procedures I
Students will learn and practice the proper steps in the completion of radiographic exams including utilization of imaging equipment and proper patient positioning. Radiographic anatomy, radiation safety practices and patient care skills are reinforced. Students are introduced to basic film critique. Course will cover exams of the chest, abdomen and extremities. Course is a portion of the five steps to clinical competency and must be completed with a score of 85 percent or better. (1 lecture, 2 lab)

RAD 122 - Radiographic Procedures II
Students will learn and practice the proper steps in the completion of radiographic exams including utilization of imaging equipment and proper patient positioning. Radiographic anatomy, radiation safety practices and patient care skills are reinforced. Students are introduced to basic film critique. Course will cover exams of the thorax and spines, as well as contrast exams. Course is a portion of the five steps to clinical competency and must be completed with a score of 85 percent or better. (1 lecture, 2 lab)

RAD 124 - Radiographic Procedures III
Students will learn and practice the proper steps in the completion of radiographic exams including utilization of imaging equipment and proper patient positioning. Radiographic anatomy, radiation safety practices and patient care skills are reinforced. Students are introduced to basic film critique. Course will cover exams of the skull, facial, bones, and geriatric and pediatric imaging. Course is a portion of the five steps to clinical competency and must be completed with a score of 85 percent or better. (2 lecture, 1 lab)

RAD 128 - Introduction to Radiologic Sciences and Patient Care
Introduces students to an overview of the foundations in radiologic technology and the practitioner’s role in the health care system. Students become cardiopulmonary resuscitation (CPR) certified. Students are introduced to Joint Review Committee on Education in Radiology Technology (JRCERT) standards and basic radiation safety. Instruction will also include basic concepts of routine and emergency patient care procedures, infection control, standard precautions, and the legal and ethical aspects of professional radiologic technology.

RAD 130 - Radiation Production and Characteristics
An overview of electricity, electromagnetic theory, circuitry, x-ray generation, production, interaction, and the basic characteristics of natural radiation.

RAD 134 - Radiographic Exposures and Quality Control
Introduction to factors involved in quality image production and the correlation of these factors and their control. Overview of image receptors, scatter control and radiographic exposure techniques is provided. Students will identify and evaluate acceptable limits for equipment operation.
RAD 137 - Radiation Protection  
3  
Student radiologic technologists must be able to protect patients and themselves from overexposure to radiation. Students will learn about dose limits and proper shielding, as well as radiation monitors and detectors. Radiation effects and potential biological damage of ionizing radiation will be discussed. The as low as reasonably achievable (ALARA) principle will be taught as well as the objectives of a radiation protection program. Students will have a basic understanding of the varieties of interactions between ionizing radiation and living cells.

RAD 140 - Radiologic Pharmacology  
3  
Overview of the foundations of pharmacology, including pharmacokinetics, pharmacodynamics, pertinent laws, and safety issues. Students will gain an understanding of drug categories, their actions and commonly used drugs in each category. Additionally, this course will emphasize contrast media commonly used in medical imaging, routes of administration and venipuncture techniques.

RAD 142 - Trauma and Advanced Imaging  
3  
Builds on the positioning knowledge developed in the radiographic procedures courses. Advanced imaging techniques and approaches for imaging injured patients will be discussed. Radiographic anatomy, radiation protection and patient care skills will continue to be stressed. Course is a portion of the five steps to clinical competency and must be completed with a score of 85 percent or better. (2 lecture, 1 lab)

RAD 144 - Radiation Biology  
2  
Reinforcement of the varieties of interactions between ionizing radiation and living cells. Acute and chronic effects of radiation are described.

RAD 146 - Imaging Equipment  
3  
Provides information about image intensified fluoroscopy, mobile equipment and automatic exposure devices. Image acquisition utilizing film/screen, computed radiography (CR) and digital radiography (DR) systems and the appropriate processing units will be discussed.

RAD 150 - Radiographic Pathology  
3  
Provides a basic understanding of disease processes as they relate to radiographic procedures. Course will include facts, etiology, symptoms, treatments, and radiographic appearance of many diseases and discussion of how one must adjust the radiographic technique for each of these disorders.

RAD 152 - Image Analysis  
3  
Utilizes knowledge of anatomy, positioning and exposure factors to critique radiographs and determine if radiographs are of proper diagnostic quality. After a judgment is made, the student must determine which factors require change, how to accomplish the change, and why a change is necessary.

RAD 154 - Sectional Anatomy  
3  
Apply knowledge of systemic human anatomy to determine the sectional relationships of human organs, vessels and tissues. Knowledge of cross-sectional anatomy reinforces prior anatomical knowledge and leads to a greater understanding of modalities such as computed tomography (CT), magnetic resonance (MR) and ultrasound.

RAD 169 - Comprehensive CT Course for Technologists  
5  
This course will prepare registered radiologic technologists or future registered radiologic technologists for post-primary certification and registration in Computed Tomography. This course will consists of the four major CT content categories (patient care, safety, image production, and procedures).

RAD 170 - Preparing for Professionalism  
3  
A series of review assessments are administered enabling students to identify their strengths and weaknesses. Students will prepare for employment through the development of a letter of intent, a résumé and a thank you letter. Employment skills are researched and discussed.

RAD 180 - Problems in Radiologic Technology (1 to 3)  
1  
Prerequisite: Consent of program coordinator. Independent study course designed to allow the students to more deeply research specific areas of radiologic technology that are of interest to them under the supervision of a radiologic technology instructor. Students also will explore more advanced health care degrees and/or managerial opportunities available to radiologic technologists.

RENEWABLE ENERGY-BIOMASS

RETB 105 - Biomass/Biofuels Energy Generation  
3  
Survey of energy generation systems that use biomass, biofuels and bioproducts, including landfill gas, for power generation. Discussion includes demand, technology issues, policy, and regulatory factors.

RETB 110 - Power Plant Systems  
3  
Overview of power plant operations, function and terminology. Provides an understanding of the similarities and differences between conventional power plants and renewable energy power plants. Topics include fuels, boilers, turbines, feedwater heaters, ash removal, condensate, controls, instrumentation, carbon emissions, and monitoring.

RETB 115 - Plant Boilers and Operations  
4  
Prerequisites: MATH 108 and RETB 110 with grades of C or higher. Introduction to boiler operations and types of boilers, including those fired with renewable fuels. Start up and shutdown procedures, monitoring systems, and emergency procedures. Examines the steam cycle in a steam generation plant, auxiliary equipment and maintenance requirements. Includes power plant simulator exercises.
**RENEWABLE ENERGY-SOLAR PV**

**RETS 102 - Introduction to Renewable Energy**  
Prerequisite: ENGL 060 with a grade of C or higher. Introduces concepts of renewable energy and gives an overview of the associated technology. Outlines the basic principles of energy production from solar, wind and biomass systems, and applications in both urban and rural environments. Emphasis is on how renewable energy technologies work and their practical use.

**RETS 106 - Introduction to Solar PV Systems**  
Overview of different types of solar energy technologies, how photovoltaic systems (PV) compare to other systems and the advantages and disadvantages of installing a PV system. Also discussed are the differences between solar power and solar energy and why this is important in solar installations. Evaluation of factors affecting the sun’s apparent position and how solar radiation and climate data are used in sizing and estimating performance for PV systems.

**RETS 110 - Solar PV Site Planning**  
Prerequisites: IEM 102 and RETS 106 with grades of C or higher. Overview of process of determining potential array locations and factors that must be considered and discussed with customers. Examine purposes and functions of components of PV systems and what various energy sources can be interfaced with PV systems. Study includes construction and features of PV modules, current-voltage characteristics and parameters, and how a PV device converts light to electricity.

**RETS 114 - Solar PV System Design**  
Prerequisites: MATH 108 and RETS 110 with grades of C or higher. Determine the system energy and power requirements from a load analysis and how to calculate the critical design parameters based on monthly load and insulation information. Key considerations for integrating arrays on buildings and other structures and how to differentiate between the various types of mounting configurations and their features. Knowledge of electrical codes, regulations and practices applicable to PV systems. Calculate voltage and current limits and how to determine appropriate conductor ampacities and overcurrent protection ratings for various circuits.

**RETS 118 - Solar PV Balance of Systems**  
Prerequisite: RETS 110 with a grade of C or higher. Identify major battery components, functions, discharging and charging characteristics, and differentiate between types and classifications of batteries. Functions and features of charge controllers, charge controller applications, and installation will be covered. Identify basic waveform types and properties and what types are used in PV systems.

**RETS 122 - Solar PV Utility Interconnection**  
Prerequisite: RETS 114 with a grade of C or higher. Identify applicable codes and standards for utility interconnection, how PV systems affect utility operations, and how to differentiate between load-side and supply-side interconnections. Learn the common requirements for permit applications and applicable articles of the National Electrical Code (NEC) for both general electric system requirements and PV-specific requirements.

**RETS 126 - Solar PV Instrumentation and Metrology**  
Prerequisite: RETS 110 with a grade of C or higher. Instrumentation and measurement tools, techniques and methods used in renewable energy production systems will be covered. Types of measurements will include electrical, optical, thermal, physical, chemical, structural, and mechanical. Hands-on training to demonstrate proficiency with various techniques and devices.

**RETS 130 - Practical Solar PV Experience**  
Prerequisite: RETS 122 with a grade of C or higher. Combination of study and hands-on practical applications of the NEC 2008 codes in PV systems. North American Board of Certified Energy Practitioners (NABCEP) certification studies, Occupational Safety and Health Administration (OSHA) training, and practical inspection experience. (3 lecture, 1 lab)

**RETS 134 - Solar PV Commissioning**  
Prerequisite: RETS 130 with a grade of C or higher. Examine steps for commissioning new PV systems, maximizing array output battery health and other operations, troubleshooting PV systems, and developing a maintenance plan based on system configurations, installation and location. Discussed are incentive options, how to calculate present and future costs, and making a comparison of energy-production systems based on total life-cycle costs.

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**STATE FAIR COMMUNITY COLLEGE | 48 | 2018-2020 COURSE CATALOG**
RET 175 - Solar PV Internship  8
Prerequisite: Completion of 30 technical credit hours and consent of program coordinator. Application of work skills in a supervised work environment. Companies that sponsor internships provide the supervision. The college provides general guidance and works with the sponsoring company in developing an outline of the work experiences unique to the site. Designed to provide an opportunity to demonstrate work skills, work ethics and the ability to work with others. In addition to completing the training plan, the student must submit four to eight written technical reports.

SERVICE EDUCATION

SRVE 101 - Emerging Leaders I  1
Prerequisite: Consent of instructor. Provides students with opportunities to develop and enhance a personal philosophy of leadership that includes the understanding of self, others, and community, and acceptance of responsibilities inherent in community membership. Involvement in at least one leadership experience is required for the course. A full list of qualifying experiences is provided to all students who enroll.

SRVE 180 - Problems in Service Learning and Leadership  1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem relating to service learning and leadership under the supervision of an instructor in a related discipline.

SRVE 201 - Emerging Leaders II  1
Prerequisite: Consent of instructor. Continuation of SRVE 101. Provides students with additional opportunities to develop and enhance a personal philosophy of leadership that includes the understanding of self, others, and community, and acceptance of responsibilities inherent in community membership. Involvement in at least one leadership experience is required for the course. A full list of qualifying experiences is provided to all students who enroll.

SOCIOLOGY

SOC 100 - General Sociology  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Introduction to the basic principles, concepts, research strategies, and empirical findings representative of the field today. Explores the relationships of individuals and groups in the context of broader social patterns. Establishes a basis for further study in the field. Course topics may include gender and racial inequality, deviance, economic and political institutions, social mobility, and concepts related to current social and cultural change.

SOC 101 - Social Problems  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Examines objective social conditions that have been defined as social problems. Focuses on gaining factual and theoretical knowledge to build better explanations for the existence and persistence of social problems in light of social controls and democratic values. Explores options for solutions to specific social problems. Topics include racial inequality, gender stratification, poverty, mass media, and education among others.

SOC 102 - Marriage and Family  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Explores the social and historical roots of marriage as both a social institution and an intimate relationship. Examines the sources of and the challenges created by the diversity of family forms. Topics include intimacy, dating and courtship, conflict and communication, singlehood and cohabitation, divorce, and parenting.

SOC 103 - Introduction to Social Work  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Provides background knowledge of the field, an overview of social problems and social services, and methods of social work practice. Topics may include poverty, substance abuse, mental illness, crime, family, education, racism, and sexism among others. Each topic is discussed with an interest in identifying the opportunities for and challenges to effective social work.

SOC 120 - American Diversity  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Overview of global and American diversity resulting from cultural interactions, especially in the areas of art, government, economics, and religion, as well as a historical perspective. Students will gain a greater understanding of diversity from an individual and community perspective.

SOC 180 - Problems in Sociology  1 to 3
Prerequisite: Consent of instructor. Independent study of a special problem in sociology under the supervision of a sociology instructor.

SPANISH

SPAN 101 - Elementary Spanish I  3
Prerequisite: ENGL 070 with a grade of C or higher or equivalent placement scores. Begins the four basic skills of language communication: listening, speaking, reading, and writing. Includes an introduction to the Spanish culture. Concentrates on the present indicative tense with the course conducted primarily in Spanish.

SPAN 102 - Elementary Spanish II  3
Prerequisite: SPAN 101. Concentrates on the preterit and imperfect tenses and reflexive constructions for students to further enhance their ability to listen, speak, read, and write. Course is conducted primarily in Spanish.
**STUDENT SUCCESS**

**SS 090 - Student Orientation**  
0  
Designed to provide interactions with other students, staff and faculty that will help students get a sense of the campus culture and how to conduct business with the college. Emphasis is on assisting students with understanding how to use the different online elements. This is not a gradable course.

**SS 104 - College Skills**  
3  
Designed to enhance the college learning experience and prepare students for personal and professional success. Concepts presented include time management, managing change, setting and achieving goals, and thinking in ways to create success. Note taking, library research, test taking, and study skills are also included. This course will include an eight-hour service learning project.

**SS 108 - Career Choice**  
1  
Designed to guide students who may be undecided about a college major or related career plans. Emphasis upon making connections between self and the world of work and between academic and career planning.

**SS 114 - Computer Skills for College**  
2  
Designed to build a foundation of basic computer skills necessary to be successful within an educational setting. Topics include basic computer functions and functional navigation and practical application of Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Internet, email, mySTAR, and SFCC Online.

**SS 120 - Employment Strategies**  
1  
Designed to help students develop employment search skills and career growth potential.

**SS 125 - Leadership through Cultural Experiences**  
3  
Prerequisite: Consent of instructor. Spring semester only. Students practice various leadership themes and principles to foster interaction in a global society.

**THEATRE**

**THEA 107 - Introduction to Theatre**  
3  
Introductory hands-on course where students examine the major contributors to the theatrical event: the director, actor, scene designer, and lighting designer. Students will be required to see at least two live theatre productions for which admission may be charged.

**THEA 110 - Stagecraft and Lighting**  
3  
Basics of set construction, painting, scene design, lighting design, and wood shop safety. Students will be required to spend 30 clock hours outside classroom time with direct involvement in operation of specialized theatre equipment. Required course for speech and theatre majors and minors.

**THEA 111 - Acting I**  
3  
Intensive study of the techniques of acting with concentration on bodily movement, balance, diction, voice, and characterization.

**THEA 113 - Oral Interpretation**  
3  
Includes development of the voice as an instrument of expression and analysis and performance of basic interpretive material and forms of literature.

**THEA 115 - Theatre Practicum**  
1 to 2  
Includes student participation in plays, either in performance or backstage work. No more than four credit hours of Theatre Practicum may be applied toward an Associate of Arts degree.

**THEA 119 - Stage Makeup**  
3  
Provides a hands-on look at stage makeup. Students will learn the basics of corrective, old age, effects makeup, and what is required in creating a character.

**THEA 122 - Costume Construction**  
3  
Course intends to introduce the student to the field of costume technology through the practical experience in the execution of theatrical costume techniques, basic sewing skills and costume crew.

**THEA 125 - Theatre History**  
3  
Introductory examination of theatre as a living and viable artistic medium. Course examines the historical development of the audience; dramatic literature and structure; and the role of the actors, directors, designers, and technicians.

**THEA 128 - Introduction to Theatre Design**  
3  
Students taking this course will be given the opportunity to identify, analyze and implement the elements of successful theatrical design. In addition, students will be given the opportunity to learn how to evaluate their own personal reactions to a given aesthetic. Students are expected to discuss designs from local shows they see.

**THEA 131 - Script Analysis**  
3  
The purpose of script analysis is to examine various methods of analyzing play scripts for performance. Specific emphasis will be placed on the working environment of the actor, director and designer in examining how a script is produced for a public performance. The course is designed to help students develop tools for use in their profession, not to survey the history of dramatic literature.

**THEA 134 - Stage Voice and Movement**  
3  
A survey and practice of multiple theatre movement and voice theories designed to develop student awareness and skill related to the body’s expressive potential.

**THEA 180 - Problems in Theatre**  
1 to 3  
Prerequisite: Consent of instructor. Independent study of a special problem in speech or theatre under the supervision of a fine arts instructor.
THEA 190 - Theatre Capstone
Prerequisite: Consent of program coordinator. This class is designed to put all the things that students have learned together, so they will be prepared for the college or university to which they transfer. Acting students will have to have two monologues ready to perform, and technical students will have to create a portfolio.

TRIO SKILLS

TSKL 101 - TRiO Skills I
Prerequisite: Consent of TRiO STEPS advisor. Designed to assist incoming freshmen with basic skills needed to orient them to college and necessary for academic success. Emphasis upon basic computer skills, study skills, research skills, critical thinking skills, financial management skills, life skills, confidence building, and career exploration. Course is restricted to students who have been officially accepted into the TRiO STEPS program at SFCC.

TSKL 102 - TRiO Skills II
Prerequisite: Consent of TRiO STEPS advisor. Continuation of TSKL 101. Aimed at assisting TRiO STEPS students who have completed basic skills courses and have moved on to college-level courses. Topics include study skills, research skills, critical thinking skills, financial management skills, time management, life skills, confidence building, and career exploration. Course is restricted to students who have been officially accepted into the TRIO STEPS program at SFCC.

TSKL 103 - TRiO Skills III
Prerequisite: Consent of TRIO STEPS advisor. Continuation of TSKL 102. This TRIO STEPS course will focus on life skills and personal enrichment. Covers topics such as fiscal management, job skills, résumé writing, maintaining physical and emotional health, conflict resolution, and stress management. Course is restricted to students who have been officially accepted into the TRIO STEPS program at SFCC.

TSKL 104 - TRiO Skills IV
Prerequisite: Consent of TRIO STEPS advisor. Designed to assist students who are participants in the TRIO STEPS program who are in their final year at SFCC complete the activities required for graduation and to assist them in transferring to the four-year college of their choice. Students in this course will be assisted in completing applications to four-year colleges and in applying for scholarships and financial aid at their transfer institutions. Students will also be assisted in planning financially for completing their baccalaureate degrees, including calculations of manageable student debt load. Campus visits to four-year colleges are provided free of charge to students in the STEPS program. Course is restricted to students who have been officially accepted into the TRIO STEPS program at SFCC.

WEB DEVELOPMENT

WEB 103 - Introduction to Web Development
Students will learn the basic skills and technology for creating basic web pages, the usage of hypertext markup language 5 (HTML5), designing simple applications for Android devices, and additional web design tools.

WEB 114 - Web Scripting
The use and implementation of client-side scripting languages to create interactive web-based applications. Content will include using JavaScript, VBScript and other scripting languages as appropriate for creating dynamic web applications.

WEB 116 - Web Development
Provides enhanced instruction in the concepts, issues and techniques related to designing, developing and deploying websites. Instruction includes, but is not limited to, learning about HTML5, HTML5, basic JavaScript, extensible markup language (XML), importing external videos, and cascading style sheets (CSS). The use of learning how to create sites both manually and through the use of website development software will be taught.

WEB 117 - Advanced Web Development
Prerequisite: WEB 116 with a grade of C or higher. Course gives instruction in the creation of dynamic web pages through a variety of formats. These methods may include, but are not limited to, hypertext preprocessor (PHP), structured query language (MySQL), active server pages (ASP), extensible markup language (XML), ColdFusion, and file transfer protocol (FTP).

WEB 118 - Digital Imaging
Provides extensive instruction in the creation and manipulation of images through the software package Adobe Photoshop. Course is aimed at the Photoshop beginner who wants to create sophisticated graphics for both print and web. Special emphasis on tools, selections, masking, photo treatment and design will be discussed.

WEB 120 - XML
Instruction includes learning to use and implement XML standards in web page creation. XML is a language for storing and delivering information on the web. Basic concepts of XML along with delivery methods for developing dynamic HTML documents that maximize the use of browser capabilities will be taught.

WEB 130 - Media Productions
Students will learn to create multimedia presentation videos and to edit videos as well as authoring, interfacing and implementing the fundamentals of video production.
WEB 160 - Portfolio Design  3
Instruction in designing a professional, informative and effective DVD portfolio that highlights the experience and knowledge gained from courses taken at SFCC. Design focuses on, but is not limited to, projects created in the CIS and WEB program courses. This DVD portfolio will be used so prospective employers can gain a better understanding of the student's technical skills and the subject matter learned.

WEB 175 - Web Development Internship  4
Prerequisite: Consent of program coordinator. Provides on-the-job work experience in web development. Supervised and evaluated by the instructor.

WELDING

WELD 101 - Introduction to Welding  4
Basic course beginning with instruction in the technical knowledge and skills required for oxyacetylene cutting, plasma arc cutting, shielded metal arc welding, flux core arc welding, and gas metal arc welding. A minimum of two lecture hours per week will include subjects such as safety, metallurgy, welding equipment, and other technical knowledge applicable to the welding industry. (1 lecture, 3 lab)

WELD 102 - Structural Welding  4
Prerequisite: WELD 101. Basic course using the American Welding Society (AWS) D1.1 Structural Welding Code with AWS welder qualifications included. Course includes out of position welding on plate with the shielded metal arc welding, flux core arc welding and gas metal arc welding processes. The computer numerically controlled (CNC) plasma arc cutting process is introduced. (1 lecture, 3 lab)

WELD 103 - Pipe Welding  4
Prerequisite: WELD 102. Advanced technical welding course utilizing the American Society of Mechanical Engineers Section (ASME) 9 code for pipe welding with ASME welder qualification included. The course of study is the welding of pipe, using the shielded metal arc process in all positions. (1 lecture, 3 lab)

WELD 104 - TIG Welding  4
Prerequisite: WELD 101 with a grade of B or higher or WELD 102 with a grade of C or higher. Advanced technical welding course structured primarily for specialized welding operations requiring a high degree of skill. Students will study the use of gas tungsten arc welding of ferrous and nonferrous metals in all positions according to the applicable code. (1 lecture, 3 lab)

WELD 105 - Advanced Pipe Welding  4
Prerequisites: WELD 103 with a grade of C or higher and WELD 104. Corequisite: WELD 104. Course will utilize the gas tungsten arc welding (GTAW also known as TIG) process for joining pipe. ASME Section 9 will be the governing code with welder qualifications available for the successful student. (1 lecture, 3 lab)

WELD 114 - Structural Layout and Fabrication  3
Topics include whole numbers, number systems, dimensions, measurement, fractions, volume, weight, precision, accuracy, and percentages. In addition to teaching basic math concepts, the problems will give students a preview of the types of welding-related situations they will face in a work environment. Students will develop solid troubleshooting skills that will serve them throughout their careers as welders. (1 lecture, 2 lab)

WELD 116 - Print Reading for Welders  3
Study of symbols including AWS and ISO industry standards, measurement systems, terminology, and prints and diagrams associated with work performed by welders in the welding industry. Course includes reading basics, prints, math and measurements, welding processes, types of welds and joints, welding symbols, shop drawings, assembly drawings, detail drawings, auxiliary views, detail views, projections, and sections.

WELD 160 - Welding Fabrication  4
Prerequisites: WELD 102, WELD 116 and WELD 114 or MATH 107 or equivalent placement score. An advanced, comprehensive class designed to put the skills obtained in the areas of welding, print reading, layout, and shapes to practical use and provide additional instruction on welding fabrication, weldments, and fixtures. Upon completion students will be able to fabricate a metal weldment using layout methods, prints and a weldment fixture. (1 lecture, 3 lab)

WELD 165 - CNC Plasma Cutting  3
Prerequisite: EDT 111 with a grade of C or higher. Students will be introduced to basic numerical control software and programming. Students will write several programs and use computer aided drafting (CAD) to communicate with the plasma cutting system. Students will program and cut two-dimensional parts and learn how to troubleshoot the equipment for problems.

WELD 180 - Problems in Welding  1 to 8
Prerequisite: Consent of program coordinator. Independent study of a special problem in welding under the supervision of a welding instructor.
WELLNESS

WELL 116 - Building Fitness for Life I  1
Course offers a comprehensive plan for utilizing fitness training as a means to lifetime wellness. Students explore nutritional needs, stress management and prevention of disease. Course will fulfill the wellness requirement.

WELL 117 - Building Fitness for Life II  1
Prerequisite: WELL 116. Course expands the student’s knowledge and ability to develop a comprehensive plan of lifetime wellness utilizing fitness training. Course will fulfill the wellness requirement.

WELL 118 - Aerobics  .5 to 1
Complete fitness program designed to combine exercise and fun. Course will fulfill the wellness requirement.

WELL 119 - Low Impact Aerobics  1 to 1.5
Fitness program designed for anyone who wants to minimize the risk of injury but still enjoy an aerobic workout. Course will fulfill the wellness requirement.

WELL 121 - Women and Health  1
Designed to provide students with the tools to improve a woman’s health status. Historical trends in health care regarding women are discussed as well as methods for facilitating change. Personal choices and their effects on health and wellbeing are identified. Topics include, but are not limited to, reproductive and gynecological concerns, nutrition, exercise, weight loss, bone health, women’s concerns, heart disease, sexuality, and abuse. Course will fulfill the wellness requirement.

WELL 122 - Applied Wellness  1
A different type of physical education activity course that can be enjoyed by any or all students regardless of age or physical condition. Designed to provide students with theoretical and practical experiences focusing on the relationship of lifestyle to productivity and quality of life. Course will fulfill the wellness requirement.