

# Course Descriptions

## ACCOUNTING

### ACCT 2000 SPECIAL TOPICS

*Prerequisite: ACCT 2113 and by evaluation. §*

**VARIABLE 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other accounting courses, but which are beneficial in providing a better understanding of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change in subject matter.

### ACCT 2113 ACCOUNTING I/FINANCIAL

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** Students will demonstrate an understanding of basic accounting concepts, theories, and procedures and their effects on the financial reporting and analysis of a business.

### ACCT 2123 ACCOUNTING II/MANAGERIAL

*Prerequisite: ACCT 2113*

**3 CREDITS** A continuation of ACCT 2113. Students will demonstrate an understanding of managerial accounting concepts by properly classifying basic cost elements, allocating these costs to the manufacturing processes of a product, performing cost-volume-profit analysis, preparing operating and capital budgets, analyzing the decision-making process, and making business decisions.

### ACCT 2213 COMPUTERIZED ACCOUNTING

*Prerequisite: ACCT 2113*

**3 CREDITS** This course is designed for students who are seeking an Associate in Applied Science in Business-Accounting Option. It is also a required or elective course in some technical programs at Oklahoma City Community College. It generally will not transfer to four-year public colleges or universities. Students will demonstrate the use of the computer to complete accounting problems relating to general ledger entries, voucher systems, fixed assets, payroll, partnerships and corporations, financial statement analysis, and departmentalized accounting.

*Note: (This course is generally offered in the fall semester only.)*

*Note: This course satisfies the computer proficiency requirement.*

### ACCT 2303 COST ACCOUNTING

*Prerequisite: ACCT 2123*

**3 CREDITS** This course is designed for students who are seeking an Associate in Applied Science in Business-Accounting Option. It generally will not transfer to four-year public colleges or universities. Students will demonstrate their understanding of concepts of cost accounting by (1) properly classifying basic cost elements, (2) applying the cost principles and procedures involved in job order and process costing, (3) demonstrating the use of a standard cost system to include the computation of variances, and (4) using cost analysis in management decision making.

*Note: (This course is generally offered in the spring semester only.)*

### ACCT 2403 INCOME TAX ACCOUNTING

*Prerequisite: ACCT 2113*

**3 CREDITS** This course is designed for students seeking an Associate in Applied Science in Business-Accounting Option. It generally will not transfer to four-year public colleges or universities. Students will demonstrate their understanding of concepts of federal income taxation of individuals by (1) determining gross income, (2) identifying and computing allowable deductions for and from adjusted gross income, (3) computing the tax liability, and (4) performing tax research using a comprehensive tax library.

*Note: (This course is generally offered in the fall semester only.)*

### ACCT 2603 INTERMEDIATE ACCOUNTING I

*Prerequisite: ACCT 2123*

**3 CREDITS** This course is designed for students who are seeking an Associate in Applied Science in Business-Accounting Option. It generally will not transfer to four-year public colleges or universities. Students will demonstrate their understanding of concepts of advanced principles of accounting relating to the accounting process, assets, and the time value of money.

*Note: (This course is generally offered in the fall semester only.)*

### ACCT 2703 INTERMEDIATE ACCOUNTING II

*Prerequisite: ACCT 2603*

**3 CREDITS** This course is designed for students who are seeking an Associate in Applied Science in Business-Accounting Option. It generally will not transfer to four-year public colleges or universities. Students will demonstrate their understanding of generally accepted accounting principles related to liabilities, stockholders' equity, correction of errors, cash flow reporting and financial statement analysis.

*Note: (This course is generally offered in the spring semester only.)*

## ADMINISTRATIVE OFFICE TECHNOLOGY

### AOT 1000 SPECIAL TOPICS

*Prerequisite: (R)*

**VARIABLE 1-4 CREDITS** This is a study of a variety of topics in which the student will be exposed to such topics as preparing for a career in the secretarial area, assessing the job market, etc. The course may be repeated with a change of topic.

### AOT 1113 COMPUTER KEYBOARDING

*Prerequisite: (R) (W)*

**3 CREDITS** The student will master the keyboard by touch and begin development of acceptable speed and accuracy levels on the alphabetic and alphanumeric keyboard and the ten-key number pad. Formatting of basic documents is also included.

*Note: This course satisfies the computer proficiency requirement.*

### AOT 1123 SHORTHAND I

*Prerequisite: (R)*

**3 CREDITS** The student will master the correct theory and principles of Gregg shorthand, read at specified speeds, and write correct shorthand outlines.

### AOT 1223 SHORTHAND II

*Prerequisite: (R), AOT 1123 or by evaluation. §*

**3 CREDITS** The student will review the theory of Gregg Shorthand, take dictation for three minutes at specified speeds and will transcribe shorthand notes accurately using the microcomputer.

### AOT 1713 BEGINNING WORD PROCESSING APPLICATIONS

*Prerequisite: (R) (W)*

**3 CREDITS** Students will use microcomputer word processing software to create, modify, store, retrieve, and print documents. Word processing features include create, edit, print, format, spell-check, thesaurus, file management, find/replace and tables. This course is an introduction and overview with the emphasis being on learning and applying the mechanics of the software.

*Note: This course satisfies the computer proficiency requirement.*

### AOT 1813 LEGAL OFFICE PROCEDURES

*Prerequisite: None*

**3 CREDITS** This is an introductory course which provides the student with an overview of the legal secretarial profession and the various aspects of the law office. Emphasis is placed on developing the skills and aptitudes for a professional legal secretary, court structure, ethics, writing and research.

*Note: (This course is generally offered fall only.)*

### AOT 2000 SPECIAL TOPICS

*Prerequisite: (R)*

**VARIABLE 1-4 CREDITS** The student will demonstrate competencies in selected topics in the secretarial field. Each course will focus on a specific area related to special equipment, procedures, and functions. May be repeated with a change of topic.

## **AOT 2013 LEGAL BILLING**

*Prerequisite: (R) (W) or by evaluation. §*

**3 CREDITS** Students will use the microcomputer to produce billing documents with emphasis on legal vocabulary, proofreading, editing, transcription, and decision making skills. Appropriate industry standard software programs will be used. Lecture/Lab.

*Note: (This course is generally offered fall only.)*

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2039 MEDICAL CODING**

*Prerequisite: (R) (W), BIO 1314, Minimum "C" grade in course*

**9 CREDIT HOURS** The student will be able to correctly enter international classification of diseases (ICD) codes on a claim form, identify current procedural terminology (CPT), and explain their application to a medical office. The student will also identify various insurance plans, learn the rules and regulations of Medicare filing, translate written documentation into a numerical language, and describe legal issues concerning medical records.

## **AOT 2143 ADMINISTRATIVE OFFICE SYSTEMS**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is designed to emphasize the management procedures of various office environments. Topics include ethics, employer-employee relations, layout and space design, work simplification, cost control, human relations, office personnel policies and business information systems.

*Note: (This course is generally offered spring only.)*

## **AOT 2253 MEDICAL OFFICE PROCEDURES**

*Prerequisite: (R) (W), AHP 1013, AOT 1713 with a minimum grade of "C" or better*

**3 CREDITS** This course provides a realistic approach for students to learn the skills required in a medical office including communications, records management, telecommunications, billing, scheduling, and terminology.

## **AOT 2313 INTERMEDIATE WORD PROCESSING APPLICATIONS**

*Prerequisite: (R) (W), AOT 1713 or by evaluation. §*

**3 CREDITS** Students will extend basic word processing knowledge and skill to include proficiency in producing office correspondence. Emphasis will be on formatting, proofreading, using advanced features of word processing software, and increasing production speed.

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2323 LEGAL TERMINOLOGY AND MACHINE TRANSCRIPTION**

*Prerequisite: (R) (W), AOT 1113, AOT 1713 or by evaluation. §*

**3 CREDITS** The student will correctly spell, transcribe, and define terms commonly used in the legal field.

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2413 MEDICAL MACHINE TRANSCRIPTION**

*Prerequisite: (R) (W), AHP 1013, AOT 1113 and AOT 1713 or by evaluation. §*

**3 CREDITS** The student will correctly transcribe medical documents including admissions and physicals, operative reports, pathology reports, discharge summaries, radiology reports, and requests for consultation reports. The student will be able to describe the knowledge, skills, and abilities required of a medical transcriptionist.

## **AOT 2443 ADMINISTRATIVE OFFICE PROCEDURES**

*Prerequisite: Corequisite: (R) (W), AOT 2313, AOT 2553 or by evaluation. §*

**3 CREDITS** The student will study ethics, traits, duties, attitudes and responsibilities of a professional secretary. Students will use the microcomputer to produce mailable documents, travel itineraries, minutes of meetings, and various other office documents with emphasis on vocabulary, proofreading, editing, and decision making skills. Lecture/Lab.

## **AOT 2453 OFFICE INFORMATION PROCESSING**

*Prerequisite: Corequisite: (R) (W), AOT 2313 or by evaluation. §*

**3 CREDITS** Students will use the microcomputer to produce mailable documents with emphasis on business vocabulary, proofreading, editing, transcription, and decision making skills. Managerial dictation techniques will be introduced. Lecture/Lab.

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2463 APPLIED GRAPHICS WITH DESKTOP PUBLISHING**

*Prerequisite: (R) (W), AOT 2313 or by evaluation. §*

**3 CREDITS** This course is an introduction to the use of computer-generated pictures, charts, and graphs. Students will complete a variety of documents such as flyers, brochures, newsletters, and business cards using industry standard desktop publishing software, graphics, and effective design conventions. This course will assist students in producing documents that communicate effectively through good design and application of basic concepts of desktop publishing.

*Note: (This course is generally offered spring only.)*

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2473 OFFICE/ACCOUNTING SPREADSHEET APPLICATIONS**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is designed for Administrative Office Technology and Accounting majors. The student will develop ten-key by touch skills. Students will format spreadsheets using effective design principles, enter common spreadsheet formulas and functions, sort data, and use graphic/chart features to solve business problems. Appropriate industry standard spreadsheet software programs will be used.

*Note: This course satisfies the computer proficiency requirement.*

## **AOT 2553 AUTOMATED RECORDS MANAGEMENT**

*Prerequisite: (R) (W), AOT 1713, AOT 2473*

**3 CREDITS** Utilizing simulated office records, the student will use correct records-management techniques in the creation, storage and disposition of materials in a variety of business situations. The course will involve the study and practice of various filing methods integrating the use of the computer to control and manage a file system.

*Note: (This course is generally offered fall only.)*

## **AOT 2663 CAREER EDUCATION/INTERNSHIP**

*Prerequisite: (R) (W) 9 credits of AOT course work with a "C" or better and by evaluation*

**VARIABLE 1-3 CREDITS** This course will assist students in earning academic credit in a planned process that integrates academic preparation with supervised work experience. Students will work in an approved office environment with cooperating employers for a specified period of time and will attend arranged lectures relating to a variety of business-related topics. The course may be repeated to a maximum of 6 credit hours with the consent of the instructor.

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## **ALLIED HEALTH**

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### **AHP 1000 SPECIAL TOPICS**

*Prerequisite: (R)*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other Allied Health courses, but which are beneficial in providing a better understanding of health. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

### **AHP 1013 MEDICAL TERMINOLOGY**

*Prerequisite: (R)*

**3 CREDITS** After studying the root words, prefixes, and suffixes from which medical terms evolve, the student will correctly spell medical terms, define terms commonly used in medical fields, and determine the meaning of unfamiliar medical terms.

**AHP 2000 SPECIAL TOPICS***Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other Allied Health courses, but which are beneficial in providing a better understanding of health or health care. A specific subject will be announced for each offering. Enrollment may be repeated with a change of topic.

**APPLIED MATHEMATICS****APPM 1223 MATHEMATICS FOR TECHNICAL CAREERS I***Prerequisite: (R), MATH 0103 or adequate math placement test score.*

**3 CREDITS** The student will apply principles of basic algebra, equations, functions and graphs, factoring, and fractions in the solutions of technical problems.

*Note: This course is intended only for certain majors leading to an Associate in Applied Science (Technical-Occupational) degree.*

**APPM 1233 MATHEMATICS FOR TECHNICAL CAREERS II***Prerequisite: (R), APPM 1223*

**3 CREDITS** The student will apply the systems of equations, exponents and radicals, quadratic equations, ratio and proportion, exponential and logarithmic functions, and trigonometry and geometry in the solution of technical problems.

*Note: This course is intended only for certain majors leading to an Associate in Applied Science (Technical-Occupational) degree.*

**APPM 1313 MATHEMATICS FOR HEALTH CAREERS***Prerequisite: (R), MATH 0103 or adequate math placement test score.*

**3 CREDITS** The student will convert units of measure within and among the metric, apothecary, and avoirdupois systems of measurement; solve pharmacology problems; apply algebraic concepts to signed numbers, formulas, and graphs; and use statistical software to analyze data with descriptive statistics and linear regression.

*Note: This course is intended only for certain majors leading to an Associate in Applied Science (Technical-Occupational) degree.*

*Note: This course satisfies the computer proficiency requirement.*

**ART****ART 1000 SPECIAL TOPICS IN VISUAL ART***Prerequisite: (R)*

**VARIABLE 1-6 CREDITS** The student will produce examples of the specific topic in art with which the course content is concerned. A specific topic beyond the topics offered in other art courses will be designated for each offering. Examples of topics include Basic Watercolor, Calligraphy, and Weaving. This course may be repeated with a change in subject matter.

**ART 1013 ART HISTORY SURVEY I***Prerequisite: (R) (W)*

**3 CREDITS** Art History Survey I is a study of the arts, artists and their cultures from Prehistoric through the Early Renaissance. The student will analyze the artistic styles and identify visually the style, its time, its characteristics and the artists important to that period. The student also will analyze the social and art issues which led to the development and evolution of art styles throughout history.

**ART 1023 ART HISTORY SURVEY II***Prerequisite: (R) (W)*

**3 CREDITS** Art History Survey II is a study of the visual arts, artists and their cultures from the Early Renaissance to the present. The student will analyze artistic styles and identify visually the style, its time, its characteristics and the artists important to that period. The student also will analyze the social and art issues which led to the development and evolution of art styles throughout history.

**ART 1053 ART APPRECIATION***Prerequisite: (R) (W)*

**3 CREDITS** After studying art pieces representative of a variety of art forms from different time periods and cultures, the student will identify and describe

each of these forms. Students will analyze art and make aesthetic judgments in writing about how the piece reflects human values and cultural traditions.

**ART 1123 DRAWING I***Prerequisite: (R)*

**3 CREDITS** Drawing I will develop the students understanding of the basic concepts of drawing and their powers of observation. Students will work with various media utilizing a variety of sources and environments.

**ART 1183 COMPUTER DRAWING: ILLUSTRATOR***Prerequisite: (R)*

**3 CREDITS** Students will demonstrate knowledge of vector illustration techniques using Adobe Illustrator software. Students will also create and edit graphic objects and type, select various menu commands, and use keyboard shortcuts.

*Note: This course satisfies the computer proficiency requirement.*

**ART 1190 MOSAICS***Prerequisite: (R)*

**VARIABLE 1-3 CREDITS** The student will demonstrate understanding of basic design and proficiency in techniques for creating mosaics, consistent with materials to be used. The student also will select proper materials, cut materials, position and adhere materials, transfer designs, produce porcelain tile and proper mortar mixes for interior and exterior mosaics. Course may be repeated for up to three credit hours.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

**ART 1203 FIGURE DRAWING***Prerequisite: ART 1123*

**3 CREDITS** Figure Drawing includes study in gesture and finished drawings of the draped and undraped model. Emphasis will be placed on pose, composition and a variety of media. The students' drawings will demonstrate the movement, rhythm, simplicity, gesture and unique character of each model through a series of basic methods of construction ranging from quick sketches to completed drawings.

**ART 1213 FOUNDATIONS I: DESIGN AND COLOR***Prerequisite: (R)*

**3 CREDITS** The student will learn to recognize, analyze and apply the elements and principles of 2D design and color in the pictorial arts by studying design and color theory.

**ART 1233 DRAWING II***Prerequisite: ART 1123*

**3 CREDITS** Drawing II will continue to develop the students' understanding of the concepts of drawing. Students will continue to develop their skills in media by using a variety of sources and environments. They will demonstrate the proper application of advanced linear perspective, the depiction of complicated shapes and figures as well as the ability to convey emotion.

**ART 1243 FOUNDATIONS II: 3D DESIGN***Prerequisite: ART 1213*

**3 CREDITS** The student will compare, evaluate, and analyze three-dimensional visual art forms. By using a variety of materials and processes, the student will complete a series of studio assignments to demonstrate basic technical ability and an understanding and appreciation of the interaction of form in space and ways to manipulate it. Readings, writings, and participation in a coursework exhibition are required.

**ART 1363 MULTIMEDIA**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CS 1103 or by evaluation. §*

**3 CREDITS** Students will use selected application software to develop presentation graphics. This will include the creation, importation, modification, and sequencing of still and motion graphics. Digital audio will be created, edited and synchronized to the presentations.

*Note: This course satisfies the computer proficiency requirement.*

## **ART 2000 SPECIAL TOPICS IN VISUAL ART**

*Prerequisite: (R) (W)*

**VARIABLE 1-6 CREDITS** The student will demonstrate specified competencies in subjects not included in other Visual Arts courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change in topic.

## **ART 2013 PAINTING I**

*Prerequisite: (R)*

**3 CREDITS** Painting I will develop skills in opaque painting, stressing form and content, visual appreciation and individual expression. After an introduction to the different methods of mixing and applying paint, the student will study various styles and techniques of painting.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2133 SERIGRAPHY I (SILK SCREEN-PRINTING)**

*Prerequisite: (R)*

**3 CREDITS** Serigraphy I introduces the student to both hand and photo stencil and screen print methods. Each student will produce a body of work exploring the image-making potential of screen printing techniques on paper and T-shirts. Strong emphasis will be placed on exploring color, design, and personal creativity.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2143 CERAMICS I**

*Prerequisite: (R)*

**3 CREDITS** Ceramics I covers a variety of building techniques, glazing and ceramics terminology. The student will construct pieces of clay-formed pottery using slab, coil, wheel and other methods of construction.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2183 PAINTING II**

*Prerequisite: ART 2013*

**3 CREDITS** Painting II will continue to develop the students' skills in opaque painting. The course will continue to stress form and content, visual appreciation and individual expression.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2190 ADVANCED MOSAICS**

*Prerequisite: (R), ART 1190*

**VARIABLE 1-3 CREDITS** The student will demonstrate understanding of advanced mosaic design and proficiency in techniques for creating mosaics. The advanced student will assist the instructor with firing tile, rendering drawings (enlarging cartoons), and assisting with mosaics projects. Course may be repeated for up to three credit hours.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2233 SERIGRAPHY II (ADVANCED SILK SCREENPRINTING)**

*Prerequisite: ART 2133*

**3 CREDITS** Serigraphy II involves advanced studies in utilizing screen-printing techniques. Students will produce a body of work that emphasizes the exploration of color, design, and personal creativity.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2263 CERAMICS II**

*Prerequisite: ART 2143*

**3 CREDITS** Ceramics II continues to develop the students' skills in a variety of ceramic techniques. Students will continue to develop their glazing and knowledge of ceramics and its terminology. They will mix their own clay and construct clay pieces using the coil, pinch, wheel, slab and mold methods of construction. They

will demonstrate various firing techniques such as raku, sawdust and dung. They will test various pottery glazes and assist in firing pottery in a kiln.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **ART 2373 GRAPHIC ARTS ILLUSTRATION**

*Prerequisite: (R), ART 1123 or by evaluation. §*

**3 CREDITS** The student will learn about and produce illustrations using a variety of techniques and media. Types of illustrations produced include pencil, ink, markers, scratchboard, colored pencil and mixed media. Work will be accomplished to conform to professional standards in the graphic arts industry.

## **ART 2533 3D RENDERING AND DESIGN VISUALIZATION**

*Prerequisite: (R) Math 0103 or adequate math placement test score.*

**3 CREDITS** The student aspiring to become an artist, designer or other professional using 3D computer graphics will be able to create, generate or integrate 3D computer graphics. The student will demonstrate a fundamental understanding of how the computer can be used to create 3D computer renderings. These renderings could be related to either technical design, fine art or applied art. Emphasis will be on using application software (primarily 3D modeling and rendering programs) in the development of modeling logos, 3D scenes, textures, lighting, atmosphere effects, and basic animation.

*Note: This course satisfies the computer proficiency requirement.*

## **ART 2573 DIGITAL PAINTING**

*Prerequisite: (R)*

**3 CREDITS** The student will be introduced to the art media and form of digital imaging. Students will use raster and vector based drawing, painting, and image-editing software applications to create expressive images. Participants will use digital drawing tables, scan their sketches and photographs into a variety of computer programs and manipulate them digitally to create works of art. They will blend colors using digital and traditional color theory.

*Note: This course satisfies the computer proficiency requirement.*

## **ART 2633 3D ANIMATION AND SPECIAL EFFECTS**

*Prerequisite: (R) Math 0103 or adequate math placement test score, ART 2533 or by evaluation. §*

**3 CREDITS** The student will be able to use professional techniques to create photo realistic renderings, advanced physical based and character animations, interactive Media and Web development, 3D gaming and 3D virtual environments. This course will enhance the abilities of artists, designers and other professionals using 3D computer created, generated, or integrated graphics. Emphasis will be on the development of professional techniques in the area of 3D computer graphics. This course is the second course in the field of 3D computer graphics for technical design, fine art or applied art professionals.

*Note: This course satisfies the computer proficiency requirement.*

## **ART 2643 VIDEO PRODUCTION**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will use video production techniques to produce, edit and direct program materials of broadcast quality. Extensive laboratory work is required.

## **ART 2700 INTERNSHIP**

*Prerequisite: All required major courses, ART 1013, ART 1023*

**VARIABLE 1-3 CREDITS** The student will work with professional practitioners in areas such as art galleries and museums, art libraries, fine arts studios, film/video studios, art therapy practices, animation studios, photography studios, etc. The internship course is designed to help students explore their interests, obtain practical experience, and prepare for a career in Visual Arts.

## **ART 2821 PORTFOLIO DEVELOPMENT AND PRESENTATION**

*Prerequisite: All required major courses, ART 1013, ART 1023*

**1 CREDIT** The student and instructor will make a critical analysis of the student's work done over the duration of the program to identify any deficiencies. The student will address any deficiencies and develop a portfolio. The portfolio will

present works of art in a professional format, either framed, matted, as slides, or in digital form, whichever is most appropriate to the student's area of concentration. The student will also write a well developed artist's statement.

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## ASTRONOMY

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### ASTR 1504 GENERAL ASTRONOMY

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** This course will fulfill the general education requirement for Physical Science (without laboratory). The student will be introduced to modern astronomy. Concepts to be studied include the solar system, the sun and stars, galaxies (including the Milky Way Galaxy), and current theories of the origin, evolution, and fate of the universe.

*GenEd Requirement*

### ASTR 1514 GENERAL ASTRONOMY WITH LAB

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** This course will fulfill the general education requirement for Physical Science (with laboratory). The student will be introduced to modern astronomy. Concepts to be studied include the solar system, the sun and stars, galaxies (including the Milky Way Galaxy), and current theories of the origin, evolution, and fate of the universe. Laboratory exercises will explore basic physical principles related to Astronomy as well as activities with specific astronomical applications.

*GenEd Requirement*

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## AUTOMOTIVE TECHNOLOGY

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### AT 1000 SPECIAL TOPICS

*Prerequisite: None*

**VARIABLE 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other automotive courses, but which benefit students wanting additional training in the field or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### AT 1013 AUTOMOTIVE STUDENT SUCCESS INITIATIVE

*Prerequisite: None*

**3 CREDITS** Students will participate in four disciplines designed to prepare students to be successful in automotive programs requiring internships. Students will be required to complete the Automotive Safety, Job Interview Skills, Mentoring, and Introduction to Electricity courses. The student must successfully complete the safety course consisting of specific automotive related safety issues as well as those specific to Oklahoma City Community College. The student will continue with a Job Interview Skills course consisting of writing a resume and how to conduct a successful interview, with a mock video taped interview being required. The student will also complete the Mentoring program with both student and sponsoring dealership personnel participating. The student will finally complete an Introduction to Electricity course to ensure basic concepts and abilities are present to ensure entry level skills are present when the student begins the Automotive Program. This course is a prerequisite for all automotive courses in programs requiring an internship.

### AT 1204 A.S.E. ENGINE PERFORMANCE

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** The student will discuss and demonstrate general engine diagnostic procedures. Additionally, the student will demonstrate specific competencies in the diagnosis and repair of ignition systems, fuel, air induction systems, and exhaust systems, emission control systems, and engine electronic systems.

### AT 1214 A.S.E. ENGINE REPAIR

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** The student will discuss and demonstrate competencies in general engine diagnosis and in cylinder head, valve train, engine block diagnosis and repair, as well as lubrication, cooling, fuel, exhaust, ignition, battery and starting system diagnostic and repair procedures.

### AT 1224 A.S.E. SUSPENSION AND STEERING

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** This course is an application of basic competencies in steering systems, suspension systems and wheel alignment diagnosis, adjustment and repair. The student will further discuss and demonstrate an understanding of wheel and tire diagnosis and repair.

### AT 1244 A.S.E. BRAKES

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** This course is an application of specific competencies in hydraulic system, drum brake system, disc brake system diagnosis and repair procedures. Also, the student will discuss and demonstrate competencies in power assist unit diagnosis and repair as well as wheel bearing, parking brake circuit and associated electrical circuit diagnosis and repair, which includes ABS systems.

### AT 1304 GM ENGINE REPAIR

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required*

**4 CREDITS** The student will discuss and demonstrate competencies in general engine diagnosis and in cylinder head, valve train, engine block diagnosis and repair, as well as lubrication, cooling, fuel, exhaust, ignition, battery and starting system diagnostic and repair procedures on current General Motors vehicles.

### AT 1314 GM ELECTRICAL SYSTEMS

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required*

**4 CREDITS** The student will apply competencies in battery, starting, charging, lighting, driver information, horn, wiper/washer, and accessory systems. Additionally, the student will demonstrate principles of electricity, magnetism, voltage and current regulation and basic circuitry as applied in automotive electrical systems to aid in general diagnosis of automotive electrical problems on current General Motors vehicles.

### AT 1324 GM ENGINE PERFORMANCE

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** The student will discuss and demonstrate general engine diagnostic procedures. Additionally, the student will demonstrate specific competencies in the diagnosis and repair of ignition systems, fuel, air induction systems, and exhaust systems, emission control systems, and engine electronic systems on current General Motors vehicles.

### AT 1334 GM BRAKES

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** This course is an application of specific competencies in hydraulic system, drum brake system, disc brake system diagnosis and repair procedures. Also, the student will discuss and demonstrate competencies in power assist unit diagnosis and repair as well as wheel bearing, parking brake circuit and associated electrical circuit diagnosis and repair, which includes ABS systems on current General Motors vehicles.

### AT 1422 GM NEW PRODUCTS I

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**2 CREDITS** The student will discuss and demonstrate specific competencies in subject not included in other ASEP automotive courses, which subjects will benefit students needing additional General Motors product service training in new technology and specialized areas. A specific topic is announced for each offering.

### AT 1513 INTRODUCTION TO BODY REPAIR AND REFINISHING

*Prerequisite: None*

**3 CREDITS** This course covers safety practices, personal protection, and equipment operation during collision repair. The course will also cover compliance with Environmental Protection Agency policies, state and local regulations, and the Right-to-Know Act.

## **AT 1523 AUTOMOTIVE REFINISHING SYSTEMS AND PREPARATION**

*Prerequisite:* AT 1513, *Special admission procedures required.*

**3 CREDITS** This course is designed to cover finish systems, both type and color. Students will identify refinishing systems and prepare surfaces for refinishing. Students will demonstrate knowledge and skill in applications of primer-surface, seam sealers, chip resistant coating, and maskings.

## **AT 1533 NON-STRUCTURAL TRIM AND PANEL ALIGNMENT**

*Prerequisite:* AT 1513, *Special admission procedures required.*

**3 CREDITS** This course covers the basics of non-structural trim and body alignment. Students will demonstrate knowledge and skill in the use of panel alignment tools, fastener applications, panel alignment methods for bolt panels, and repair procedures.

## **AT 1543 SURFACE PREPARATION**

*Prerequisite:* AT 1513, *Special admission procedures required.*

**3 CREDITS** This course covers the development of a refinishing process plan and the implementation of this plan. Students will demonstrate knowledge and skill in the removal of paint finish, cleaning surfaces, applying metal treatment, applying primer, block sanding, primer surfacing, and preparing adjacent panels for blend.

## **AT 1553 AUTOMOTIVE/COLLISION PROGRAM BASICS**

*Prerequisite:* None

**3 CREDITS** This course covers the basic knowledge of collision repair. Students will receive an overview of the collision repair facility, basic safety aspects of the program, and student expectations for success in the collision repair program. Related topics will include general lab safety, tool usage, quality customer service and teamwork as they relate to the collision repair process. Applications of math skills such as standard and metric measuring, ratios, and proportions will also be taught. Students will also be required to participate in an industry work-site learning opportunity during the Automotive Collision Program Basics course.

## **AT 1612 A.S.E. ENGINE PERFORMANCE**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §

**2 CREDITS** This is an individual-paced (IP) course. The student will discuss and demonstrate general engine diagnostic procedures. Additionally, the student will demonstrate specific competencies in the diagnosis and repair of ignition systems, fuel, air induction systems, and exhaust systems, emission control systems and engine electric systems.

## **AT 1622 A.S.E. ENGINE REPAIR**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §

**2 CREDITS** This is an individual-paced (IP) course. The student will discuss and demonstrate competencies in general engine diagnosis and in cylinder head, valve train, engine block diagnosis and repair, as well as lubrication, cooling, fuel, exhaust, ignition, battery and starting system diagnostic and repair procedures.

## **AT 1632 A.S.E. SUSPENSION AND STEERING**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §

**2 CREDITS** This is an individual-paced (IP) course. This course is an application of basic competencies in steering systems, suspension systems and wheel alignment diagnosis, adjustment and repair. The student will further discuss and demonstrate an understanding of wheel and tire diagnosis and repair.

## **AT 1642 A.S.E. BRAKES**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §

**2 CREDITS** This is an individual-paced (IP) course. This course is an application of specific competencies in hydraulic system, drum brake system,

disc brake system diagnosis and repair procedures. Also, the student will discuss and demonstrate competencies in power assist unit diagnosis and repair as well as wheel bearing, parking brake circuit and associated electrical circuit diagnosis and repair, which includes ABS systems.

## **AT 1652 A.S.E. AUTOMOTIVE ELECTIVES I**

*Prerequisite:* (R) (W) MATH 1652 or adequate math placement test score, or by evaluation. §

**2 CREDITS** This is an individual-paced (IP) course. The student will discuss and demonstrate specific competencies in subjects not included in another ATIP automotive courses, which will benefit those needing additional automotive training in new technology and specialized areas. A specific topic is announced for each offering.

## **AT 1733 BODY AND ELECTRICAL SERVICE**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score.

**3 CREDITS** The student will demonstrate competencies in electrical theory and automotive heat and air conditioning theory, general body accessory and electrical service including automotive air conditioning/heating systems repair and diagnosis, battery charging, lighting and repair.

## **AT 1753 UNDER-VEHICLE SERVICE**

*Prerequisite:* (W) MATH 0103 or adequate math placement test score.

**3 CREDITS** The student will demonstrate competencies in vehicle brake systems, steering systems and suspension systems. These competencies will include brake system repair and diagnosis, anti-lock brake system diagnosis, alignment procedures and theory, and suspension diagnosis.

## **AT 1773 POWERTRAIN SERVICE**

*Prerequisite:* (W) MATH 0103 or adequate math placement test score.

**3 CREDITS** The student will demonstrate competencies in engine repair and engine performance that will include general engine diagnosis, engine repair, valve train design, cooling system diagnosis, ignition system diagnosis, emission control system diagnosis and engine control diagnosis.

## **AT 2001 CAREER EXPERIENCE**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score.

**1 CREDIT** The student will demonstrate the ability to work effectively as a full-time employee at a sponsoring dealership and will demonstrate specified competencies and develop service skills by working and performing service and repair operations in areas related to coursework completed the preceding term. Enrollment may be repeated with a change in work emphasis.

## **AT 2101 A.S.E. CERTIFICATION**

*Prerequisite:* (R)

**1 CREDIT** The student will demonstrate competencies in engine repair, automatic transmission/transaxle, manual drive train and axles, suspension and steering, brakes, electrical systems, heating and air conditioning, and engine performance. This course is designed for individuals seeking A.S.E. certification which requires previous completion of related training.

## **AT 2204 A.S.E. MANUAL DRIVE TRAINS**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score.

**4 CREDITS** The student will apply specific competencies in general transmission and transaxle diagnosis. Additionally, the student will demonstrate competencies in transmission/transaxle maintenance, adjustment and in and off vehicle repair.

## **AT 2214 A.S.E. AUTOMATIC TRANSMISSIONS/ TRANSAXLES**

*Prerequisite:* (R) (W) MATH 0103 or adequate math placement test score.

**4 CREDITS** The student will apply specific competencies in general transmission and transaxle diagnosis. Additionally, the student will demonstrate competencies in transmission/transaxle maintenance, adjustment and in and off vehicle repair.

**AT 2224 A.S.E. ELECTRICAL SYSTEMS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** The student will apply competencies in battery, starting, charging, lighting, driver information, horn, wiper/washer, and accessory systems. Additionally, the student will demonstrate principles of electricity, magnetism, voltage and current regulation and basic circuitry as applied in automotive electrical systems to aid in general diagnosis of automotive electrical problems.

**AT 2234 A.S.E. HEATING AND AIR CONDITIONING SYSTEMS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**4 CREDITS** The student will apply competencies in air conditioning system diagnosis and repair as well as diagnosis and repair of refrigeration system components, heating and engine cooling systems and control units.

**AT 2304 GM SUSPENSION AND STEERING**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** This course is an application of basic competencies in steering systems, suspension systems and wheel alignment diagnosis, adjustment and repair. The student will further discuss and demonstrate an understanding of wheel and tire diagnosis and repair on current General Motors vehicles.

**AT 2314 GM MANUAL DRIVE TRAINS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** This course is an application of specific competencies in clutch, standard transmission and transaxle, drive (half) shaft and universal joint, rear axle and four- and/or all-wheel drive component diagnosis and repair procedures on current General Motors vehicles.

**AT 2324 GM AUTOMATIC TRANSMISSIONS AND TRANSAXLES**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** The student will apply specific competencies in general transmission and transaxle diagnosis. Additionally, the student will demonstrate competencies in transmission/transaxle maintenance, adjustment and in and off vehicle repair on current General Motors vehicles.

**AT 2334 GM HEATING AND AIR CONDITIONING SYSTEMS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**4 CREDITS** The student will apply competencies in air conditioning system diagnosis and repair as well as diagnosis and repair of refrigeration system components, heating and engine cooling systems and control units on current General Motors vehicles.

**AT 2422 GM NEW PRODUCTS II**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Special admission procedures required.*

**2 CREDITS** The student will discuss and demonstrate specific competencies in subjects not included in other ASEP automotive courses, which subjects will benefit students needing additional General Motors product service training in new technology and specialized areas. A specific topic is announced for each offering.

**AT 2513 EQUIPMENT AND APPLICATION**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers the preparation for refinishing and topcoat. Students will demonstrate knowledge and skill in body refinishing, preparing and mixing topcoats, using air supply equipment, using spray guns, and applying various types of topcoats.

**AT 2523 TINTING AND BLENDING**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers the basics and characteristics of color. The students will demonstrate knowledge and skill in the plotting of solid, pearl, and metallic color, and color matching. Students will demonstrate knowledge and skill in blending processes for single state, base coat/clear coat, and tri-coat finishes.

**AT 2533 TROUBLESHOOTING AND DETAILING**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers the identification of paint film defects and their causes and cures. Also covered are finish detailing as it relates to refinishing, decals and strip taping. Students will demonstrate knowledge and skill in these areas.

**AT 2563 MINOR BODY REPAIR**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers metal-straightening processes and the selection and application of body surface and specialty fillers. Students will demonstrate knowledge and skill in the proper utilization of tools and equipment and applying the processes of straightening, body surfacing and the application of specialty fillers.

**AT 2573 DOOR AND QUARTER PANEL REPLACEMENT**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers the removal and replacement of weld-on panels. Students will demonstrate knowledge and skill in the repair or replacement of weld-on panels.

**AT 2583 AUTOMOTIVE GLASS REPLACEMENT**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers the removal and installation of moveable and fixed glass using the tools and processes necessary. Students will demonstrate knowledge and skill in the replacement of glass.

**AT 2593 MIG WELDING AND CUTTING**

*Prerequisite: AT 1553 or by evaluation. §*

**3 CREDITS** This course covers safety practices and processes in different types of welds associated with automotive sheet metal welding. Students will demonstrate knowledge and skill in applying different types of welds.

**AT 2612 A.S.E. MANUAL DRIVE TRAINS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §*

**2 CREDITS** This is an individual-paced (IP) course. This course is an application of specific competencies in clutch, standard transmission and transaxle, drive (half) shaft and universal joint, rear axle and four- and/or all-wheel drive component diagnosis and repair procedures.

**AT 2622 A.S.E. AUTOMATIC TRANSMISSIONS/ TRANSAXLES**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §*

**2 CREDITS** This is an individual-paced (IP) course. The student will apply specific competencies in general transmission and transaxle diagnosis. Additionally, the student will demonstrate competencies in transmission/transaxle maintenance and adjustments.

**AT 2632 A.S.E. ELECTRICAL SYSTEMS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §*

**2 CREDITS** This is an individual-paced (IP) course. The student will apply competencies in battery, starting, charging, lighting, drive information, horn, wiper washer, and accessory systems. Additionally, the student will demonstrate principles of electricity, magnetism, voltage and current regulation and basic circuitry as applied in automotive electrical systems to aid in general diagnosis of automotive electrical problems.

## **AT 2642 A.S.E. HEATING AND AIR CONDITIONING SYSTEMS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §*

**2 CREDITS** This is an individual-paced (IP) course. The student will apply competencies in air conditioning system diagnosis and repair as well as diagnosis and repair of refrigeration system components, heating and engine cooling systems and control units.

## **AT 2652 A.S.E. AUTOMOTIVE ELECTIVES II**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score, or by evaluation. §*

**2 CREDITS** This is an individual-paced (IP) course. The student will discuss and demonstrate specific competencies in subjects not included in other ATIP automotive courses, which will benefit those needing additional automotive training in new technology and specialized areas. A specific topic is announced for each offering.

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## **AVIATION MAINTENANCE TECHNOLOGY**

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### **AMT 1113 FUNDAMENTALS OF AVIATION MAINTENANCE**

*Prerequisite: (R)*

**3 CREDITS** The student will identify shop and hangar safety hazards and methods of preventing human injury and equipment damage. The student will identify basic aircraft parts, controls, and instruments; will extract information from blueprints, schematics and charts; and will describe modern aircraft structural materials, materials processing and testing.

### **AMT 1123 TECHNICAL MECHANICS AND REGULATIONS**

*Prerequisite: (R)*

**3 CREDITS** The student will relate Federal Aviation Regulations to the construction and maintenance practices of modern aircraft, interpret and follow maintenance publications and demonstrate proper record keeping practices for aircraft maintenance. The student will also demonstrate proper group handling operations; weighing, weight and balance and loading procedures; and the proper selection, use and care of mechanics hand and power tools and measurement devices while performing maintenance operations.

### **AMT 1125 AIRFRAME ELECTRICAL SYSTEMS**

*Prerequisite: (R) (W) AMT 1212*

**5 CREDITS** The student will develop a high degree of proficiency in troubleshooting complex aircraft electrical systems. The student will install electrical system components and check these systems for proper operation. The student will be introduced to modern electric control devices such as logic circuit components and digital electronics.

### **AMT 1135 POWERPLANT ELECTRICAL SYSTEM**

*Prerequisite: (R) (W) AMT 1212*

**5 CREDITS** The student will practice installation procedures of powerplant electrical components. The student will check for proper operation of powerplant electrical charging/starting systems and components such as generators, alternators and starters. The student will service these systems and learn to perform repairs to system components.

### **AMT 1212 BASIC AIRCRAFT ELECTRONICS**

*Prerequisite: (R)*

**2 CREDITS** The student will use basic electricity laws and formulas to calculate and measure voltage, current, power and resistance in AC and DC electrical systems. The student will compute and observe the effects of inductance, capacitance and impedance in AC systems; construct basic electrical circuits and perform circuit analysis using electrical diagrams and measuring instruments; and will perform basic troubleshooting and aircraft battery service operations.

### **AMT 1312 AIRCRAFT STRUCTURES I**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will apply knowledge of types of aircraft structure which produce lifting forces and provide powerplant support including truss and stressed skin wing construction in solving flight problems. The student will demonstrate the proper inspection, materials selection, repair and testing of wood and laminated non-metallic structures, sheet metal structures and fabric and fiberglass aircraft coverings in accordance with FAA standards.

### **AMT 1323 AIRCRAFT STRUCTURES II**

*Prerequisite: (R)*

**3 CREDITS** The student will assemble, adjust and inspect rigging and verify control response for fixed wing and rotary wing flight control systems; inspect and determine the conditions of the airframe, its systems and components; and demonstrate proper soldering, welding and metal joining procedures to make structural repairs according to FAA specifications. In addition, the student will inspect, and correct deficiencies in meeting requirements for registration makings, proportions, use of color and ornamentation.

### **AMT 2112 AIRFRAME SYSTEMS I**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will apply principles of operation of aircraft hydraulic and pneumatic systems in properly inspecting, servicing, and repairing landing gear and aircraft brake systems. In addition, the student will demonstrate proper inspection, service trouble-shooting and repair operations on cabin atmosphere control and instrument systems.

### **AMT 2122 AIRFRAME SYSTEMS II**

*Prerequisite: (R)*

**2 CREDITS** The student will apply principles of operation and limitations associated with communication and navigation systems, position and warning systems, fuel systems, ice control and rain systems, and fire protection systems to properly inspect, service, troubleshoot and repair the systems in accordance with manufacturer's specifications and FAA regulations.

### **AMT 2213 RECIPROCATING ENGINES I**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will relate the historical development of the reciprocating engine to the theory and operations of modern radial and horizontally opposed aircraft engines. The student will clean, disassemble, inspect, repair, reassemble and test aircraft reciprocating engines and associated induction, cooling, exhaust and lubricating systems in accordance with manufacturer's maintenance manuals, Federal Aviation Regulations (FARs) and advisory circulars.

### **AMT 2222 RECIPROCATING ENGINES II**

*Prerequisite: (R)*

**2 CREDITS** The student will demonstrate proper procedures for power plant inspection, troubleshooting and maintenance including engine removal, installation, rigging and the performance of 100-hour inspections. In addition, the student will demonstrate proper procedures for the inspection, servicing and repair of fuel metering and ignition systems and will inspect, balance and maintain fixed and variable pitch propellers in accordance with FAA and manufacturer's standards.

### **AMT 2312 JET TURBINE POWERPLANT I**

*Prerequisite: (R)*

**2 CREDITS** The student will relate the theory and operation of the turbine engines to the design, construction and maintenance of modern gas turbine engines including turbo jet, turbo fan, turbo prop and turbo shaft engines. The student will perform proper cleaning, disassembly, inspection, repair and reassembly procedures on gas turbine engines and associated inlet, stator vane, bleed air, anti-ice, cooling, exhaust and lubricating systems in accordance with manufacturer's manuals and Federal Aviation Regulations (FARs) and advisory circulars.



**AMT 2323 JET TURBINE POWERPLANT II**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will demonstrate proper procedures for determining turbine engine conformity and performing air-worthiness inspections, troubleshooting, maintenance and repair operations including removal, installations, rigging and 100-hour inspections. The student will also use instruments and other methods to inspect, troubleshoot service and repair turbine powerplant related systems such as fuel and metering, ignition, instrument, fire protection and turbine propeller systems in accordance with FAA and manufacturer's standards.

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**BANKING AND FINANCE**

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**BF 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**1-4 CREDITS** The student will demonstrate competencies in subjects not covered in other banking courses, but which are beneficial to students wanting a greater understanding of banking functions. A specific topic is announced for each offering. May be repeated with a change of topic.

**BF 1303 INTRODUCTION TO FINANCIAL INSTITUTIONS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**3 CREDITS** The student will trace the history, the organization and the operations of the commercial financial industry and explain the impact of these fundamental financial concepts on today's economy. (This course is generally offered in the fall semester only.)

**BF 2000 SPECIAL TOPICS**

*Prerequisite: (R)*

**1-4 CREDITS** The student will demonstrate competencies in selected topics related to the operational management of financial institutions not covered in other courses, but which are beneficial to students wanting a greater understanding of these functions. A specific topic is announced for each offering. May be repeated with a change of topic.

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**BIOINFORMATICS**

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**BINFO 1011 INTRODUCTION TO BIOINFORMATICS**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**1 CREDIT** Students are introduced to the field of bioinformatics. They will explore the field of bioinformatics in a comprehensive overview, which includes ethics, as well as current trends in bioinformatics careers and applications.

**BINFO 2013 BIOINFORMATICS TOOLS AND DATABASES**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, BINFO 1011*

**3 CREDITS** Students are introduced to internet databases and methods in bioinformatics. They will learn to use genomic and protein databases, and appropriate software tools to align and compare sequences and to model protein structures. Students focus on the practical use of bioinformatics tools and databases to explore genomes and proteomes in applied problem spaces.

**BINFO 2113 BIOINFORMATICS PROGRAMMING IN PERL**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, BINFO 2013*

**3 CREDITS** Students are introduced to the PERL programming language. They use PERL along with web server concepts to create web sites with database interactivity.

**BINFO 2213 BIOINFORMATICS PRACTICUM**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, BINFO 2013, BINFO 2113*

**3 CREDITS** Students gain practical experience in the field of bioinformatics through an internship at an affiliated business or university research center, or a capstone experience at OCCC. Students will use all techniques learned in BINFO 1011, 2013, and 2113 in a work setting.

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**BIOLOGICAL SCIENCE**

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**BIO 0123 CONCEPTS IN SCIENCE (BIOLOGY EMPHASIS)**

*Prerequisite: (R), Enrollment in BIO 0123 is based upon the student's performance on the appropriate placement test.*

**3 CREDITS** This course is designed to satisfy the College entrance requirement for those students who did not take a life science course in high school. The course will help the student develop an understanding of basic biological concepts from the cell to the Scientific Method. Laboratory work is an integral part of the course. This course is also designed to prepare the student for a college level biology course.

**BIO 1011 GENERAL BIOLOGY LAB**

*Prerequisite: Any BIO non-laboratory course except BIO 1023*

**1 CREDIT** This course is designed for students needing laboratory experience to complete their General Education biology requirements. It is not open to science majors or those who have completed a laboratory based biology course. Students will complete the same lab exercises that are in the General Biology course, BIO 1114.

**BIO 1023 INTRODUCTORY NUTRITION**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** Upon completion of this course, the student will be able to discuss the composition of nutrients and accessory factors required for human nutrition, relate their roles in human health and disease, and describe the application of basic nutritional principles to the planning of normal and special dietary regimens.

*GenEd Requirement*

*NOTE: If the student intends or attempts to transfer these credits to another institution, then the student is responsible for contacting the transfer institution and verifying that the institution will accept this course prior to enrolling in BIO 1023.*

**BIO 1113 GENERAL BIOLOGY (NON-MAJORS)**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** An introductory non-lab course that is designed to provide non-biological science major with the necessary background needed to effectively understand scientific information. Students investigate the properties of life to include: organization, energy use, evolution, maintenance of homeostasis, reproduction, growth, and development. Ecological concepts are discussed which enables students to have a better understanding regarding the impact that humans have on the natural world.

*GenEd Requirement*

**BIO 1114 GENERAL BIOLOGY (NON-MAJORS)**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**4 CREDITS** An introductory lab-based course that is designed to provide non-biological science major with the necessary background needed to effectively understand scientific information. Students investigate the properties of life to include: organization, energy use, evolution, maintenance of homeostasis, reproduction, growth, and development. Ecological concepts are discussed which enables students to have a better understanding regarding the impact that humans have on the natural world. Laboratory work is an integral and required part of this course.

*GenEd Requirement*

**BIO 1124 GENERAL BIOLOGY I (MAJORS)**

*Prerequisite: (R), (W), MATH 0403 or adequate math placement test score.*

**4 CREDITS** An introductory course required for all biological science majors and pre-health profession students. The fundamental principles of biology are described using a cellular approach. Students gain knowledge regarding the chemical basis of life, structural characteristics of cells to include a discussion of

energetics, metabolism and genetics. Evolution and ecology are also discussed in order to provide an understanding of both the diversity of living organisms and the living world. Students recognize, discuss and correctly apply fundamental biological principles influencing their personal relationship with other life forms. A discussion of the scientific method, logical (deductive) reasoning, hypothesis testing and some common fallacies and misconceptions that cloud scientific explanations of the natural world are included. Laboratory work, an integral and required part of the course, will enhance the student's understanding of fundamental biological concepts as well as scientific procedures, laboratory technical skills, dissection and statistical analysis.

GenEd Requirement

### BIO 1134 GENERAL BIOLOGY II (MAJORS)

Prerequisite: (R), (W) MATH 0403 or adequate math placement test score.

**4 CREDITS** This second course in the General Biology series for majors in the biological sciences and related fields, takes organismal approach to studying bacterial, plant and animal diversity, and relates how various morphological features function. A discussion of the scientific method, logical (deductive) reasoning, hypothesis testing and some common fallacies and misconceptions that cloud scientific explanations of the natural world are included. Students discuss Darwinian natural selection as a mechanism for evolutionary change with emphasis on systematics in order to understand evolutionary relationships between the major classes of plants and animals. Laboratory work, an integral and required part of the course, includes a variety of dissections and hypothesis testing exercises.

GenEd Requirement.

### BIO 1204 HISTORY OF LIFE ON EARTH

Prerequisite: (R) (W) Math 0103 or adequate math placement test score.

**4 CREDITS** This course includes a one hour lab and field experience. Students will demonstrate knowledge of biological systematics, paleontology, evolution, vertebrate anatomy, ecology, and several topics within geology. Students will apply these concepts to the origin and evolution of the major groups of living things on Earth.

GenEd Requirement

### BIO 1224 TECHNICAL HUMAN ANATOMY AND PHYSIOLOGY

Prerequisite: (R) (W)

**4 CREDITS** Using a variety of instructional methodologies such lecture, laboratory, and multimedia, the student will conduct a systematic study of the structure and function of the cells, tissues and organ-systems identifying the basic anatomical structures and physiological processes that occur in the human body. This course is not equivalent to BIO 1314 Human Anatomy and Physiology I, and it is not transferrable to other institutions.

### BIO 1314 HUMAN ANATOMY AND PHYSIOLOGY I

Prerequisite: (R) (W) Math 0103 or adequate math placement test score. An adequate biology placement test score or BIO 0123 or a college-level biological science class.

**4 CREDITS** Through a systematic study of the structure and function of the human body, its cells, tissues, organs and systems, the student will identify and describe basic anatomical structures and fundamental physiological processes that occur in health and disease for the major body systems. Laboratory work which may require dissection is an integral and required part of the course.

† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.

### BIO 1414 HUMAN ANATOMY AND PHYSIOLOGY II

Prerequisite: (R) (W) Math 0103 or adequate math placement test score, BIO 1314

**4 CREDITS** With Human Anatomy & Physiology I as a foundation, the student will advance his or her study of the structure and function of the human body and will identify and describe more detailed anatomical structures and more comprehensive physiological processes that occur in health through a systematic survey of the major body systems. Laboratory work which may require dissection is an integral and required part of the course.

† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.

### BIO 1514 MICROBIOLOGY OF INFECTIOUS DISEASE

Prerequisite: (R) (W) Math 0103 or adequate math placement test score, BIO 1314

**4 CREDITS** This course is designed as an overview of microbiology as related to the health care profession. Primary concentration will be on the pathogenic microorganisms, including bacteria, virus, rickettsiae, fungi and protozoa. Emphasis will be placed on diseases caused by microorganisms, host/parasite relationships, aseptic technique, and control of nosocomial infections. Laboratory work is an integral component of this course.

† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.

### BIO 2000 SPECIAL TOPICS

Prerequisite: (R) (W) Math 0203 or adequate math placement test score.

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other biological science courses, but which are beneficial in providing a better understanding of the field. A specific topic is announced for each time of offering. Enrollment may be repeated with a change of topic.

### BIO 2102 CLINICAL ANATOMY

Prerequisite: (R) (W) Math 0103 or adequate math placement test score, PTA and OTA students only

**2 CREDITS** This course is designed to strengthen the student's knowledge of human anatomy in the areas of bones, muscles, and nerves as related to the areas of occupational and physical therapy. Models and prosected cadavers will be utilized to enrich the student's understanding of these systems.

### BIO 2114 GENERAL BOTANY

Prerequisite: (R) (W) Math 0403 or adequate math placement test score, BIO 1124

**4 CREDITS** Through a systematic survey of major plant groups, the student will demonstrate his or her ability to apply principles of plant structure and function, genetics, classification and life cycles to explain evolutionary relationships of plants to each other and their economic importance to man. Laboratory work which may require dissection is an integral and required part of the course.

GenEd Requirement.

### BIO 2125 MICROBIOLOGY

Prerequisite: (R) (W) or adequate math placement test score, Any four credit hour college-level biology course and a college-level chemistry course.

**5 CREDITS** Students are introduced to the biological requirements and activities of microorganisms which influence their roles as integral components of the ecosystem. Students demonstrate knowledge of basic principles of pathology, epidemiology and immunology in addition to performing basic laboratory techniques for isolating, characterizing and identifying common microorganisms.

GenEd Requirement.

### BIO 2203 CELL BIOLOGY

Prerequisite: (R) (W) Math 0403 (R) (W) Math 0203 or adequate math placement test score, BIO 1124

**3 CREDITS** Students are introduced to the basic features of cells and methods of studying them. Emphases are on cellular chemistry, structure, functions of organelles and processes. Students will demonstrate knowledge of the mechanisms of cellular processes, energetics, reproduction and differentiation.

### BIO 2215 GENERAL ZOOLOGY

Prerequisite: (R) (W) Math 0403 or adequate math placement test score, BIO 1124

**5 CREDITS** General Zoology provides a systematic investigation of the major protistan and animal groups. Students discuss and correctly apply evolutionary, taxonomic, anatomical, physiological, behavioral, and ecological characteristics which exist within each of these groups. Laboratory work which requires dissection is an integral and required part of this course.

GenEd Requirement.

### BIO 2224 INVERTEBRATE ZOOLOGY

Prerequisite: (R) (W) Math 0403 or adequate math placement test score, BIO 1124

**4 CREDITS** The student will demonstrate knowledge of invertebrate animals with relationship to their taxonomy, anatomy, physiology, life history, ecology and evolution. Laboratory work which may require dissection is an integral and required part of the course.

**BIO 2234 HUMAN PHYSIOLOGY**

*Prerequisite: (R) (W) Math 0403 or adequate math placement test score, BIO 1124 and one college-level chemistry course.*

**4 CREDITS** Students discuss major systems of the human body, contrast functional and regulatory activities of each and identify factors influencing homeostasis. Through the use of models, the student will recognize the relative influences and interrelationships between circulation, digestion, metabolism, respiration, kidney function, muscle action, endocrine and nervous control, and reproduction of other systems and the organism as a whole. Laboratory work which may require dissection is an integral and required part of the course.

**BIO 2255 HUMAN ANATOMY**

*Prerequisite: (R) (W) Math 0403 or adequate math placement test score, BIO 1124*

**5 CREDITS** Students study the development and gross morphology of the human body and its systems. This course may not be applied for Biology major credit. Open only to majors in physical education, science education, physical therapy, nursing, occupational therapy, physician's associate, dental hygiene, pharmacy, and selected fields. Laboratory dissection of human cadavers is required.

**BIO 2324 COMPARATIVE VERTEBRATE ANATOMY**

*Prerequisite: (R), BIO 2215 or equivalent*

**4 CREDITS** Through an investigation of early development, phylogeny and anatomical characteristics of various vertebrate species, the student will identify and contrast vertebrate morphology and discuss its evolutionary significance. Laboratory work which may require dissection is an integral and required part of the course.

**BIO 2343 GENETICS AND MAN**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Through a study of genetic principles, the student will be able to describe mechanisms of heredity and the relationship of genetics to disease, inheritance, evolution and contemporary social problems.

*GenEd Requirement*

**BIO 2403 ECOLOGY AND ENVIRONMENTAL ISSUES**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

*Assessment required prior to enrollment.*

**3 CREDITS** The student will discuss and correctly apply fundamental ecological principles as a basis for understanding, evaluating, and suggesting possible solutions to environmental problems relating to man's manipulation of and role in the biosphere. Individual and group projects, discussion groups and selected readings provide the basis for understanding basic ecological principles as they apply to major issues.

*GenEd Requirement*

**BIO 2404 ECOLOGY AND ENVIRONMENTAL ISSUES**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

*Assessment required prior to enrollment.*

**4 CREDITS** The student will demonstrate his or her ability to discuss and correctly apply fundamental ecological principles as a basis for understanding, evaluating, and suggesting possible solutions to environmental problems relating to man's manipulation of and role in the biosphere. Individual and group projects, discussion groups and selected readings provide the basis for understanding basic ecological principles as they apply to major issues. Laboratory work which may require dissection is an integral and required part of the course.

*GenEd Requirement*

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**BIOTECHNOLOGY**

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**BIOT 1011 SURVEY OF BIOTECHNOLOGY**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**1 CREDIT** The student will explore the field of biotechnology in a comprehensive overview. Course topics will include ethics, current trends in biotechnology careers and research through demonstrations, seminars, and field-trips.

**BIOT 1022 MEDIA AND SOLUTION PREPARATION**

*Prerequisite: (W) College biology, CHEM 1115; Corequisite: BIO 2125*

**2 CREDITS** The student will prepare media and solutions, use calculations required for solution preparation, and use equipment for solution preparation such as the analytical balance, pH meter, and autoclave.

**BIOT 2352 IMMUNOLOGY**

*Prerequisite: (W) BIO 2125*

**2 CREDITS** The student will discuss the nonspecific and specific immune systems of the human organism. Course topics will include antigen-antibody interaction, cell-mediated immunity, interferon, natural killer cells, and complement.

**BIOT 2823 BIOTECHNOLOGY LABORATORY I**

*Prerequisite: (W), MATH 2013 or MATH 1513, BIOT 1022; Corequisite: BIO 2343, CHEM 1215*

**3 CREDITS** Students become familiar with recombinant DNA techniques and gene expression. Students work with genomic and plasmid DNA, transfer, select for, identify, characterize, quantify, amplify, and purify DNA. Experience with electrophoresis, polymerase chain reaction, plasmid preps, and bioinformatics will be included.

**BIOT 2843 ADVANCED NUCLEIC ACID LABORATORY**

*Prerequisite: (W) BIOT 2823*

**3 CREDITS** Students build on the skills learned in Biotechnology Laboratory I to explore more advanced DNA and RNA techniques.

**BIOT 2921 CELL CULTURE METHODS**

*Prerequisite: (W) BIO 2125; BIOT1022*

**1 CREDIT** The student will learn to successfully maintain mammalian culture cells in a healthy uncontaminated state for an extended period of time. The course will include making cell culture media, monitoring cell growth, freezing cells, and bringing up frozen cells.

**BIOT 2933 BIOTECHNOLOGY LABORATORY II**

*Prerequisite: (W) BIOT 2823*

**3 CREDITS** The student will characterize, quantify and partially purify proteins with a variety of methods. Immunochemistry will be examined including ELISA and Western Blot.

**BIOT 2942 BIOMANUFACTURING**

*Prerequisite: (W) BIOT 2823 and BIOT 2933*

**2 CREDITS** The student will use a biofermenter to grow and monitor cells on a laboratory scale that simulates the large-scale production used in industry. Students will clean, sterilize, inoculate, operate and monitor the fermenter and then recover and purify protein products. Principles of upstream and downstream processing in the manufacture of a protein product using current Good Manufacturing Practices (cGMPs) and following Standard Operating Procedures (SOPs) will be emphasized.

**BIOT 2993 BIOTECHNOLOGY INTERNSHIP**

*Prerequisite: (W) BIOT 2933, BIOT 2921*

**3 CREDITS** Students receive 320 hours of practical experience at one of the affiliated corporations or a university research facility. The techniques learned in BIOT 2823, BIOT 2933 and BIOT 2921 will be applied in an actual research setting to give the student more experience while learning practical applications for laboratory procedures.

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**BUSINESS**

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**BUS 1000 SPECIAL TOPICS**

*Prerequisite: (R)*

**VARIABLE 1-4 CREDITS** The student will become familiar with subjects not covered in other business courses but which are beneficial to students wanting a greater understanding of the business cycle. A specific subject is announced for each time of offering. May be repeated with a change of topic.

## **BUS 1013 INTRODUCTION TO BUSINESS**

*Prerequisite: (R) MATH 0103 or adequate math placement test score.*

**3 CREDITS** The student will become familiar with the economic and social setting of business in the world and the structure of business and management of human and fiscal resources. The student will be able to demonstrate an understanding of these concepts as they are related to American business operations and public policy.

## **BUS 1323 MATHEMATICS FOR BUSINESS CAREERS**

*Prerequisite: (R), MATH 0103 or adequate math placement test score within the last year.*

**3 CREDITS** The student will demonstrate the ability to use basic mathematical processes, and use mathematical concepts in solving everyday business problems in operations, trade, taxation, accounting and finance.

*Note: This course is intended only for certain majors leading to an Associate in Applied Science (Technical-Occupational) degree.*

## **BUS 2000 COOPERATIVE EDUCATION**

*Prerequisite: (R)*

**VARIABLE 1-3 CREDITS** The student will participate in a work situation related to his or her career and/or immediate job entry program.

## **BUS 2023 BUSINESS STATISTICS**

*Prerequisite: (R), MATH 0403 or adequate math placement test score.*

**3 CREDITS** The student will solve problems applying the concepts of random sampling, elementary probability, testing hypotheses, descriptive measures, chi-square, regression and correlation, and analysis of variance.

## **BUS 2033 BUSINESS COMMUNICATION**

*Prerequisite: (R) (W), ENGL 1113 or by evaluation. §*

**3 CREDITS** Business Communication is a survey course of communication skills needed in the business environment. Course content includes writing memoranda, letters, reports, resumes, and electronic messages; delivering oral presentations; and developing interpersonal skills. Critical thinking and problem solving skills are emphasized. Development of these skills is integrated with the use of technology.

*Note: This course satisfies the computer proficiency requirement.*

## **BUS 2043 BUSINESS ETHICS**

*Prerequisite: (R)*

**3 CREDITS** Student will explore standards of honesty and honorable human conduct in the world of business, focusing on how people's plans and intentions affect others.

## **BUS 2073 LEGAL ENVIRONMENT OF THE WORKPLACE**

*Prerequisite: (R) (W), ENGL 1113 and POLSC 1113*

**3 CREDITS** Students will study the American Legal System and how it applies to the workplace. Students will demonstrate knowledge in court systems, legal reasoning, law and ethics, civil procedure, agency, torts, negligence, labor law, and employment discrimination.

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# **CHEMISTRY**

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## **CHEM 1103 CHEMISTRY AROUND US**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** A course designed for students having no previous training in chemistry or for whom the study of chemistry will terminate with this experience. Upon completion of this course, the student will be able to discuss such fundamental concepts of chemistry as atomic structure and the periodic table, chemical bonding, nuclear energy, chemical elements and compounds, and the significance of carbon and some other elements to life itself.

*GenEd Requirement*

## **CHEM 1115 GENERAL CHEMISTRY I**

*Prerequisite: (R) (W), MATH 1513 or MATH 1533, or both MATH 0403 and High School Chemistry or CHEM 1123. A grade of "C" or better is required in all prerequisite courses.*

**5 CREDITS** This course is designed for science and engineering majors. The course covers nomenclature, atomic and molecular structure, stoichiometry, acid/base and other aqueous reactions, states of matter, phase changes, gas laws, and an introduction to thermochemistry. Laboratory experience is an integral part of the course.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

## **CHEM 1123 SURVEY OF GENERAL, ORGANIC, AND BIOCHEMISTRY**

*Prerequisite: (R) (W) Math 0403 or adequate math placement test score.*

**3 CREDITS** This course is designed for nursing and allied health programs which do not require General Chemistry I for science majors. This course is also appropriate for individuals interested in a general overview of chemistry. The course covers selected topics in general chemistry including unit conversions, atomic structure, chemical bonding, acids, bases, pH, chemical equilibrium, electrolytes, and properties of solutions. The course also introduces topics from organic and biochemistry. The relationship between chemical principles and human health is emphasized throughout the course.

*GenEd Requirement*

## **CHEM 1131 LABORATORY FOR SURVEY OF GENERAL, ORGANIC, AND BIOCHEMISTRY**

*Prerequisite: (R) (W), MATH 0403 or adequate math placement test score.*

*Prerequisite or Corequisite: CHEM 1123*

**1 CREDIT** Students apply chemical principles discussed in CHEM 1123 in a laboratory setting.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

## **CHEM 1144 TECHNICAL CHEMISTRY**

*Prerequisite: (R) (W), APPM 1233 or MATH 1613*

**4 CREDITS** This is a course designed primarily for technical career programs. Upon completion of this course, the student will be able to apply chemical concepts and techniques to solve technical problems in the areas of chemistry, environmental measurements and instrumentation. The student will demonstrate a basic knowledge of structure and bonding, the nature of solutions, states of matter, acid-base phenomena, thermodynamics, electrochemistry and elementary organic chemistry. Laboratory experience is an integral part of the course.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

## **CHEM 1215 GENERAL CHEMISTRY II**

*Prerequisite: CHEM 1115 with a grade of "C" or better; MATH 1513 or MATH 1533 with a grade of "C" or better.*

**5 CREDITS** This course is a continuation of CHEM 1115 with emphasis on thermochemistry, intermolecular forces, properties of solutions, acid/base properties, kinetics, equilibrium, thermodynamics, electrochemistry, and organic chemistry. Laboratory is an integral part of the course.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

## **CHEM 2114 ORGANIC CHEMISTRY I**

*Prerequisite: CHEM 1215 with a grade of "C" or better.*

**4 CREDITS** This course is the first of a two-semester sequence of Organic Chemistry for science and chemical engineering majors as well as students seeking to enter the fields of medicine, dentistry, pharmacy, and veterinary medicine. Students will master the fundamental concept of structure, functional groups, and reactions of aliphatic compound along with selected reaction mechanisms.

*Note: (This course replaced the lecture component of CHEM 2115 beginning in Spring 2009.)*

**CHEM 2122 ORGANIC CHEMISTRY LABORATORY**

*Prerequisite: CHEM 2114 with a grade of "C" or better.*

**2 CREDIT HOURS** This laboratory course is intended for science and chemical engineering majors as well as students seeking to enter the fields of medicine, dentistry, pharmacy, and veterinary medicine. Students will master common laboratory techniques used to synthesize, separate, purify, and characterize organic compounds.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*Note: (This course replaced the laboratory components of CHEM 2115 and CHEM 2125 beginning in Fall 2009.)*

**CHEM 2124 ORGANIC CHEMISTRY II**

*Prerequisite: CHEM 2114 with a grade of "C" or better.*

**4 CREDITS** This course is the second of a two-semester sequence of Organic Chemistry for science and chemical engineering majors as well as students seeking to enter the fields of medicine, dentistry, pharmacy, and veterinary medicine. Students will master the concepts of structural theory, reactions, and the reaction mechanisms of the principal functional groups of organic compounds which were not included in the first course.

*Note: (This course replaced the lecture component of CHEM 2125 beginning in Fall 2009.)*

**CHEM 2990 CHEMICAL RESEARCH INTERNSHIP**

*Prerequisite: CHEM 1115 or by evaluation. §*

**1 to 3 CREDITS** Students work ten to sixteen weeks in an approved research facility under the supervision of an on-site mentor on a full-time or part-time basis. Students will gain experience in applied research in a real-world setting and will help produce or improve a product or process. Credit hours awarded are dependent upon number of hours worked. This course may be repeated at the same site or a different approved internship site with permission of the Internship Coordinator.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

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**CHILD DEVELOPMENT**

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**CD 1113 BASIC CHILD CARE I**

*Prerequisite: (R)*

**3 CREDITS** This course is designed for students preparing for Early Childhood Professional Level I. The student will acquire basic knowledge about health and safety, classroom organization, and care of infants and toddlers. The student will demonstrate an ability to apply the knowledge by working in a child care center a minimum of 100 hours under the instructor's supervision.

**CD 1121 THE CHILD DEVELOPMENT PROFESSIONAL**

*Prerequisite: (R) (W)*

**1 CREDIT** This course will introduce students to the Child Development profession and program as well as the fields of child development and early childhood education.

**CD 1123 BASIC CHILD CARE II**

*Prerequisite: (R)*

**3 CREDITS** This course is designed for students preparing for the Early Childhood Professional Level I. The student will acquire advanced knowledge about health and safety, classroom organization, and care of infants and toddlers. The student will demonstrate an ability to apply the knowledge by working in a child care center a minimum of 100 hours under the instructor's supervision.

**CD 1133 ADVANCED CHILD CARE I**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is designed for students preparing for the Early Childhood Professional Level II. The student will acquire advanced knowledge about growth and development from birth through eight years, guidance, and creative activities. The student will demonstrate an ability to apply the knowledge by working in a child care center a minimum of 100 hours under the instructor's supervision.

**CD 1153 ADVANCED CHILD CARE II**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is designed for students preparing for the Early Childhood Professional Level II. The student will acquire advanced knowledge about growth and development from birth through eight years, guidance, and creative activities. The student will demonstrate an ability to apply the knowledge by working in a child care center a minimum of 100 hours under the instructor's supervision.

**CD 1211 PARENTING**

*Prerequisite: None*

**1 CREDIT** In this course, students will learn some of the best practices in parenting, including: the basic care of a child, guidance and discipline, the importance of interactive play, the understanding of language and literacy development, knowledge of the basic ages and stages of child development, knowledge of a child's microsystem, and balancing multiple responsibilities.

**CD 2000 SPECIAL TOPICS IN CHILD DEVELOPMENT**

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-6 CREDITS** The student will identify patterns of child growth and development, and will complete appropriate plans or designs for one or more of the following: learning programs, creative activities, nutritional diets, community relations, management activities, salesmanship, and budgeting.

**CD 2113 INTRODUCTION TO CHILD DEVELOPMENT**

*Prerequisite: (R) (W)*

**3 CREDITS** This course will identify patterns of the physical, intellectual and emotional/psycho-social development of children. The course will recognize the major theories of human development as they apply to children.

**CD 2153 INTRODUCTION TO EARLY CHILDHOOD EDUCATION**

*Prerequisite: (R)*

**3 CREDITS** This course explores the early childhood profession and its multiple historical, philosophical, and social foundations, including how these foundations influence current thought and practice.

**CD 2213 CHILD AND FAMILY IN SOCIETY**

*Prerequisite: (R) (W)*

**3 CREDITS** This course emphasizes promoting optimum development and support of families and children within various settings and the larger community. *General Education Course*

**CD 2333 INTEGRATED CURRICULUM DEVELOPMENT I**

*Prerequisite: (R) (W), Earned at least a "C" in CD 2113, CD 2153*

**3 CREDITS** This course discusses how to create, evaluate, and select developmentally appropriate materials, equipment, and environments that support children's early learning. It provides the opportunity to plan, implement, and evaluate an integrated curriculum that focuses on children's needs and interests and takes into account culturally valued content and children's home experiences. The course contains a laboratory component. The laboratory portion of the course involves direct interaction with children in the campus Child Development Center and Laboratory School. Students must meet pre-laboratory requirements.

*NOTE: In this course preschool and infant toddler early learning guidelines will be included.*

**CD 2353 CHILD HEALTH, SAFETY AND NUTRITION**

*Prerequisite: (R) (W), Earned at least a "C" in CD 2113, CD 2153*

**3 CREDITS** This course explores the identification and implementation of best practices for health, safety, and nutrition of young children in a variety of early childhood settings. The course contains a laboratory component. The laboratory portion of the course involves direct interaction with children in the campus Child Development Center and Laboratory School. Students must meet pre-laboratory requirements.

*NOTE: In this course preschool and infant toddler early learning guidelines will be included.*

### **CD 2363 BEHAVIOR AND GUIDANCE OF YOUNG CHILDREN**

*Prerequisite: (R) (W) Earned at least a "C" in CD 2153 & CD 2113 for Child Development majors or by evaluation. §*

**3 CREDITS** This course presents the theoretical basis for the use of positive, constructive child guidance and discipline techniques in programs serving children. The course contains a laboratory component. The laboratory portion of the course involves direct interaction with children in the campus Child Development Center and Laboratory School. Students must meet pre-laboratory requirements.

*NOTE: In this course preschool and infant toddler early learning guidelines will be included.*

### **CD 2443 LANGUAGE & LITERACY FOR YOUNG CHILDREN**

*Prerequisite: (R) (W) CD 2113 and CD 2153*

**3 CREDITS** This course is designed for students preparing to teach children fewer than six years of age. The student will demonstrate knowledge of the language and literacy development and learning needs of young children. The student will demonstrate skills in planning and presenting activities for children in the areas of language and literacy.

### **CD 2533 INTEGRATED CURRICULUM DEVELOPMENT II**

*Prerequisite: (R) (W) ENGL 1113 Earned at least a "C" CD 2113, CD 2153, CD 2333, and CD 2353*

**3 CREDITS** This course is designed for students preparing to teach children fewer than six years of age. Students will demonstrate the ability to use assessment effectively and plan curriculum on both a day-to-day and long-term basis for infants, toddlers and preschool age children of all abilities in group early care and education settings. Students will demonstrate knowledge of the teacher's relationship and ethical responsibility to children's families.

*NOTE: In this course preschool and infant toddler early learning guidelines will be included.*

### **CD 2623 SUPERVISED LABORATORY**

*Prerequisite: (R) (W) ENGL 1113 Earned at least a "C" in CD 2333, CD 2353*

**3 CREDITS** This course is designed for students planning to teach children under the age of six years. Students will work a minimum of 96 clock hours at the Oklahoma City Community College Child Development Center and Laboratory School. Students will provide for children's health and safety, guide their behavior, plan and executes activities in all curriculum areas, communicate with children's families, and interact with staff on a professional level. Students must meet pre-laboratory requirements.

### **CD 2632 CHILD DEVELOPMENT FIELDWORK**

*Prerequisite: (R) (W) ENGL 1113 Earned at least a "C" in CD 2533*

**2 CREDITS** This course is designed for students who plan to teach children under the age of six years. Students will demonstrate skill in guiding young children and providing for their health and safety in a group setting. Students will also demonstrate the ability to plan and execute developmentally appropriate activities in all curriculum areas. A minimum of eighty contact hours is required, which must be completed in instructor approved on- and off-campus early care and education facilities. Students must meet pre-laboratory requirements. Students must meet pre-fieldwork requirements documenting a minimum of 220 observation and contact hours with children in a variety of settings, including the workplace.

### **CD 2633 CHILD DEVELOPMENT FIELDWORK**

*Prerequisite: (R) (W) ENGL 1113 Earned at least a "C" in CD 2533*

**3 CREDITS** This course is designed for students who plan to teach children under the age of six years. Students will demonstrate skill in guiding young children and providing for their health and safety in a group setting. Students will also demonstrate the ability to plan and execute developmentally appropriate activities in all curriculum areas. A minimum of eighty contact hours is required, which must be completed in instructor approved on- and off-campus early care and education facilities. Students must meet pre-laboratory requirements. Students must meet pre-fieldwork requirements documenting a minimum of 220 observation and contact hours with children in a variety of settings, including the workplace.

### **CD 2713 INFANT/TODDLER DEVELOPMENT AND EDUCATIONAL PROGRAM**

*Prerequisite: (R) (W) ENGL 1113 Earned at least a "C" in CD 2113, CD 2153, CD 2333, CD 2353, CD 2363*

**3 CREDITS** This course will focus specifically on the cognitive, psychosocial, and physical development of the child from conception up to age 3. Attention will focus on the consequential care required for infants/toddlers in early care and education settings. The course contains a laboratory component. The laboratory portion of the course involves direct interaction with children in the campus Child Development Center and Laboratory School. Students must meet pre-laboratory requirements. Other field study is expected as well.

### **CD 2813 EARLY CHILDHOOD CENTER PERSONNEL DEVELOPMENT & MANAGEMENT**

*Prerequisite: (R) (W) Earned at least a "C" in CD 2113, CD 2153, CD 2333, CD 2353, CD 2363, ENGL 1113.*

**3 CREDITS** This course is for individuals wishing to improve their management skills with personnel working in early care and education programs. Students will examine the principles, procedures and organizational techniques used in the development and management of personnel including employment practices, employee assessment and evaluation, orientation, training, related federal and state legislation and regulations, diversity, employee/employer relations, compensation, advocacy, ethics, and leadership.

### **CD 2833 EARLY CHILDHOOD CENTER FINANCIAL PLANNING AND MANAGEMENT**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, Earned at least a "C" in CD 2113, CD 2153, CD 2333, CD 2353, CD 2363, ENGL 1113.*

**3 CREDITS** This course is for individuals wishing to improve their skills in designing and managing budgets and financial plans for early care and education programs. Students will have practical experience utilizing guidelines and tools for creating budgets as well as other financial issues pertinent to the field. Other content will include governmental regulations as they pertain to budgets, insurance, customer service, collection issues, financial policies and procedures, fund raising, and government programs and their relationships to financial management of early care and education programs.

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## **CLINICAL RESEARCH COORDINATOR**

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### **CRC 1103 INTRODUCTION TO CLINICAL RESEARCH**

*Prerequisite: (R) (W) Meet the basic requirements for admission to the clinical research program which are assessment of entry-level skills and educational readiness in the topics of reading and reasoning, writing, mathematics, and science. Competency in basic computer skills or CS 1103 Introduction to computers and applications.*

*Corequisite: ENGL 1113*

**3 CREDITS** The student will demonstrate knowledge of the history of human subject research, evolution of rules protecting human subjects, roles of the clinical research teams, clinical trial phases, and responsibilities of clinical research organizations.

### **CRC 1112 VITAL SIGNS AND VENIPUNCTURE**

*Prerequisite: BIO 1414*

**2 CREDITS** The student will 1) successfully measure blood pressure, pulse rate, and temperature, 2) draw intravenous blood, 3) perform human tissue and fluid storage procedures, and 4) utilize universal precautions for handling biological materials.

### **CRC 1203 MEDICAL ETHICS AND CLIENT CARE**

*Prerequisite: CRC 1103*

**3 CREDITS** The student will be able to describe the fundamentals of ethical principles involving human research subjects, understand informed consent and the role of the Internal Review Board, and identify vulnerable populations.

## CRC 1303 CLINICAL TRIALS AND RESEARCH REGULATIONS

*Prerequisite: CRC 1103*

**3 CREDITS** The student will receive and overview of federal and international guidelines governing clinical research and drug trials, including Good Clinical Practices and International Council on Harmonization guidelines. An emphasis will be placed on understanding of research organization compliance, responsibilities of the Internal Review Board and the Health Insurance Portability and Accountability Act (HIPAA). The student will identify and complete required regulatory forms, define human subject protection guidelines, compare federal versus international guidelines for clinical research and discuss conflict of interest issues.

## CRC 1503 CLINICAL TRIALS AND RESEARCH INTERNSHIP I

*Prerequisite: CRC 1203; CRC 1303*

**3 CREDITS** Students will shadow clinical research teams for four weeks at a private or university clinical research facility. Topics learned in the classroom will be demonstrated in an actual clinical research setting, giving the student exposure to a real-world setting while learning practical applications.

## CRC 2003 CLINICAL DATABASE APPLICATIONS

*Prerequisite: CRC 1103*

**3 CREDITS** The student will demonstrate mastery of the concepts of clinical research data management systems, quality assurance, data confidentiality and security, accurate preparation of case reports.

## CRC 2103 CLINICAL RESEARCH DESIGN

*Prerequisite: CRC 1203; CRC 1303*

**3 CREDITS** Students will acquire a basic knowledge of research design methodologies, data organization and presentation, participant eligibility, adverse event documentation, site visit and audit preparation, and budget design.

## CRC 2113 CLINICAL RESEARCH SITE MANAGEMENT

*Prerequisite: CRC 2103*

**3 CREDITS** The student will acquire a basic knowledge of research site organization, operation and management. The student will learn the process involved in grant applications, study initiation, documentation requirements, and site evaluations. Emphasis will be placed on defining process flow and interactions with Institutional Review Boards, sponsors, regulators, investigators, and the community.

## CRC 2203 PATHOPHYSIOLOGY

*Prerequisite: CHEM 1123; BIO 1414; AHP 1013*

**3 CREDITS** The student will utilize critical thinking models to understand the dynamic aspects of human health and disease processes. The student will develop a foundational knowledge of the pathogenesis and clinical manifestation of disease in order to work effectively with subject data and communicate with other clinical research professionals.

## CRC 2213 PHARMACOLOGY FOR CLINICAL RESEARCH

*Prerequisite: CHEM 1123; BIO 1414*

**3 CREDITS** The student will correctly spell names of major drugs, place major drugs into correct therapeutic categories and identify indications, side effects, and trade and generic names. The student will identify and discuss the purpose of nutritional products, blood modifiers, hormones, diuretics, diabetes medications, cardiovascular agents, respiratory drugs, and gastrointestinal agents

## CRC 2313 CLINICAL PROTOCOL DESIGN

*Prerequisite: CRC 2103; CRC 2113*

**3 CREDITS** Through study, discussion, and classroom activities the student will identify different research designs, master the rules for writing protocols, understand ethical issues involved in research protocol design, and develop the skills to design data collection forms.

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## COMMUNICATIONS

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### COM 1000 SPECIAL TOPICS

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other communications courses. Each course will cover a specific topic and may be repeated with a change in content.

### COM 1103 EFFECTIVE READING

*Prerequisite: (R) or by evaluation. §*

**3 CREDITS** The student will improve reading rate while maintaining or improving comprehension. The student will study conventional patterns of written material in order to improve comprehension and retention. Individual contracts allow students to focus on specific aspects of reading: speed, comprehension skills, vocabulary, study reading, or reasoning/thinking skills.

*General Education Course*

### COM 1123 INTERPERSONAL COMMUNICATIONS

*Prerequisite: (R) (W)*

**3 CREDITS** The student will be able to identify why certain things happen as they do when two or more individuals come together to communicate for a specific purpose. The student must attest to his or her ability to understand the principles of interpersonal communication with emphasis on dyads, small groups, analysis of communication models and nonverbal communication, applying understanding to the major types of interpersonal communication problems in the work environment and in daily human relations.

*General Education Course*

### COM 1323 ORAL INTERPRETATION

*Prerequisite: (R) (W)*

**3 CREDITS** Through a series of performance activities, the student will demonstrate comprehension of the principles of oral interpretation of literature, emphasizing an understanding of the author's meaning along with implementing techniques for the communication of that meaning to an audience.

### COM 2213 INTRO TO PUBLIC SPEAKING

*Prerequisite: (R)*

**3 CREDITS** Given the principles of effective listening and speaking, the student will assimilate those skills into his or her physical and psychological worlds. After being exposed to public, business and professional speaking, the student will apply the principles of invention, organization, style, and delivery through practical exercises and will use the principles of rhetorical criticism in discussing speeches delivered in class.

*General Education Course*

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## COMPUTER-AIDED TECHNOLOGY

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### CAT 1000 SPECIAL TOPICS

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**VARIABLE 1-6 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other computer-aided design and design courses, but which are beneficial in providing a better understanding of drafting and design. Enrollment may be repeated with a change of topic.

### CAT 1013 CREATIVITY AND DESIGN

*Prerequisite: (R), (W), MATH 0103 or adequate math placement test score.*

**3 CREDITS** This course combines theory and problem-solving assignments to introduce students to the main concepts of creativity and design. Throughout this course students will exam the principles of design and critical thinking skills that lead to creative solutions. Within this collaborative learning environment students will complete hands on activities that stimulate innovation and promote life long learning.

### **CAT 1023 EVOLUTION OF GAME TECHNOLOGY**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** This course provides a historical and critical approach to the evolution of computer and video game design from its beginnings to the present. The student will learn the history of the industry and its continuing trends. Through analysis and example the student will learn why people play games, the game interface, design cycles, game genres, game-related technology and the possible futures of the industry.

### **CAT 1033 PRINCIPLES OF ANIMATION**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** This course provides a historical and critical approach to animation from early black-and-white cartoons to modern 2D and 3D productions. It includes aesthetic theory and critical analysis of processes and techniques involved in the construction of traditional and computer based animation sequences.

### **CAT 1043 ENGINEERING PRINCIPLES**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** The student will use computational techniques and computer-aided drawing to create, analyze and graphically represent solutions to architectural and engineering problems, reflecting national, international and professional norms and standards. The student will be able to describe and demonstrate familiarity with the functions and responsibilities of research, manufacturing, construction and quality assurance involved in the solutions of a variety of engineering and architectural problems.

### **CAT 1053 MANUFACTURING MATERIALS AND PROCESSES**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 1043 or by evaluation. §*

**3 CREDITS** Students will learn basic concepts of the properties, behaviors and proper application of materials used in manufacturing and construction. The Student will discuss and demonstrate various manufacturing, fabrication, assembly, handling and finishing processes.

### **CAT 1214 COMPUTER-AIDED DESIGN (CAD)**

*Prerequisite: (R) Math 0103 or adequate math placement test score.*

**4 CREDITS** The student will learn and demonstrate the proper use of computer-aided design software as a design tool in fields such as Engineering, Architectural and Multimedia. Emphasis will be on computer-aided design fundamentals such as creating, editing and printing of 2D computer-aided design documents. The student will demonstrate his or her understanding of the structure, use and development of computer-aided design documents by correctly creating, using and storing computer-aided design documents.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1223 GAME DEVELOPMENT AND DESIGN CONCEPTS**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** This course will introduce students to the concepts and tools used to create 2D games. Using a drag and drop system, students will build and test their interactive games that reflect the design mechanics of historical games.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1233 2D COMPUTER ANIMATION**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 1033 or by evaluation. §*

**3 CREDITS** In this class students will apply basic animation principles to produce a sequence using industry leading 2D animation computer software. Emphasis will be placed on timing, performance and creativity.

### **CAT 1253 CAD 3D MODELING**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 1043 and CAT 1214 or by evaluation. §*

**3 CREDITS** The student will use Computer-Aided Design software to create 3-dimensional graphics. The student will demonstrate the ability to define 3D workspaces and viewing positions. The student will use various 3D drawing tools to

create 3D objects as surfaced and solid models. The student will also develop rendered bitmap images and use them in professional drawings. Emphasis will be placed on the creation of 3D models from 2D data and 2D detail drawings from 3D data.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1313 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEM (GIS)**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** Students will learn fundamental concepts in Geographic Information System (GIS). The student will be introduced to introductory content on typical business and technical applications, data, software, and techniques used to accomplish GIS projects. Students receive hands-on experience with global positioning system (GPS) hardware and ArcGIS software.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1323 INTRODUCTION TO GLOBAL POSITIONING SYSTEMS (GPS)**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate the ability to use GPS technology for collecting, processing, and analyzing spatial and non-spatial data. The student will learn and apply GPS theory and techniques through computer laboratory assignments, and field survey experiences.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1413 CAD HARDWARE AND SOFTWARE**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate his or her ability to understand the purposes and advantages of using networks, the Internet and operating systems in computer-aided design. The student will be introduced to computer-aided design hardware, software, networks, and operating systems as an integral part of computer-aided design productivity.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 1513 DIGITAL IMAGING**

*Prerequisite: Math 0103 or adequate math placement test score, CS 1103 or CAT 1413 or by evaluation. §*

**3 CREDITS** Students will develop both technical skills and creative techniques in a project-based learning environment. Many aspects of digital imaging will be applied including digital cameras and scanners, image retouching and manipulation, selection, layering, color correction, channels, paths, and filters.

*Note: This course satisfies the computer proficiency requirement.*

### **CAT 2000 SPECIAL TOPICS**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**VARIABLE 1-6 CREDITS** The student will demonstrate competencies with subjects not covered in other program courses. Each course will cover a specific topic and may be repeated with a change in content.

### **CAT 2013 GEOMETRIC DIMENSIONING AND TOLERANCING**

*Prerequisite: (R) Math 0103 or adequate math placement test score, CAT 2540 (minimum of three credit hours)*

**3 CREDITS** This course will introduce the student to the concepts of geometric dimensioning and tolerancing. The coursework will focus on recognition and understanding of geometric tolerancing terms and symbols. The student will interpret and apply the basic geometric tolerancing techniques.

### **CAT 2023 DESIGN MECHANICS**

*Prerequisite: (R) (W) Math 1613, 15 credit hours of CAT, PHYS 1114 or PHYS 1314*

**3 CREDITS** The student will analyze coplanar force systems and calculate moments of inertia, centroids, tensile stresses. The student will demonstrate an understanding of the relationship between stress and strain, basic properties of materials and shear, bending and moment diagrams. This course is designed as an applied static's and strength of materials course for technicians utilizing algebra, trigonometry and analytic geometry.



**CAT 2113 CAD MANAGEMENT AND STANDARDS**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 1253 or by evaluation. §*

**3 CREDITS** The student will demonstrate the ability to manage and maintain a Computer-Aided Design System. The student will demonstrate his or her ability to handle problems in the Computer-Aided Design office related to organization, finances, communication, hardware, software, training and limited resources by providing written, structured solutions to Computer-Aided Design office problems. The student will be able to develop, apply and maintain a Computer-Aided Design standards manual defining the operational parameters necessary for a profitable and efficient Computer-Aided Design operation. Emphasis will be on organizing data input, drawing output, data exchange and networking.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2143 DIGITAL VIDEO EDITING**

*Prerequisite: (W), MATH 0103 or adequate math placement test score, CS 1103 or by evaluation. §*

**3 CREDIT HOURS** This course will focus on advanced projects in video editing and motion graphics. Students will develop both technical and creative skills in non-linear editing, compositing, special effects, camera movements and cinematic points of view, and titling and motion graphics.

**CAT 2163 CAD PROGRAMMING AND AUTOMATION**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CAT 1253 or by evaluation. §*

**3 CREDITS** The student will use embedded programming languages such as AutoLISP and Visual Basic to automate the drafting and design process. Emphasis will be placed on the development of parametric drawing programs. The student will demonstrate his or her ability to understand Computer-Aided Design automation by writing computer programs that can be used in the Computer-Aided Design industry.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2223 GAME LEVEL DESIGN**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CAT 1223*

**3 CREDITS** This course will introduce students to the concepts and tools used to create levels for games. The course will incorporate level design, environment theory, concepts of linear and non-linear game balance, low and high polygon modeling, play testing and storytelling. Using user-friendly toolsets based on current industry title game engines, students will build and test "modification" (MOD) levels that reflect design concepts.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2313 INTRODUCTION TO SPATIAL ANALYSIS**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CAT 1313 or by evaluation. §*

**3 CREDITS** This course is designed to expose students to various components of spatial analysis. Emphasis is placed on modeling and decision making with the use of spatial data. Upon completion, students will be able to utilize common GIS techniques to solve complex spatial problems.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2334 PLANE SURVEYING**

*Prerequisite: (R) (W) MATH 1613 or by evaluation. §*

**4 CREDITS** The student will be introduced to maps, survey measurement techniques and computations related to distances, elevations and traverse surveys. The student will study topics related to topographical, construction and boundary surveying. Field laboratory work is required.

**CAT 2533 3D RENDERING AND DESIGN VISUALIZATION**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** The student aspiring to become an artist, designer or other professional using 3D computer graphics will be able to create, generate or integrate 3D computer graphics. The student will demonstrate a fundamental understanding of how the computer can be used to create 3D computer renderings. These renderings could be related to either technical design, fine art or applied

art. Emphasis will be on using application software (primarily 3D modeling and rendering programs) in the development of modeling logos, 3D scenes, textures, lighting, atmosphere effects, and basic animation.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2540 APPLICATIONS IN CAD**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 1043 and CAT 1214 or by evaluation. §*

**VARIABLE 1-8 CREDITS** The student will use a Computer-Aided Design System to produce solutions to typical problems encountered in industry. The student will demonstrate his or her ability to understand the principles of design, visualization, projection, analysis and product quality by producing a set of working drawings and presenting their work to a group of their peers. This course may be repeated with a different content.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2633 3D ANIMATION AND SPECIAL EFFECTS**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 2533 or by evaluation. §*

**3 CREDITS** The student will use professional techniques to create photo-realistic renderings, advanced physical-based and character animations, interactive media and Web development, 3D gaming and 3D virtual environments. This course will enhance the abilities of artists, designers and other professionals using 3D computer-created, generated, or integrated graphics. Emphasis will be on the development of professional techniques in the area of 3D computer graphics.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2703 PRACTICUM**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, 12 hours of CAT or by evaluation. §*

**3 CREDITS** The Practicum is a course designed to monitor students in an on-site job location. The student will report to and receive supervision by the employer during the course of the semester. The student will demonstrate the ability to work effectively in a commercial setting, toward satisfying objectives prescribed by the instructor and the participating employer. Work objectives will be consistent with meaningful career learning experiences.

**CAT 2733 3D CHARACTER DESIGN AND ANIMATION**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, CAT 2533 or by evaluation. §*

**3 CREDITS** This is a support-oriented course in which the student will learn and use skills specific to creating 3D character models and character animation in the fields of television, movies, advertising, multimedia, and gaming. Emphasis of the course will be on advanced modeling techniques in the creation of a seamless 3D character design of head, body, clothing, animation concepts in facial expression, internal skeleton control, morphing, dialogue and lip sync, character posing, and locomotion. Discussion topics will include traditional animation techniques, body language, vocabulary, and character physics. This course will enhance the abilities of artists, designers, and other professionals using 3D computer created, generated, or integrated graphics.

*Note: This course satisfies the computer proficiency requirement.*

**CAT 2924 DESIGN PROJECT**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, 15 hours of CAT*

**4 CREDITS** In this capstone course of the Computer-Aided Technology Program the student will demonstrate the collected knowledge, skills and techniques acquired in the program courses by creating and presenting a representative project to a panel of students, instructors and representatives from industry. The project must be an original design of the student. The project must reflect the standards relative to the project's nature and the program emphasis. The student must assemble and create components, choose the proper presentation medium, and present the project in a professional manner.

*Note: This course satisfies the computer proficiency requirement.*

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## COMPUTER SCIENCE

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### CS 1000 SPECIAL TOPICS

*Prerequisite: (R) Math 0203 or adequate math placement test score.*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other computer science courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### CS 1103 INTRODUCTION TO COMPUTERS AND APPLICATIONS

*Prerequisite: (R) Math 0103 or adequate math placement test score.*

**3 CREDITS** This hands-on course affords students a basic understanding of computers and their application. Upon completion of this course, the student will be able to demonstrate the ability to use a computer operating system, an office suite, productivity tools, as well as the Internet at an introductory level.

*General Education Course*

*Note: This course satisfies the computer proficiency requirement.*

### CS 1143 BEGINNING PROGRAMMING

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score.*

**3 CREDITS** Designed for Computer Science majors, this course affords students a basic understanding of computer programming. Students will utilize accepted programming concepts and perform number system conversions and arithmetic. In addition, they will design and code structured modular programs using design tools such as hierarchy charts, flowcharts, and pseudocode.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1153 INTRODUCTION TO COMPUTING TECHNOLOGIES

*Prerequisite: (R) Math 0103 or adequate math placement test score.*

**3 CREDITS** Students will learn fundamental concepts of hardware and software prior to learning tools of support technicians. Topics will include the computer architecture, the instruction execution cycle, I/O and storage. In addition, students will learn basics of digital electronics, how to perform mathematical operations and conversions on multiple numbering systems, develop fundamental problem-solving skills for troubleshooting, and investigate career opportunities within the information technology industry.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1333 DATABASE MANAGEMENT APPLICATIONS

*Prerequisite: (R) Math 0203 or adequate math placement test score.*

**3 CREDITS** The student will use a selected database management program to create and edit database files. The student will also search, organize, and build reports, forms, and templates with the database files.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1343 SPREADSHEET APPLICATIONS

*Prerequisite: (R) Math 0303 or adequate math placement test score.*

**3 CREDITS** Using selected spreadsheet software on a microcomputer, the student will apply the basic theoretical and practical concepts of an electronic spreadsheet as used in business applications. Study will include the design and creation of worksheets, templates, graphs, macros, and other options as they apply to the software being used.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1353 INTRODUCTION TO OPERATING SYSTEMS AND HARDWARE

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CS 1103.*

**3 CREDITS** Students will learn to install, configure and troubleshoot several versions of the Windows operating system and the hardware these operating systems run on. A foundational knowledge in the following important areas will be developed using a combination of lectures and interactive activities: identifying Windows desktop components; identifying hardware components; procedures for installing software and hardware; networking capabilities of the Windows operating

system and steps to connect to a network; basic Internet protocols and terminologies and the procedures for establishing an Internet connection; and recognizing common problems and the procedures to resolve them.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1363 DIGITAL MEDIA DEVELOPMENT

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score,*

*Prerequisite or Corequisite: CS 1103.*

**3 CREDITS** This hands-on course affords students a basic understanding of industry standard design applications. Upon completion of this course, the student will be able to demonstrate the ability to create computer illustrations, graphics, page layouts, animations, video and audio, at an introductory level.

*Note: This course satisfies the computer proficiency requirement.*

### CS 1413 IT TECHNICIAN

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CS 1103*

**3 CREDITS** Students will learn to perform the following tasks through class lectures and hands-on projects: Hardware and Operating Systems installation, configuration, diagnosing, preventive maintenance and basic networking. This course will also cover IT areas in: security, safety and environmental issues, and communication and professionalism.

### CS 2000 SPECIAL TOPICS

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**VARIABLE 1-6 CREDITS** The student will demonstrate competencies with subjects not covered in other computer science courses. Each course will cover a specific topic and may be repeated with a change in content.

### CS 2113 COMPUTER-BASED INFORMATION SYSTEMS

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Covers theory and practice for the design and use of computer-based information systems in organizations, with a focus on the relational database. Student projects will include designing and implementing relational database applications and designing a web page.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2123 ASSEMBLY

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143 or by evaluation. §*

**3 CREDITS** The student will demonstrate an understanding of the structure and operation of assemblers. Student will use IBM mainframe assembly language to solve programming problems involving Input/Output definitions, Loops, Decimal and fixed point arithmetic, register operations, control structures and report editing.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2143 DIGITAL VIDEO EDITING

*Prerequisite: (R) Math 0203 or adequate math placement test score, CS 1363.*

**3 CREDITS** Students will develop both technical skills and creative techniques in a project-based learning environment. Many aspects of digital editing will be applied including digitizing audio and video, the composition of computer-generated graphics and animation, multiple audio layers, title overlay, and special effects.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2153 SUPPORTING OPERATING SYSTEMS

*Prerequisite: (R) Math 0203 or adequate math placement test score, CS 1353 or by evaluation. §.*

**3 CREDITS** Students will learn the procedures for installing, configuring and maintaining a Windows Operating System in a business environment. Real-world examples and interactive activities are used to reinforce key concepts such as: Managing files and folders, printers, storage devices and display devices; desktop user environments; user profiles and networking.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2163 JAVA

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143 or by evaluation. §*

**3 CREDITS** Student will develop object-oriented Java applications and applets, which demonstrate comprehension of fundamental programming structures,

object-oriented programming, graphics, event handling, interface components, programming for the Internet, data structures, and exception handling.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2173 ORACLE

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143*

**3 CREDITS** Using Oracle as a platform, students will learn relational database concepts, sound database design and development techniques, and SQL commands. Topics include how to create and modify database tables; retrieve data from database tables; use subqueries to retrieve data; use table constraints, sequences, indexes, synonyms, views and functions; create users and assign privileges to users; create printable reports through SQL\*Plus commands; practice SQL statement tuning.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2183 LINUX

*Prerequisite: (R) Math 0203 or adequate math placement test score, CS 1353 or CS 1153 or by evaluation. §*

**3 CREDITS** This course is an introduction to the Linux operating system for users. It is designed for those with a DOS/Windows operating system background with little or no knowledge of Linux. Topics include the development of Linux; basic Linux operating system concepts; a comparison of Linux to MS Windows; frequently used Linux programs and utilities, shells, editors, and tools; X window GUI and applications; Linux and the internet; setting up Apache web server software; basic HTML and CGI programming for Linux; use of virtual machine software to create virtual machines of guest operating system on top of host operating system.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2193 SUPPORTING DESKTOP APPLICATIONS

*Prerequisite: (R) Math 0203 or adequate math placement test score, CS 1353.*

**3 CREDITS** Students will learn how to install, configure and support Microsoft Office applications running in a Microsoft Windows environment. Real-world examples and interactive activities are used to reinforce the following key concepts: configuring Internet Explorer and Outlook Express; resolving issues related to customizing Office Application; migrating from Outlook Express to Outlook; identifying and troubleshooting network problems; configuring Office security settings; and monitoring security vulnerabilities and updates.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2223 SYSTEMS ANALYSIS AND DESIGN

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, ENGL 1113 and a 2000 level programming language.*

**3 CREDITS** Students will investigate and participate in the analysis and design of information systems through application of the Systems Development Life Cycle. Topics include the role of the analyst, review of common business systems, preparation of data-gathering instruments, database design and normalization and module design. Computer Aided Software Engineering (CASE) tools such as data dictionary, data flow diagramming, data modeling, and structure charts will also be covered.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2303 NETWORKING TECHNOLOGIES

*Prerequisite: (R) Math 0203 or adequate math placement test score, CS 1353.*

**3 CREDITS** Students will learn how to install, configure, and troubleshoot basic networking hardware, protocols, and services and to describe the features and functions of networking components. A foundational knowledge in the important areas of media and topologies, protocols and standards, network implementation, and network support will be developed using a combination of lectures and interactive assignments.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2363 C++

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2163.*

**3 CREDITS** This course is a continuation of the study of object-oriented programming covered in CS 2163 Java. Students will use C++ to write programs that demonstrate comprehension of the advanced object-oriented features of the C++ language and of common data structures. Topics include pointer manipulation, overloaded operators, friends, exception handling, templates, linked lists, stacks, queues, trees, and time complexity associated with sorts and searches.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2373 IPHONE/IPAD SOFTWARE DEVELOPMENT

*Prerequisite: (R) CS 1143*

**3 CREDITS** Students will learn the skills to develop iOS software applications on Apple mobile devices such as iPhone/iPad/iPod Touch. Topics covered include Objective C, iOS architecture, Cocoa Touch APIs, Apple Integrated Development Environment Xcode, Interface Builder, secure coding in iOS, and other related Apple SDK frameworks. Students will also learn how to download iOS applications to Apple mobile devices.

### CS 2403 COMPUTER SUPPORT SERVICES

*Prerequisite: (R) ENGL 1113 Math 0203 or adequate math placement test score and 9 credit hours of Computer Science courses.*

**3 CREDITS** Students will demonstrate their understanding of planning, implementing, and maintaining a support center for both internal and external users of computer hardware and software. The main topics will include: the Help Desk, design of hardware and software specifications, performing a needs assessment, design of evaluation instruments, creation of both technical and non-technical documentation, working with customers in a support role, and ethical standards for the computing professional.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2413 WEB SITE DEVELOPMENT

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score, Prerequisite or Corequisite: CS 1103.*

**3 CREDITS** Students will develop the skills needed to create a Web site for personal or professional use. Design considerations will include accessibility standards, navigation techniques, audience needs, browser/platform concerns, and connection speeds. A combination of current technologies and Web page authoring software will be utilized for topics such as: building, formatting, enhancing, and publishing pages; maintaining a Web site; manipulating graphics; and incorporating additional items such as, CSS and JavaScript.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2433 DIGITAL MEDIA SCRIPTING

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will develop both technical skills and creative techniques in a project-based learning environment. The student will learn to script in icon-based and command-based authoring languages to create interactive digital media and online applications.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2443 SQL SERVER

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143 or by evaluation. §*

**3 CREDITS** Students will learn terms, concepts and features needed to work with most relational databases. Using SQL Server databases and tools, they will learn concepts on how to design a database, retrieve data from and manipulate data in a database. They will also learn SQL programming and will be able to work with database features that will include views, stored procedures, functions, triggers and others.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2453 VISUAL BASIC

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143 or by evaluation. §*

**3 CREDITS** The students will use Visual Basic to create object-oriented, event-driven programs. This course teaches the students to handle the visual interface and also learn programming concepts that include objects, decisions, loops, dialog boxes, arrays, menus, subs, functions, files, simple data access and various other programming topics as they apply to Visual Basic.

*Note: This course satisfies the computer proficiency requirement.*

### CS 2463 ADVANCED JAVA

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2163.*

**3 CREDITS** Student will develop Java applications and applets, which demonstrate comprehension of advanced programming structures and practices, object-oriented programming, fundamental data structures (arrays, linked lists, stacks and queues), SWING, Java Beans, database programming (JDBC), and distributed computing (Sockets/RMI).

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2503 NETWORK ADMINISTRATION**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CS 1353.*

**3 CREDITS** The students will use a network operating system to create and manage a local area network. The topics to be covered include creating and administering user and group accounts, managing network resources and administering permissions for files and folders, setting up and administering the printing environment, using the auditing functions, backing up and restoring files and folders.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2513 CLIENT-SIDE PROGRAMMING**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2413 and CS 1143.*

**3 CREDITS** Students will create dynamic web applications using client-side programming. A combination of current scripting/programming languages and web page authoring software will be utilized for topics such as: using the Document Object Model, coding event handlers, validating user input, manipulating graphics, and creating interactive web pages.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2553 ADVANCED VISUAL BASIC**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2453.*

**3 CREDITS** Students will expand their knowledge of Visual Basic as used in business applications both for Windows and for the Web. Included will be topics such as advanced controls, MDI programming, collections, object-oriented programming, multi-tier applications, data access, ADO.Net, ASP.Net, and report writing.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2563 C#**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2163.*

**3 CREDITS** Students will develop C# programs using the .NET framework that demonstrate comprehension of language syntax, fundamental program structures, object-oriented programming, windows applications, web applications, and database applications. Students will use ADO.NET, XML, ASP.NET, SOAP, and REST to create their applications.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2573 ORACLE DATABASE ADMINISTRATION**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 2173 or CS 2443.*

**3 CREDITS** Students will develop the skills needed for database administration. Topics covered include software installation, the creation of new databases, database architecture, management of database files, administration of user accounts, roles, privileges and profiles, database performance monitoring, and database backup and recovery strategies.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2610 INTERNSHIP**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, 15 credit hours of Computer Science courses.*

**1-3 CREDITS** A practicum course intended to provide the student with work experience in various areas in his/her major under the supervision of an experienced technician/professional from the business community. This course may be repeated.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2623 SERVER-SIDE PROGRAMMING**

*Prerequisite: (R) (W) Math 0303 or adequate math placement test score, CS 1143 and CS 2413.*

**3 CREDITS** Students will create interactive and dynamic web applications using server-side programming. A combination of current scripting/programming languages and web page authoring software will be used for topics such as maintaining state, processing data from the user, creating cookies, and interacting with databases.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2703 INTRODUCTION TO CYBER/INFORMATION SECURITY**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**3 CREDITS** Students will examine the field of information security. This course presents the managerial and technical aspects of information security and addresses knowledge areas of the CISSP (Certified Information Systems Security Professional) certification. Information security is discussed within a real-world context, by including examples of issues faced by today's professionals. This course provides numerous opportunities for hands-on work.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2713 PRINCIPLES OF INFORMATION SECURITY**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will complete a comprehensive overview of network security, with an introduction to a variety of security problems faced by the computing industry. This course is mapped to the CompTIA Security+ Certification Exam. The course covers topics in general security concepts, communication security, infrastructure security, cryptography basics, and operational/organizational security.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2723 SECURE ELECTRONIC COMMERCE**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will learn the fundamentals of secure electronic commerce technology, models and issues. This course includes principles and case studies of secure electronic commerce as well as an introduction to security architectures for secure electronic commerce. These include digital signatures, certificates, and public key infrastructure (PKI). Legal and national policy secure electronic commerce issues are included.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2743 ENTERPRISE SECURITY MANAGEMENT**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will learn the managerial aspects of computer security and risk management for enterprises. Topics include accreditation, procurement, extension and operation principles for secure enterprise information systems. Additional topics are security policy and plan development, contingency, continuity and disaster recovery planning, and incident handling and response.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2753 INFORMATION SYSTEM ASSURANCE**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, (CS 2703 or CS 2713) and (CS 2723 or CS 2743).*

**3 CREDITS** Students will learn design and analysis methods for high assurance information systems. Topics covered will consist of safety, reliability, security, and specification of mission-critical system properties. Software and hardware validation, as well as verification and certification are also included.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2763 NETWORK SECURITY**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, CS 2713 and (CS 2303 or CS 2503).*

**3 CREDITS** Students will participate in a comprehensive study of current and developing communications systems and networks. These include host-based and network-based intrusion detection, anomaly and misuse detection, and network security appliances including firewalls and access control devices. Topics are covered with all networks in mind, including the Internet, PSTN, ATM, Frame Relay Networks, etc.

*Note: This course satisfies the computer proficiency requirement.*

## **CS 2773 SECURE SYSTEM ADMINISTRATION AND CERTIFICATION**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, (CS 2703 or CS 2713) and (CS 2723 or CS 2743).*

**3 CREDITS** Students will learn provisioning, procurement and installation of network, hardware and software systems for mission critical enterprises. System configuration and maintenance, incident handling and response, system certification, testing and validation are also covered.

*Note: This course satisfies the computer proficiency requirement.*

**CS 2783 CYBER FORENSICS**

*Prerequisite:* (R) (W) Math 0203 or adequate math placement test score, CS 2713 and (CS 2723 or CS 2743 or CS 2763)

**3 CREDITS** Student will learn the procedures for the identification, preservation and extraction of electronic evidence. Topics include auditing and investigation of network and host intrusions, and forensic tools and resources for systems administrators and information system security officers.

*Note:* This course satisfies the computer proficiency requirement.

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**DATABASE MANAGEMENT**

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**DBM 1000 SPECIAL TOPICS**

*Prerequisite:* (R) (W) or by evaluation. §

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other Database Management courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 1103 DATABASE THEORY**

*Prerequisite:* (R) (W), Students must have a third party certification in one of the following: CompTIA's A+, CompTIA's NET+, CompTIA's iNET+, Microsoft MCP, Oracle OCP or have completed 18 credit hours of faculty approved computer science course work before beginning the Database Management program of study.

**3 CREDITS** The student will develop an understanding of the concepts of the relational database model. In addition, the student will gain knowledge of database management systems through an introduction to Query-by-Example, Structured Query Language (SQL), database design, services of database management systems, and database administration tasks.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 1313 INTRODUCTION TO SQL**

*Prerequisite:* (R) (W), DBM 1103

**3 CREDITS** The student will demonstrate specific competencies in creating database structures and storing, retrieving, and manipulating data in a relational database using SQL. The student will create blocks of SQL application code. The student will demonstrate through hands-on activities an understanding of the SQL composite and scalar data types and error processing.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 1333 DATABASE ADMINISTRATION**

*Prerequisite:* (R) (W), DBM 1313

**3 CREDITS** The student will demonstrate specific competencies in managing an instance, creating a database, managing database objects, managing users, controlling access privileges, exporting/importing data, and auditing database activities. The student will demonstrate an understanding of instance architecture, database structure, and multinational language support.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2000 SPECIAL TOPICS**

*Prerequisite:* (R) (W) or by evaluation. §

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other Database Management courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2213 PL/SQL PROGRAMMING**

*Prerequisite:* (R) (W), DBM 1103 and DBM 1313

**3 CREDITS** The student will learn Procedural Language/Structured Query Language (PL/SQL). This is Oracle Corporation's procedural extension to SQL, the standard data access language for relational databases. PL/SQL offers modern software engineering features such as data encapsulation, exception handling, information hiding, object orientation. It allows the data manipulation and query

statements of SQL to be included in block-structured and procedural units of code, making PL/SQL a powerful transaction processing language. The students will learn about PL/SQL basics such as PL/SQL language structure, flow of execution and interface with SQL.

**DBM 2313 DATABASE BACK UP AND RECOVERY**

*Prerequisite:* (R) (W), DBM 1333

**3 CREDITS** The student will demonstrate specific competencies in performing backup and recovery operations as well as exporting and importing data. The student will demonstrate an understanding of backup and recovery considerations, database structures, and backup/recovery processes.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2322 DATABASE NETWORKING**

*Prerequisite:* (R) (W), DBM 2313 or by evaluation. §

**2 CREDITS** The student will demonstrate specific competencies in configuring the network connection between the client system and the database server using a variety of strategies. The student will demonstrate an understanding of networking architecture, networking products and tools, and application deployment strategies.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2334 DATABASE PERFORMANCE TUNING**

*Prerequisite:* (R) (W), DBM 2322 or by evaluation. §

**4 CREDITS** The student will demonstrate specific competencies in SQL statement tuning, tuning memory and storage structures, and analyzing performance. The student will demonstrate an understanding of business requirements related to tuning and tuning considerations for different applications.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2353 DATABASE ADMINISTRATION WITH SQL SERVER**

*Prerequisite:* (R) (W), DBM 2332

**3 CREDITS** The student will demonstrate specific competencies in installing Microsoft SQL Server, creating an operation database, performing backup/recovery operations, managing users, managing access privileges, managing resources, database tuning, and importing and exporting data.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2363 UNIX FOR DATABASE ADMINISTRATORS**

*Prerequisite:* (R) (W), DBM 1333

**3 CREDITS** The student will demonstrate specific competencies in using basic UNIX operating system commands to: navigate file systems, manage files and directories, edit files using the VI text editor, and manage users and groups. The student will demonstrate an understanding of the different command shells (Bourne, Korn, C, and Bash) and the organization of typical UNIX file systems.

*Note:* This course satisfies the computer proficiency requirement.

**DBM 2373 DATABASE APPLICATION DESIGN USING CASE**

*Prerequisite:* (R) (W), DBM 1333

**3 CREDITS** The student will demonstrate specific competencies in creating application and database structures using CASE (Computer Aided Software Engineering) tools. The student will demonstrate an understanding of modeling business requirements, modeling data requirements, transforming models into designs, and using data presentation standards.

*Note:* This course satisfies the computer proficiency requirement.

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**DIAGNOSTIC MEDICAL SONOGRAPHY**

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**DMS 1112 PATIENT CARE**

*Prerequisite:* (R) (W)

**2 CREDITS** The student will learn the physical and psychological concepts of patient care. The student will demonstrate routine patient care procedures, professional scopes of practice, and record keeping paperwork pertinent to the clinical setting. The student will develop proper patient care skills and an understanding of the fundamental elements of how an ultrasound department functions. The student will also acquire basic Spanish healthcare phrases.

## **DMS 1122 MEDICAL ETHICS**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will learn the standard ethical theories and apply them to various issues that arise in the health care context, such as euthanasia, abortion, informed consent, confidentiality, genetic testing and intervention, AIDS, distributive justice, and professional gatekeeping. Emphasis will be made on understanding the relationship of current ethical standards in health care delivery.

## **DMS 1213 INTRODUCTION TO ULTRASOUND**

*Prerequisite: (R) (W) AHP 1013 and BIO 1314*

**3 CREDITS** Students will be introduced to the field of sonography, including the history of medical ultrasound, professional and occupational development, and the current uses of ultrasound. Students will identify normal sonographic anatomy in cross section views of the human body, as well as develop an understanding for mechanics, scanning techniques, and protocols.

## **DMS 1233 ULTRASOUND PHYSICS AND INSTRUMENTATION I**

*Prerequisite: (R) (W) MATH 1513*

**3 CREDITS** Students will be familiar with the theoretical aspects of ultrasonic physics and instrumentation and demonstrate the practical application of these principles. Students will focus on the characteristics and properties of ultrasound energy, generation, transmission, and reception as related to ultrasound imaging. Students will investigate physical principles and will be able to understand the production of quality ultrasound images and apply this information to real-time scanning.

## **DMS 1254 ABDOMINAL ULTRASOUND**

*Prerequisite: (R) (W) BIO 1314*

**4 CREDITS** The student will demonstrate an understanding of transabdominal ultrasounds of the abdomen, and will identify the characteristics of normal anatomy, pathology, and exam protocols, related lab values, and imaging processes. The student will identify major organ systems and will recognize the membranes associated with the thoracic and abdominopelvic cavities, as well as explain pathophysiology associated with the abdomen and describe normal and abnormal vascular Doppler patterns of the vascular structures.

## **DMS 1274 OB/GYN ULTRASOUND**

*Prerequisite: (R) (W) BIO 1314*

**4 CREDITS** The student will demonstrate an understanding of transabdominal and transvaginal ultrasounds of the pregnant and non-pregnant female pelvis. Students will identify the appearance and characteristics of normal gynecological anatomy, pathology, pathophysiology, exam protocols, related lab values, and imaging processes. The student will describe the structure of the uterus and identify the normal measurements of the uterus, ovaries, cervix, and endometrium.

## **DMS 1292 ULTRASOUND PHYSICS AND INSTRUMENTATION II**

*Prerequisite: (R) (W) DMS 1233*

**2 CREDITS** Students will identify the areas of ultrasound propagation principles, transducer parameters, interactive properties of ultrasound with human tissue, possible biological effects, types of equipment, and quality control.

## **DMS 1356 CLINICAL ULTRASOUND I**

*Prerequisite: (R) (W) Prerequisite: DMS 1213, Corequisite: DMS 1254*

**6 CREDITS** The student will perform basic scanning techniques in abdominal sonography. This course is a practical application in a clinical setting and the student will be observed in all clinical duties performed in the Ultrasound department. Twenty-four (24) hours a week in an ultrasound department is required.

## **DMS 2216 CLINICAL ULTRASOUND II**

*Prerequisite: (R) (W) DMS 1356*

**6 CREDITS** The student will observe and perform scans in the following specialty areas: abdomen, small parts, and OB/GYN. This course is a continuation of clinical application and the student will spend on average, twenty-four (24) hours per week in an ultrasound department observing and scanning.

## **DMS 2221 SMALL PARTS SONOGRAPHY**

*Prerequisite: (R) (W) BIO 1314*

**1 CREDIT** The student will identify normal anatomy of small parts such as the thyroid, parathyroid, breast, prostate, and scrotum. The student will describe the function and physiology of the small parts, examine pathology, pathophysiology, and recognize tests and values associated with abnormalities and pathologies of these organs. Students will demonstrate a thyroid exam in a laboratory and perform Doppler during thyroid, parathyroid, breast, prostate, and scrotum ultrasound exams.

## **DMS 2316 CLINICAL ULTRASOUND III**

*Prerequisite: (R) (W) DMS 2216*

**6 CREDITS** The student will demonstrate competency in the practical clinical application of ultrasound techniques in abdominal, OB/GYN, small parts, and a special emphasis will be placed in general vascular Sonography. Twenty-four hours per week in a hospital ultrasound department is required.

## **DMS 2321 BIOEFFECTS**

*Prerequisite: (R) (W) DMS 1292*

**1 CREDIT** The student will demonstrate an understanding of the biological effect processes, related to thermal, mechanical, and cavitation bioeffect principles, as well as identify regulations, recommendations, and safety guidelines. The student will be familiar with the methods to reduce patients' risk for bioeffects, using the various techniques of measuring bioeffects.

## **DMS 2332 VASCULAR SONOGRAPHY**

*Prerequisite: (R) (W) BIO 1314*

**2 CREDITS** The student will develop an understanding of non-invasive vascular ultrasound. The student will develop basic skills and knowledge in the following areas: image orientation, patient set up, and sonographic performance of vascular exams. Special emphasis will be placed on carotid exams, as well as venous and arterial exams of the extremities. Normal and disease processes of the vascular system will be discussed.

## **DMS 2371 ADVANCED SONOGRAPHY**

*Prerequisite: (R) (W) DMS 1254, DMS 1274*

**1 CREDIT** The student will identify normal and pathologic states of pediatric and vascular anatomy during ultrasonic examination. The student will identify and describe the normal/abnormal sonographic appearance of neonatal brains, neonatal surgical conditions and transcranial Doppler, as well as assess pertinent information from patients' histories and evaluate patients' pathologies.

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## **DIESEL TECHNOLOGY**

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### **DT 1101 INTRODUCTION TO DIESEL TECHNOLOGY**

*Prerequisite: (R), (W)*

**1 CREDIT** Students will learn about the basic personal and shop safety protocol used in the diesel repair industry that includes hazardous material handling and storage. Students will identify, use and care for hand and power tools commonly found in the diesel repair industry. Students will learn about the history of the diesel industry and explore opportunities for careers and employment in the various areas of the diesel industry

### **DT 1103 PREVENTATIVE MAINTENANCE**

*Prerequisite: (R) (W)*

**3 CREDITS** Students will demonstrate an understanding of the importance of a good preventive maintenance program, the various inspection procedures, federal regulations, and the necessity of keeping correct documentation. Students will perform preventative maintenance services on the various medium/heavy vehicles relating to the electrical/electronic systems, brakes, drive trains, suspension and steering systems, and the tires and wheels.

### **DT 1114 DIESEL ENGINES I**

*Prerequisite: DT 1103*

**4 CREDITS** Students will be able to identify the various elements associated with diesel engines and equipment such as lubricants, oil and filter replacement, identify and inspect components of the cooling systems and possible causes of engine

overheating. In addition, student will demonstrate the procedures for inspecting, diagnosing and repairing problems with the air flow system and fuel system.

### **DT 1124 DIESEL ENGINES II**

*Prerequisite: DT 1114*

**4 CREDITS** Students will learn about the construction of diesel engines and related components. Students will service and repair diesel engines, diagnose causes of engine fuel, oil, coolant, air leaks, engine noises and vibrations, and determine appropriate solutions and repairs. Students will disassemble, repair and reassemble a diesel engine.

### **DT 1144 DIESEL ELECTRICAL/ELECTRONICS I**

*Prerequisite: DT 1101*

**4 CREDITS** Students will learn about magnetism, basic electrical circuits and schematics associated with the operation of diesel engines. Students will solve problems, test, and replace defective fuses, fusible links, circuit breakers, relays and solenoids. Students will perform tasks on the battery system, starter system, charging system, and ignition system.

### **DT 1214 DIESEL ELECTRICAL/ELECTRONICS II**

*Prerequisite: DT 1144*

**4 CREDITS** Students will learn about the evolution of electronics as it pertains to the diesel industry. Students will learn the advantage of integrated circuits over transistorized circuits, and use appropriate test equipment to check continuity in electric circuits. Students will test and retest warning devices, diagnose intermittent, high, low and no gauge readings. Students will also interface with vehicle on-board computers and perform diagnostic procedures to determine needed repairs.

### **DT 1234 MEDIUM/HEAVY EQUIPMENT AND TRUCK BRAKES**

*Prerequisite: DT 1103*

**4 CREDITS** Students will demonstrate an understanding of the operation of air brake systems, and hydraulic brake systems. Student will use problem solving techniques to identify and recommend appropriate options for repair procedures for these systems and related components.

### **DT 2001 CAREER EXPERIENCE**

*Prerequisite: DT 1101*

**1 CREDIT** Students will participate in an on-the-job internship in order to become familiar with the diesel service industry and to develop skills necessary for employment within the diesel industry. This course is an integrated component of the program. Enrollment may be repeated with a change in work emphasis as needed.

### **DT 2002 DIESEL INTERNSHIP AND PROFESSIONAL DEVELOPMENT**

*Prerequisite: DT 1103*

**2 CREDITS** Students will be provided with training in leadership and personal development in order to successfully obtain employment. This course is designed to be delivered as an integrated component within the courses taken by the individual student. Students will spend time in the classroom developing soft skills, while also completing internships within the Diesel industry to gain valuable training and experience.

### **DT 2104 HEATING, VENTILATION AND AIR CONDITIONING**

*Prerequisite: DT 1103*

**4 CREDITS** Students will demonstrate an understanding of the general A/C systems; compressor and clutch, evaporator, condenser and related components. The student will troubleshoot electrical, vacuum and mechanical system failures related to the heating, ventilation and air conditioning system. Student will inspect, test and diagnose and service engine cooling system components.

### **DT 2114 MEDIUM/HEAVY TRUCK AND EQUIPMENT SUSPENSION AND STEERING**

*Prerequisite: DT 1103*

**4 CREDITS** Students will identify and describe various steering systems used on medium/heavy equipment and trucks and inspect, diagnose, and repair steering

problems. Students will perform repairs on suspension systems and perform wheel alignment in accordance with industry procedures.

### **DT 2124 MEDIUM/HEAVY EQUIPMENT AND TRUCK DRIVE TRAINS**

*Prerequisite: DT 1103*

**4 CREDITS** Students will identify the different drive train configurations found in industry. Students will demonstrate an understanding of the different transmission configurations found in industry and identify the components, identify problems, and make necessary repair action plans. Students will identify and repair drive shafts, universal joints, drive axles, and final drive differentials.

### **DT 2134 MEDIUM/HEAVY EQUIPMENT AND TRUCK HYDRAULICS**

*Prerequisite: DT 1103*

**4 CREDITS** Students will demonstrate an understanding of the general operation system, pumps, filtration, reservoir tanks, hoses, fittings, control valves, and actuators found in hydraulic systems. Students pressure test, articulate cylinder devices as well as make inspections and diagnose problems for necessary repair actions.

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## **ECONOMICS**

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### **ECON 1013 INTRODUCTION TO ECONOMICS**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** This course is an introduction to the fundamental framework economists use to analyze problems. Students will explore the principles by which decisions are made by consumers, businesses and the government. Upon completion of this course will be able to relate the principles of economics to solve everyday problems. Topics covered include scarcity, choice and opportunity cost; demand, supply, market efficiency and structure; consumer utility theory, inflation, unemployment and the effects of government policy and intervention.

*Note: This course will not substitute for ECON 2113 or 2123. Credit toward graduation will not apply for business majors if ECON 1013 is taken instead of ECON 2113 or 2123.*

*General Education Course*

### **ECON 1113 ECONOMIC DEVELOPMENT OF THE UNITED STATES**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**3 CREDITS** The student will examine and discuss the organization and evolution of the economic system of the United States as affected by agriculture, industry and commerce.

### **ECON 2023 STATISTICS FOR BUSINESS AND ECONOMICS**

*Prerequisite: (R) (W) MATH 1743*

**3 CREDITS** Basic statistics course for undergraduate business majors. Introductory statistical methods are presented employing statistical computer software and applications to typical business and economic problems. Topics include descriptive statistics, probability concepts, probability distribution, estimation, hypothesis testing, and introduction to econometric/regression analysis, and correlation.

*Note: Student enrolled in this course may use it as a substitute for BUS 2023. However, BUS 2023 cannot be taken as a substitute for this course.*

### **ECON 2123 PRINCIPLES OF MICROECONOMICS**

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score.*

**3 CREDITS** The student will apply microeconomic theories in analyzing concepts by which business maximizes profit, consumers maximize satisfaction, government allocates goods and services, and international trade affects the domestic economy.

*General Education Course*

### **ECON 2143 PRINCIPLES OF MACROECONOMICS**

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score, ECON 2123 or by evaluation. §*

**3 CREDITS** This course is a continuation of the Principles of Economics involving the production, consumption and distribution of wealth in a market economy, with major emphasis macroeconomics theory, particularly the general

price level, output and income, and interrelations among sectors of the economy, determinants of aggregate demand and aggregate supply, as well as monetary and fiscal policy tools that can be used to achieve particular policy objectives. The basics of international finance will be reviewed.

General Education Course

### **ECON 2203 PRINCIPLES OF INTERNATIONAL ECONOMICS**

*Prerequisite: (W) MATH 0303 adequate math placement test score.*

**3 CREDITS** This course is an introduction to the theory of international trade, commercial policy, preferential trading arrangements, and topics on the balance of payments and the international adjustment mechanism.

### **ECON 2303 MONEY AND BANKING**

*Prerequisite: (R) MATH 0303 or adequate math placement test score, ECON 2123 or by evaluation. §*

**3 CREDITS** The student will discuss problems of economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios.

*(This course is generally offered in the spring semester only.)*

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## **ELECTRONICS**

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### **ET 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other electronics courses, but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### **ET 1014 D.C. / A.C. FUNDAMENTALS**

*Prerequisite: None*

**4 CREDITS** The student will demonstrate a knowledge of principles by solving problems relating to both DC and AC in subjects such as resistive circuits, reactance, impedance, AC circuits and resonance. Laboratory applications are an integral part of this course.

### **ET 1114 SOLID STATE CIRCUITS**

*Prerequisite: (R) (W), ET 1014*

**4 CREDITS** The student will discuss, demonstrate and solve problems relating to various solid state devices and associated circuits such as diodes, transistors, F.E.T.s, power supplies, filters, regulators, and amplifiers. Laboratory applications are an integral part of this course.

### **ET 1124 DIGITAL LOGIC FUNDAMENTALS**

*Prerequisite: (R) (W), ET 1014*

**4 CREDITS** The student will demonstrate digital logic fundamentals by applying digital devices in a laboratory setting and by solving problems related to circuit theory, number systems, and Boolean algebra. Specific devices included are basic gates, combination logic, flip-flops and MSI devices.

*Note: This course satisfies the computer proficiency requirement.*

### **ET 1144 INDUSTRIAL ELECTRONICS**

*Prerequisite: (R) (W)*

**4 CREDITS** The student will demonstrate knowledge of basic industrial electronic principles and devices by solving problems and constructing lab experiments in subjects such as resistive circuits, Ohms law and power, series and parallel circuits, DC and AC circuits, solid state circuits and devices, and operational amplifiers. Common electronics test equipment will be used in the laboratory experiments to explore different electronic circuits and devices.

### **ET 1223 DIGITAL ELECTRONICS**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is an introductory digital electronics course. The student will analyze, construct, test and interface fundamental digital circuits including logic gates, combinational logic circuits, Flip-flops, counters, encoders and decoders, shift registers arithmetic circuits, digital to analog conversions, and analog to digital conversions. The student will also demonstrate a knowledge of numbering systems and integrated circuit specifications.

### **ET 1544 ELECTRONICS SHOP PRACTICES**

*Prerequisite: (R) (W) ET 1014*

**4 CREDITS** The student will use hand tools to construct, solder and desolder electrical circuitry. In addition, the student will use electronic measuring instruments such as oscilloscopes, multimeters, and function generators to measure and record voltages, currents, frequencies, resistances and other circuit values.

### **ET 1604 INTRODUCTION TO ELECTRONICS**

*Prerequisite: (R) (W)*

**4 CREDITS** The student will demonstrate the application of Ohm's Law, power, and the impedance formula and analyze basic solid state circuits. In addition, the student will construct and test voltage dividers and reactive circuits, as well as diode and transistor circuits, using various electronics test equipment.

### **ET 2000 SPECIAL TOPICS**

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-6 CREDITS** The student will demonstrate competencies with subjects not covered in other program courses. Each course will cover a specific topic and may be repeated with a change in content.

### **ET 2014 CONTROL DEVICES**

*Prerequisite: (R) (W), ET 1144*

**4 CREDITS** The student will discuss and demonstrate the characteristics of industrial control devices in the classroom and laboratory. Discussion will include the theory and operation of silicon controlled rectifiers, unijunction transistors, thyristors, operational amplifiers, thermocouples, servomechanisms, and photoelectric devices.

### **ET 2024 COMMUNICATIONS SYSTEMS**

*Prerequisite: (R) (W), ET 1144*

**4 CREDITS** The student will analyze electronic circuits associated with amplitude modulation, frequency modulation, transmission lines, antennas and fiber optics. Practical exercises will be performed in the electronics laboratory.

### **ET 2032 INDUSTRIAL ELECTRICITY**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will learn and apply the fundamentals of industrial electricity such as motor phasing, conductor sizing, three-phase power, conduit bending, and the use of ladder diagrams and test equipment to meet acceptable codes and standards.

### **ET 2044 ELECTROMECHANICAL DEVICES**

*Prerequisite: (R) (W), ET 1144*

**4 CREDITS** The student will demonstrate problem maintenance and troubleshooting procedures on various types of electrical motors and electromechanical systems.

### **ET 2124 CONTROL SYSTEMS**

*Prerequisite: (R) (W)*

**4 CREDITS** The student will discuss and demonstrate the characteristics of an industrial control system consisting of transmitters, controllers, control valves, and transducers. Pneumatics and electronics components are emphasized in this course.



**ET 2214 MICROPROCESSOR INSTRUMENTATION**

*Prerequisite: (R) (W), ET 1144*

**4 CREDITS** The student will demonstrate knowledge of microprocessor based microcontroller applications including input/output interfacing techniques, digital to analog conversions, analog to digital conversions, and basic sensor signal conditioning as related to the instrumentation industry.

**ET 2244 DATA COMMUNICATIONS**

*Prerequisite: (R) (W), ET 1124*

**4 CREDITS** The student will describe digital data networks, buses, interfaces, data communications and data terminal equipment. Laboratory applications are an integral part of this course.

**ET 2320 CAREER EXPERIENCE**

*Prerequisite: (R), Twelve (12) credit hours of electronics or by evaluation. §*

**VARIABLE 1-3 CREDITS** The student will demonstrate the ability to work effectively, in a commercial setting, toward satisfying objectives prescribed by the instructor and the participating employer. Work objectives will be consistent with meaningful career learning experiences.

**ET 2334 DIGITAL LOGIC SYSTEMS**

*Prerequisite: (R) (W), ET 1124*

**4 CREDITS** The student will apply digital fundamentals to the design of logic systems such as counters, arithmetic circuits, memory circuits, analog/digital converters, digital/analog converters, and microprocessors. The student will construct and verify proper operation of actual logic circuits.

**ET 2353 INSTRUMENTATION AND CONTROL I**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will discuss terminology and demonstrate system operations by proper measurement and control techniques of flow, pressure, temperature and level control within the system.

**ET 2363 INSTRUMENTATION AND CONTROL II**

*Prerequisite: (R) (W), ET 2353*

**3 CREDITS** The student will discuss and demonstrate pneumatic logic components within a pneumatic system and integrate each component into a control loop.

**ET 2384 OPERATIONAL AMPLIFIERS**

*Prerequisite: (R) (W)*

**4 CREDITS** The student will apply basic electronic principles to solve problems concerning operational amplifier specifications and applications in inverting and non-inverting amplifiers, summing circuits, differential amplifiers, integrators, differentiators, and other waveshaping circuits. This course also covers various types of power supply regulators and active filters. The student will construct and test circuits in the lab to meet specified operational parameters.

**ET 2414 MICROCOMPUTER SYSTEMS**

*Prerequisite: (R) (W), ET 2334*

**4 CREDITS** The student will use microprocessors and support devices to evaluate microcontrollers and support devices to evaluate microcontroller applications related to the electronics industry. Microcomputer drive capabilities related to input/output interfacing, programming, motion control, A/D and D/A conversions and embedded controller applications will be analyzed and tested.

*Note: This course satisfies the computer proficiency requirement.*

**ET 2632 ELECTRONICS PROJECT**

*Prerequisite: (R)*

**2 CREDITS** The student will demonstrate the knowledge and skills necessary to plan, construct, test, and document an electronics hardware and/or software project which meets accepted industry standards as set forth in manufacturer's data sheets.

**ET 2663 MICROCONTROLLER SYSTEMS**

*Prerequisite: (R) (W), ET 1144*

**3 CREDITS** The student will use microcontrollers to interface with devices such as switches, light emitting diodes, motors, analog to digital devices and temperature transducers. In addition, programming will be an integral part of the curriculum. Laboratory exercises will allow the student to build, program and test a microcontroller system.

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**EMERGENCY MEDICAL SCIENCES**

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**EMS 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W)*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other emergency medical technology courses, but which are beneficial in providing better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**EMS 1018 BASIC EMERGENCY MEDICAL TECHNOLOGY**

*Prerequisite: (R) (W)*

**8 CREDITS** The student will be able to do the following: describe the role of the Emergency Medical Technician in an emergency medical services system, perform patient assessment on patients with traumatic injuries and patients with medical emergencies, manage a multi-casualty incident including triage, correctly manage traumatic injuries to the body and its systems, as well as medical emergencies of varying types and causes, perform lifting and moving techniques and light extrication. Additionally, the student will describe current EMS law as it applies to the EMT. A field and hospital practicum are an integral part of the course, for which liability insurance, a student uniform, and a physical, including certain immunizations, are required.

**EMS 1035 PARAMEDIC CARE I**

*Prerequisite: (R) MATH 0103 or adequate math placement test score, EMS 1018 or by evaluation. §*

*Pre- or corequisite: BIO 1314*

**5 CREDITS** The student will accurately describe the EMS Systems, roles & responsibilities, of the Paramedic within the system; summarize and interpret legal responsibilities according to federal, state and local laws and regulations; wellness, illness/injury prevention, ethics, therapeutic communications, lifespan development, history taking, techniques of physical examination, patient assessment, clinical decision making, communications, & documentation; evaluate their attitudes toward ethics, death and dying, professional interpersonal relationships, and crisis intervention; and complete orientation to advanced training practicum rotations. The student will define medical terms using roots, prefixes, and suffixes. A field and hospital clinical practicum are an integral part of the course. Liability insurance and a student uniform are required.

**EMS 1059 PARAMEDIC CARE II**

*Prerequisite: (R) MATH 0103 or adequate math placement test score, EMS 1018 or equivalent, BIO 1314; EMS 1035 or by evaluation. §*

*Pre- or co-requisite: BIO 1414*

**9 CREDITS** The student will accurately describe airway management/ventilation, venous access, trauma systems, mechanism of injury, hemorrhage & shock, soft tissue trauma, burns, head & facial trauma, spinal trauma, thoracic trauma, abdominal trauma, musculoskeletal trauma, & environmental conditions. The student will integrate fluid therapy and advanced airway care into correct management of the patient with respiratory disorders; and/or trauma to soft tissues, the central nervous system, and the musculoskeletal system. A field and hospital clinical practicum are an integral part of the course. Liability insurance and a student uniform are required.

## EMS 1113 ECG INTERPRETATION AND PROCEDURES

*Prerequisite: BIO 1314*

**3 CREDITS** This course introduces the student to the basics of dysrhythmia interpretation, performance and interpretation of twelve lead ECG to allow the Paramedic to treat the patient with acute myocardial infarction, as well as reviews the anatomy and physiology of the cardiovascular system. This course includes both lecture and laboratory time in which the student may receive hands-on rhythm interpretation practice via use of oscilloscope and paper rhythm strips. The course is designed for paramedic students, graduate nurses, CCU monitor techs, or other healthcare providers with an interest or a need in improving or developing rhythm interpretation skills.

## EMS 1123 PHARMACOLOGY

*Prerequisite: MATH 1513 or APPM 1313; pre- or corequisite BIO 1314*

**3 CREDITS** The student will summarize and correctly interpret the legal standards of drug therapy; identify and correctly interpret actions of emergency drugs; accurately calculate doses, dosage rates, and admixtures; choose correct drugs, doses and routes of administration for emergency patients based on indications, contraindications, standing orders, verbal orders and accepted prehospital care protocols. Rec: BIO 1314; APPM 1313 or MATH 1513

## EMS 2013 EMS OPERATIONS

*Prerequisite: (W), EMS 1018 or equivalent.*

**3 CREDITS** The student will summarize and interpret legal responsibilities of safe ambulance operations in Oklahoma; evaluate psychological and physical factors affecting safe emergency vehicle operations. The student will discuss medical incident command, hazardous materials incidents, crime scene awareness, rescue awareness & operations. The student will demonstrate techniques for gaining access to the patient, disentanglement, patient movement, and preparation for transport; and recognize situations posing threats to patients, EMT's or bystanders and describe correct management of these situations.

## EMS 2169 PARAMEDIC CARE III

*Prerequisite: (W) APPM 1313 OR MATH 1513, EMS 1113, EMS 1123, BIO 1414, EMS 1059 or by evaluation. §*

**9 CREDITS** The student will summarize and correctly interpret federal and state communications regulations; correctly interpret electrocardiograms; and integrate fluid therapy, advanced airway care and drug therapy in prehospital management of adult and geriatric patients experiencing pulmonary, cardiovascular, endocrinology, allergies & anaphylaxis, environmental, genitourinary, acute abdominal, hemorrhagic, substance abuse, and poisoning emergencies. A field and hospital clinical practicum are an integral part of the course. Liability insurance and a student uniform are required.

## EMS 2179 PARAMEDIC CARE IV

*Prerequisite: (W), EMS 1059, APPM 1313 OR MATH 1513, EMS 1113, EMS 1123 BIO 1414; EMS 2169 or by evaluation. §*

**9 CREDITS** The student will analyze basic and advanced emergency management of adult and geriatric, abuse & assault, special challenges, acute intervention for chronic care patients, infectious & communicable diseases, toxicology, hematology, trauma and medical patients, and apply emergency management principles for neonatology, pediatric, obstetrical and gynecological patients, and patients experiencing behavioral & psychiatric disorders. The student will also present selected emergency patient case histories from clinical rotations, analyze systematic medical care, evaluate the medical care using accepted prehospital protocols, and conduct a research project. A field and hospital clinical practicum, as well as an internship, are integral parts of the course. Liability insurance and a student uniform are required.

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## ENGINEERING

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### ENGR 1000 SPECIAL TOPICS

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** Students will demonstrate specified competencies in subjects not included in other engineering courses, but which benefit those seeking additional training or enrichment in the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### ENGR 1213 ENGINEERING GRAPHICS & DESIGN

*Prerequisite: (R) (W)*

**3 CREDITS** The student will use computational techniques and computer-aided drawing to create, analyze and graphically represent solutions to architectural and engineering problems, reflecting national, international and professional norms and standards. The student will be able to describe and demonstrate familiarity with the functions and responsibilities of research, manufacturing, construction and quality assurance involved in the solutions of a variety of engineering and architectural problems.

*Note: This course satisfies the computer proficiency requirement.*

### ENGR 2000 SPECIAL TOPICS

*Prerequisite: None*

**VARIABLE 1-6 CREDITS** Students will demonstrate advanced competencies in subjects not included in other engineering courses, but which benefit those seeking additional training or enrichment in the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### ENGR 2002 PROFESSIONAL DEVELOPMENT

*Prerequisite: English 1213*

**2 CREDITS** Students demonstrate knowledge of basic principles of a successful engineering enterprise: written and oral communications, planning, design, production, risk management and evaluation. Students utilize business and project management principles to complete multi-disciplinary design experiences.

### ENGR 2103 INTERACTIVE ENGINEERING DESIGN GRAPHICS

*Prerequisite: Corequisite: ENGR 1113, MATH 2103, MATH 2203 or by evaluation. §*

**3 CREDITS** The student will demonstrate familiarity with visualization and modeling techniques used in product design and development for a variety of engineering problems. The student will utilize (1) the engineering language including terminology, graphics and standards (2) observation, visual perception and spatial visualization (3) computer-aided design systems including solid modeling.

*Note: This course satisfies the computer proficiency requirement.*

### ENGR 2133 RIGID BODY MECHANICS

*Prerequisite: (R) (W), PHYS 2014*

**3 CREDITS** The student will solve problems related to static equilibrium of rigid and deformable bodies and the motion of particles and rigid bodies. Kinetics and kinematics will be studied with the application of algebra, trigonometry, scalar and vector calculus.

### ENGR 2143 STRENGTH OF MATERIALS

*Prerequisite: (R) (W), ENGR 2133*

**3 CREDITS** The student will solve problems related to determinate and elementary indeterminate structural analysis, stress and strain in elastic and elastoplastic materials. Quantitative analysis will incorporate methods of scalar and vector calculus and vector algebra where appropriate.

### ENGR 2243 STATICS

*Prerequisite: (R), PHYS 2014*

**3 CREDITS** Students solve problems related to static equilibrium of particles and rigid bodies under the action of forces. Physical concepts of equilibrium and engineering applications are integrated with mathematical subjects of vector calculus, vector algebra and simultaneous algebraic equations.

### ENGR 2313 STRUCTURE AND PROPERTIES OF MATERIALS

*Prerequisite: (R) (W), CHEM 1115 and concurrent enrollment in PHYS 2114*

**3 CREDITS** The student will solve problems related to the behavior of materials under serious conditions and environments in relation to atomic and molecular structure and bonding.

### ENGR 2333 THERMODYNAMICS

*Prerequisite: (R) (W), PHYS 2014, CHEM 1115*

**3 CREDITS** The student will solve problems related to an understanding of the first and second laws of thermodynamics; ideal gases; mixtures of ideal gases; and

power and refrigeration cycles. Quantitative analysis will incorporate methods of algebra and calculus where appropriate.

### ENGR 2343 FLUID MECHANICS

*Prerequisite: Pre or Corequisite: (R) (W), ENGR 2133*

**3 CREDITS** The student will solve problems related to the statics and dynamics of fluid flow and apply Stokes, Eulers and Bernoulli equations to analyze the characteristics of fluid flow in open and closed pipes. Quantitative analysis will incorporate methods of algebra, trigonometry and calculus where appropriate.

### ENGR 2523 DYNAMICS

*Prerequisite: (R) (W), ENGR 2243*

**3 CREDITS** Students solve problems related to accelerated motion of bodies. Kinetics and kinematics along with conservation of energy, momentum, and angular momentum are utilized to analyze the motion of both particles and rigid bodies with the application of algebra, trigonometry, and scalar and vector calculus.

### ENGR 2613 ELECTRICAL SCIENCE

*Prerequisite: (R) (W), PHYS 2114*

**3 CREDITS** The student will analyze DC and AC circuits including three-phase circuits. Analysis techniques will include Kirchhoff's laws, Thevenin's Theorem and Norton's Theorem. Quantitative analysis will incorporate methods of algebra, trigonometry and calculus where appropriate.

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## ENGLISH

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### ENGL 1000 SPECIAL TOPICS

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other specific courses in English (ENGL). Each course will cover a specific topic and may be repeated with a change in content.

### ENGL 1103 MULTICULTURAL ENGLISH COMPOSITION I

*Prerequisite: (R) (W) Adequate reading and writing assessment scores or LS 0033, either taken within the last year, with strong encouragement for immediate continuation.*

**3 CREDITS** Multicultural English Composition I for multicultural and international students who speak a second language.

*Note: This course has the same requirements as ENGL 1113-English Composition I but is designed for multicultural and international students.*

*GenEd Requirement*

### ENGL 1113 ENGLISH COMPOSITION I

*Prerequisite: (R) (W), Adequate reading and writing assessment scores or LS 0033 College Writing II, either taken within the last year, with strong encouragement for immediate continuation.*

**3 CREDITS** The student will write well-developed compositions which demonstrate the principles of unity, coherence, and organization and which contain specific details and vivid language. The students will locate library material and incorporate researched materials into compositions.

*GenEd Requirement*

### ENGL 1123 MULTICULTURAL ENGLISH COMPOSITION II

*Prerequisite: Corequisite, (R), (W), ENGL 1103 and ENGL 1113 taken within last year, with strong encouragement for immediate continuation.*

**3 CREDITS** In this advanced writing course, students will create essays that explore or evaluate a variety of issues and perspectives suggested by fiction, poetry, drama, essays and other types of cultural texts. Students will refine and augment the writing techniques they learned in ENGL 1113 or ENGL 1103 to develop well-reasoned, well-structured arguments in a clear, fluid, and engaging prose style.

*Note: This course has the same requirements as ENGL 1213 - English Composition II, but is designed for multi-cultural and international students.*

*GenEd Requirement*

*Multicultural English Composition II is for multicultural and international students who speak a second language. This course has the same requirements as ENGL 1213-English Composition II but is designed for multicultural and international students.*

### ENGL 1203 BUSINESS ENGLISH

*Prerequisite: (R) (W)*

**3 CREDITS** The student will be able to correctly apply rules of grammar, punctuation, sentence structure and paragraph development used in business communications and be able to differentiate between these rules and those for literary compositions.

### ENGL 1213 ENGLISH COMPOSITION II

*Prerequisite: (R) (W), ENGL 1103 or ENGL 1113 taken within the last year, with strong encouragement for immediate continuation.*

**3 CREDITS** In this advanced writing course, students will create essays that explore and evaluate a variety of issues and perspectives suggested by fiction, poetry, drama, essays, and other types of cultural texts. Students will refine and augment the writing techniques they learned in ENGL 1113 or ENGL 1103 to develop well-reasoned, well-structured arguments in a clear, fluid, and engaging prose style.

*GenEd Requirement*

### ENGL 1233 REPORT WRITING

*Prerequisite: (R) (W), ENGL 1113*

**3 CREDITS** The student will improve composition skills by developing and constructing various types of reports based on a particular situation in his or her career field.

*Note: This course satisfies the computer proficiency requirement.*

### ENGL 2000 CREATIVE WRITING

*Prerequisite: (R) (W)*

**VARIABLE 1-4 CREDITS** Given basic instruction in skills associated with writing poetry, fiction, drama and non-fiction, the student will produce examples of the type of writing on which the instruction is focused. Credit is variable; with different content it may be repeated.

*General Education Course*

### ENGL 2103 HUMANITIES COMPOSITION

*Prerequisite: (R) (W), ENGL 1213*

**3 CREDITS** The student will improve basic composition skills by constructing essays based on assignments in humanistic readings about the following: drama, art, music, literature, history and philosophy.

### ENGL 2110 READINGS

*Prerequisite: (R) (W), ENGL 1113*

**VARIABLE 1-3 CREDITS** The student enrolled in this course will read various popular literary forms. The purpose of these readings will be to enhance the student's reading abilities as well as to enable him or her to develop lifetime reading habits.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

### ENGL 2123 INTRODUCTION TO LITERATURE

*Prerequisite: (R) (W), ENGL 1213*

**3 CREDITS** This course is a study of literary forms and genres, including short story, poetry, drama, and novels. Students will be introduced to literary terminology, critical theories, and a diversity of authors and literary styles. Through various assignments, written and/or oral, students will demonstrate their ability to analyze, evaluate and interpret literary forms.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

### ENGL 2133 INTRODUCTION TO POETRY

*Prerequisite: (R) (W), ENGL 1113*

**3 CREDITS** This course is a study of poetry as literary art with emphasis on understanding, recognizing, and appreciating poetic forms and techniques. Students will interpret, analyze, and evaluate poems from a variety of literary periods and cultures.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2323 THE SHAKESPEARE PLAYS

*Prerequisite: (R), ENGL 1113*

**3 CREDITS** After reading, discussing, attending lectures and viewing commercially produced films of selected plays, the student will describe the role of these plays within the literary, historical and cultural context of the Renaissance.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2333 INTRODUCTION TO THE NOVEL

*Prerequisite: (R), ENGL 1113*

**3 CREDITS** Students will read several novels from a variety of historical periods. After additional study of the different types and techniques of novels, the student will describe the common characteristics and the special features of this literary form.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2343 THE SHORT STORY

*Prerequisite: (R), ENGL 1113*

**3 CREDITS** After reading and discussing a wide selection of story masterpieces and commentaries on those short stories, the student will be able to describe the historical and literary development of this literary form.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2353 NATIVE AMERICAN LITERATURE

*Prerequisite: (R), ENGL 1113*

**3 CREDITS** Students will study the literary, historical, and traditional backgrounds of Native American cultures. After studying selected tribes and reading poems, short stories and novels by Native American authors, students will be able to describe the characteristics of Native American literature. Students, furthermore, will be able to explain the importance of Native American literature within the canon of non-Western world literature.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2363 AFRICAN-AMERICAN LITERATURE

*Prerequisite: (R), ENGL 1113*

**3 CREDITS** Students will read literature from the African-American culture and demonstrate understanding of the culture and its literature through discussions and written work. The student will be able to construct appropriate written and/or oral statements concerning literary, historical, cultural, and philosophical movements of the African-American culture from pre-slavery to the present time.

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2413 WOMEN IN LITERATURE

*Prerequisite: ENGL 1113*

**3 CREDITS** After reviewing literature written by and about women of various times and places, students will examine and interpret values and attitudes from a variety of perspectives suggested by the readings. Lectures, discussions, and papers will emphasize relationships between social, political, and personal issues while making global connections, both historical and contemporary, and exploring the universality and variety of women's issues.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2423 SURVEY OF WORLD LITERATURE I

*Prerequisite: (R), ENGL 1213*

**3 CREDITS** This course is a survey of world literature from the time of ancient civilizations to about 1600. Students will study representative works that comprise literary traditions from diverse cultures throughout the world. The cultural, historical and philosophical influences of the literature will also be examined.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts and Associate in Science degrees.*

## ENGL 2433 SURVEY OF WORLD LITERATURE II

*Prerequisite: (R), ENGL 1213*

**3 CREDITS** This course is a survey of world literature from about 1600 to contemporary times. Students will study representative works that comprise literary traditions from diverse cultures throughout the world. The cultural,

historical and philosophical influences on the literature will also be examined.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts and Associate in Science degrees.*

## ENGL 2543 SURVEY OF ENGLISH LITERATURE I

*Prerequisite: (R), ENGL 1213*

**3 CREDITS** This course is a survey of English literature from the Anglo-Saxon era up to approximately 1798. Students will study representative works that shaped the literary canon and traditions in English literature, placing them in their literary, historical, philosophical, and cultural contexts.

*This course satisfies three credits of the General Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2653 SURVEY OF ENGLISH LITERATURE II

*Prerequisite: (R), ENGL 1213*

**3 CREDITS** This course is a survey of English literature from the Romantic Age to the present. Students will study representative works that shaped the literary canon and traditions in English literature, placing them in their literary, historical, philosophical, and cultural contexts.

*This course satisfies three credits of the General Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

*This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2773 SURVEY OF AMERICAN LITERATURE I

*Prerequisite: ENGL 1213*

**3 CREDITS** This course is a survey of American literature from the pre-Colonial Period to the Civil War. Students will study representative works that shaped the American literary tradition, placing them in their literary, historical, philosophical, and cultural contexts. In addition, students will examine common issues, conflicts, preoccupations, and themes found in the literary selections.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

## ENGL 2883 SURVEY OF AMERICAN LITERATURE II

*Prerequisite: ENGL 1213*

**3 CREDITS** This course is a survey of American literature from the Civil War to the present time. Students will study representative works that shaped the American literary tradition, placing them in their literary, historical, philosophical, and cultural contexts. In addition, students will examine common issues, conflicts, preoccupations, and themes found in the literary selections.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

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## ENGLISH AS A SECOND LANGUAGE

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### ESL 0373 TOEFL PREPARATION

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §.*

**3 CREDITS** This course is for the intermediate to advanced level student who desires to improve his or her score on the institutional (paper-based) Test of English as a Foreign Language (TOEFL). The course provides extensive practice with the specific listening, grammar, and reading skills which are essential for TOEFL success. Although designed with the TOEFL examinee in mind, the drills and exercises in this course can be equally useful to the student who has other goals.

### ESL 0413 ADVANCED LISTENING

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §.*

**3 CREDITS** This course develops the student's ability to comprehend and interpret aural information. Students practice active listening skills and develop comprehension abilities in a variety of discourse situations including natural conversations, film and video contexts, and classroom lectures. This course is organized around topics in American culture. Students will learn about and discuss the cultural values and traditions which have shaped and continue to shape American society.

**ESL 0423      ADVANCED READING**

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §*

**3 CREDITS** This course is for the student who wants to improve his/her ability to read English for academic purposes. Through extensive practice, students increase both their reading speed and their comprehension of college-level reading material. Acquisition of new college-level vocabulary is an integral part of the course. Students are given frequent and varied practice with vocabulary words including practice with word families and with the forms and grammatical features of new words.

**ESL 0443      ADVANCED WRITING**

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §*

**3 CREDITS** This course prepares students to write in English for academic purposes. Students develop the skills necessary for effective paragraph and essay writing. Students learn how to generate and focus ideas, to support a thesis, and to revise and refine their work. Writing strategies and techniques covered will include brainstorming, free writing, drafting, and editing. The course introduces rhetorical patterns used in essay writing such as compare/contrast and persuasion.

**ESL 0453      ADVANCED GRAMMAR**

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §*

**3 CREDITS** This course provides a comprehensive and in-depth presentation of English grammar. Grammar aspects covered include the verb tense system, gerunds and infinitives, nouns and articles, adverb and adjective clauses, conditional structures, modal verbs, and the passive voice. Students develop mastery of these fundamental structures through a variety of practice exercises and activities. While focusing primarily on grammar, the course promotes the development of all language skills for effective communication.

**ESL 0463      ADVANCED SPEAKING**

*Prerequisite: Appropriate Score on a Skills Assessment Test or by evaluation. §*

This course increases the student's ability and confidence as an effective communicator in English. Students practice the advanced communications skills necessary for success in academic and professional situations. Speaking tasks assigned will include discussion, debate, recitation, public speaking, and the production of dialogues and skits for in-class performance. Aspects of pronunciation will be covered as needed to improve the student's overall comprehensibility.

**ESL 0640      SPECIAL TOPICS IN ENGLISH AS A SECOND LANGUAGE**

*Prerequisite: None*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in specific areas of English as a Second Language study which are not covered in other English as a Second Language courses. The course can be repeated either with a change in course content or by recommendation of the instructor.

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**ENTERPRISE COMMUNICATIONS SYSTEMS**

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**ECS 1000      SPECIAL TOPICS**

*Prerequisite: (R) (W)*

**1-4 CREDITS** Students demonstrate specific competencies in subjects not included in Enterprise Communication Systems courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1022      INTRODUCTION TO ENTERPRISE COMMUNICATION SYSTEMS**

*Prerequisite: (R) (W)*

**2 CREDITS** Students demonstrate basic competencies in network services, modems, and access devices, the Internet, convergence and wireless services. Students demonstrate knowledge of the history of telecommunications, the public network and the Local Competition and the Telecommunications Act as it relates to the workforce requirements of network technicians and administrators.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1054      BASIC WEB DESIGN ELEMENTS**

*Prerequisite: (R) (W)*

**4 CREDITS** Students develop competencies in web design, basic web page design principles; file formats for creating web pages, accessibility, usability, and site management skills. Students demonstrate the ability to create basic HTML code, vector and bitmap graphics, SWF and GIF animations, animations with DHTML and images for web pages that include interactive elements and Cascading Style Sheets. In addition, students use web development tools to build a course project website.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1214      PC HARDWARE AND SOFTWARE**

*Prerequisite: (R), (W)*

**4 CREDITS** Students develop an understanding of emerging information technology and data communications. Students demonstrate, in a laboratory setting, knowledge of the necessary skills of building a computer, installing the operating systems, adding peripherals, and connecting the computer to a local-area network as well as the Internet.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1233      OPERATING SYSTEMS**

*Prerequisite: (R) (W)*

**3 CREDITS** Students will develop an understanding of various operating systems and demonstrate competencies in installing and operating various computer systems, the Internet and telephone applications-programming interface.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1253      BEGINNING SOLARIS**

*Prerequisite: (R) (W)*

**3 CREDITS** Students develop competencies in various operating command systems that include UNIX operating system commands, Solaris operating environment commands and Common Desktop Environments. Students demonstrate an understanding of fundamental command-line features of the operating environment including file system navigation, file permission, the VI text editor, and command shells.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1273      BASIC JAVA ELEMENTS**

*Prerequisite: (R) (W)*

**3 CREDITS** Students develop competencies in JAVA concerning basic programming with the conceptual understanding of object-oriented programming. Students identify JAVA language's object-oriented techniques to solve business problems and to create classes, object, and applications.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1314      NETWORKING FUNDAMENTALS**

*Prerequisite: (R) (W)*

**4 CREDITS** Students demonstrate specified competencies in various routers, switches, cable analyzers, smart remotes, and cable meters. Students demonstrate knowledge of the OSI reference model, the basics of network layout and function, and the elements of TCP/IP. Students will also set up and configure a local area network.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 1334      ROUTING TECHNOLOGIES**

*Prerequisite: ECS 1314*

**4 CREDITS** Students demonstrate specified competencies with router switching technologies, beginning router and switching configurations and network management. Basic router configurations will be emphasized using the routing information protocol. Students configure addresses, host names, telnet procedures, IP races, Ethernet MAC addresses, serial port addresses, router commands, router troubleshooting, password recovery, and make physical connections at various ports.

*Note: This course satisfies the computer proficiency requirement.*

**ECS 2000      SPECIAL TOPICS**

*Prerequisite: (R) (W)*

**1-4 CREDITS** Students demonstrate specified advanced competencies in subjects not included in other Enterprise Communication Systems courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2224 NETWORK OPERATING SYSTEMS**

*Prerequisite: ECS 1214*

**4 CREDITS** Students identify multi-user, multi-tasking network operating systems. LINUX, Windows 2000, NT, and XP networking operating systems will be covered. Students explore a variety of topics including installation procedures, security issues, back-up procedures, remote access and administration of Microsoft and Unix-based network operating systems.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2272 ADVANCED JAVA ELEMENTS**

*Prerequisite: ECS 1273*

**2 CREDITS** Students develop competencies and demonstrate an understanding in classes and inheritance, Arrays, packages, creating GUI applications using AWT, creating applets and graphics, exceptions, streams and stream output, utility classes and threads.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2334 ADVANCED ROUTING AND SWITCHING**

*Prerequisite: ECS 1334*

**4 CREDITS** Students demonstrate specified competencies in advanced routing and switching technologies and network management. Students demonstrate an understanding of virtual LANS, data-link layer network addressing, simple network management protocols, interior gateway routing protocol, enhanced interior gateway protocol, classless IP and wide area networking.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2354 ADVANCED SOLARIS**

*Prerequisite: ECS 1253*

**4 CREDITS** Students develop advanced competencies in Solaris through implementing internetworking connectivity, systems, services, and security using the tools and features specific to Solaris. Students will demonstrate the ability to identify a variety of characteristics, commands and features specific to Solaris.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2364 ADVANCED NETWORK & DESIGN MANAGERMENTS**

*Prerequisite: ECS 2334*

**4 CREDITS** Students demonstrate specified competencies in project-based experimental activity and network design. Students demonstrate knowledge in trends and developments in the field of networking. The student will work with a Professional Network/WAN design tool to complete a 12,000 Ethernet host design project.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2414 BUILDING SCALABLE NETWORKS**

*Prerequisite: ECS 2364*

**4 CREDITS** Students demonstrate the implementation of OSPF, EIGRP, BGP, Route Redistribution, NAT, Easy IP, Route Optimization, and Security utilizing Lock-and-Key, Reflexive, and Context-Based Access Control access lists.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2434 BUILDING REMOTE ACCESS NETWORKING**

*Prerequisite: ECS 2414*

**4 CREDITS** Students build remote access networks. Students implement remote technologies in asynchronous modem dial-up, ISDN, X.25, frame relay, T1 and address security concerns utilizing PAP, CHAP, and Secure AAA.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2454 BUILDING MULTILAYER SWITCHED NETWORKS**

*Prerequisite: ECS 2434*

**4 CREDITS** Students develop competencies to design and implement a multi-layer switched network utilizing routers. Through hands on lab activities, students demonstrate the ability to optimize routing, ensure network availability, and provide for multi-cast applications.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2474 INTERNETWORK TROUBLESHOOTING**

*Prerequisite: ECS 2454*

**4 CREDITS** Students learn to troubleshoot an environment that uses routers and switches for multi-protocol client hosts and servers. Students develop competencies to use configuration examples to demonstrate management and troubleshooting techniques for numerous LAN and WAN designs. Students also demonstrate the ability to identify tools used to trouble shoot the most common networking environments in use today.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2514 FUNDAMENTALS OF NETWORK ROUTER SECURITY**

*Prerequisite: ECS 2364 or CCNA Certification*

**4 CREDITS** Students learn the overall security processes of basic networks and demonstrate these skills in the following areas through hands-on projects: Security policy design and management, Security technologies, products and solutions, Firewall and secure router design, installation, configuration, maintenance and management, AAA implementation using routers, Intrusion detection (IDS) implementation using routers, and VPN implementation using routers.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2534 FUNDAMENTALS OF NETWORK SECURITY FOR PIX FW**

*Prerequisite: ECS 2364 or CCNA Certification*

**4 CREDITS** Students learn basic security processes dealing with network firewalls. Students demonstrate skills in Security policy design and management of firewalls, Security technologies, products and solutions associated with firewalls, Firewall and secure router design, installation, configuration, maintenance and management of firewalls. Additional areas are: AAA implementation using routers and firewalls, Intrusion detection (IDS) implementation using routers and firewalls, VPN implementation using routers and firewalls.

*Note: This course satisfies the computer proficiency requirement.*

## **ECS 2554 FUNDAMENTALS OF WIRELESS LANS**

*Prerequisite: ECS 2364 or CCNA Certification*

**4 CREDITS** Students design, plan, implement, operate and troubleshoot wireless LANs. Students demonstrate comprehension of wireless LANs through a variety of hands-on projects and laboratory simulations. Special projects will cover: setting up and troubleshooting various wireless LANs technologies and products, providing solutions, completing site surveys and resilient WLAN designs, installation and configuration of various wireless networks, performing WLAN security diagnostics and developing vendor interoperability strategies.

*Note: This course satisfies the computer proficiency requirement.*

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## **FILM AND VIDEO PRODUCTION**

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### **FVP 1000 SPECIAL TOPICS IN FILM TECHNOLOGY**

*Prerequisite: None*

**Variable 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other film and video production courses but which will benefit students wanting additional training. Each course will cover a specific topic and may be repeated with a change in content.

### **FVP 1133 PRODUCTION DESIGN**

*Prerequisite: (R)*

**3 CREDITS** The student will demonstrate an understanding of location design, exterior and interior art direction and construction, stage sets, props, signage, costume and set decoration, makeup, and hair dressing.

### **FVP 1214 CINEMATOGRAPHY I**

*Prerequisite: (R)*

**4 CREDITS** Students will be introduced to the equipment and technical aspects used for films and television. They will demonstrate an understanding of terms and procedures in selecting equipment for specific scenes. They will demonstrate a basic understanding of how to use lights, sound and camera devices. They will

demonstrate a technical understanding of the workflow utilized in preproduction, production and post production process of motion pictures. Laboratory experience is a required component of this course.

### **FVP 1713 SCREENWRITING**

*Prerequisite: (R), (W) or by evaluation. §*

**3 CREDITS** Students will be given basic instruction in the skills of writing and analyzing screenplays. Students will produce examples of the type of writing on which the instruction is focused. This course will include the analytical breakdown of screenplay elements through script analysis of feature-length screenplays and short-form screenplays. Students will synthesize their knowledge and skills learned in class, and problem-solve by writing “coverage” of student class projects--and by writing multiple short-form screenplays, culminating in a screenplay for a Capstone Project. They will also create a step-outline for a feature-length motion picture.

### **FVP 2000 SPECIAL TOPICS IN FILM TECHNOLOGY**

*Prerequisite: 6 hours of Film and Video Production courses or by evaluation. §*

**Variable 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other film and video production courses but which will benefit students wanting advanced training. Each course will cover a specific topic and may be repeated with a change in content.

### **FVP 2123 FILM PRODUCTION AND BUSINESS**

*Prerequisite: (R), (W)*

**3 CREDITS** Students will study the film-making process from concept to completion with special emphasis on the relationship between key staff members such as the producers, editors, directors, and cinematographers. They will demonstrate a basic understanding of film production technology and terminology. They will also analyze publicity, marketing techniques and materials, distribution plans, contracts, labor relations, business plans, copyright, chain of title, and negotiating with management and representation. As part of this course students will develop an entire plan for the production of a film which may become their Capstone project. The plan will include the selection of a script, a detailed schedule, budget, and possible contracts for staff and talent.

### **FVP 2153 SCREENPLAY INTERPRETATION**

*Prerequisite: (R), FVP 1214, FVP 2323 or by evaluation. §*

**3 CREDITS** Students will learn the form and function of the basic motion picture screenplay through the analytical breakdown of film elements from the perspective of selected labor craft categories. Students will demonstrate their ability to apply learned craft skills to interpret the suggested imagery of the screenwriter by applying useful, creative and technical contributions in the production of screenplay into filmmaking projects.

### **FVP 2214 CINEMATOGRAPHY II**

*Prerequisite: FVP 1214 and FVP 2323*

**4 CREDITS** Students will be introduced to the composition of film and television. They will demonstrate an understanding of picture and sound techniques to produce a meaningful and cohesive visual and aural story. They will demonstrate a basic understanding of utilizing lights, sound and camera locations and movements relative to the visual and aural story. Laboratory experience is a required component of this course.

### **FVP 2253 FILM SOUND**

*Prerequisite: FVP 1214*

**3 CREDITS** Students will demonstrate the use of microphones, microphone placement, sound enhancements, volume, and the recording techniques used on location and in a studio. They will produce a full sound mix, including dialogue, score, source music, sound effects, and a variety of digital technologies.

### **FVP 2263 AMERICAN CINEMA**

*Prerequisite: ENGL 1113 or by evaluation. §*

**3 CREDITS** The focus in this course will be on these film topics: history and development, the studio system, economic structure, technical and critical vocabulary, style, the star, genres, themes, and audience. Instructional films and readings will enable the student to understand each of these topics; furthermore, the student will view several classic and contemporary American films to exemplify and clarify cinematic techniques and concepts. The student will become able to think and write critically about film and its role in American culture.

### **FVP 2273 DOCUMENTARY FILMMAKING**

*Prerequisite: FVP 1214 and FVP 2323 or by evaluation. §*

**3 CREDITS** Students will analyze the techniques and resources for the successful development and completion of filmed documentary productions. They will examine the duties of the documentary filmmaker from the perspective of the various craft categories. Students will synthesize their knowledge and skills learned in class, and problem-solve by producing examples of the type of filmmaking on which the instruction is focused.

### **FVP 2314 CINEMATOGRAPHY III**

*Prerequisite: FVP 2214 or by evaluation. §*

**4 CREDITS** Students will be introduced to the special effects technology of match movement. They will demonstrate an understanding of the knowledge and skills to track a camera's movement in three-dimensional space so a virtual camera can be reproduced by computer software. They will demonstrate an understanding of three-dimensional match moving tools to extrapolate three-dimensional information from two-dimensional photography. Laboratory experience is a required component of this course.

### **FVP 2323 FILM EDITING AND DIGITAL EFFECTS I**

*Prerequisite: (R) or by evaluation. §*

**3 CREDITS** Students will learn the digital environment of the non-linear AVID editing system, mastering the basics of multiple video and audio tracks, scenes assembly, time line structure and maintenance. Basic transitions such as dissolves, fades, wipes, and others will be introduced. Students will learn the process of commercial digital film editing and become familiar with story line and plot development through basic post-production techniques of picture and sound juxtaposition. Students will also be introduced to the mechanics and methods of digital effects. They will demonstrate a proficiency in the manipulation of single images, resulting in digitally enhanced composite shots and scenes.

### **FVP 2423 FILM EDITING AND DIGITAL EFFECTS II**

*Prerequisite: FVP 2323 or by evaluation. §*

**3 CREDITS** Students will master the visual and aural forces that make the film an expressive means of communication utilizing the digital medium of the intermediate level AVID non-linear editing system. Students will demonstrate proficiency in construction of film sequences, interrelationships of the various film elements, editorial theory and practices that affect the overall aesthetics of recorded storytelling. They will additionally study the arena of digital effects and various non-linear after-market effects palettes.

### **FVP 2453 FILM SOUND EDITING**

*Prerequisite: (R), FVP 2253*

**3 CREDITS** Students will master the aural forces that make film an expressive means of communication utilizing the digital medium of the intermediate ProTools non-linear sound editing system. Students will demonstrate proficiency in construction of sound sequences, interrelationships of the various sound track elements, sound design, foley and editorial theory that affect the overall aural aesthetics of recorded music and effects in film storytelling.

### **FVP 2613 FILM OR VIDEO INTERNSHIP**

*Prerequisite: 6 hours of Film and Video Production courses or by evaluation. §*

**Variable 1-3 CREDITS** Students will work on the production of student films, or they will be placed in a professional setting that will require them to use their workplace skills through a supervised practical experience in support of film or video projects. The course may be repeated to a maximum of 6 credit hours with the consent of the instructor.

### **FVP 2623 DIRECTING**

*Prerequisite: (R), FVP 1214 or by evaluation. §*

**3 CREDITS** Students will analyze the techniques and resources used in modern film directing. They will learn the director's responsibilities in script development, pre-production, production, and post-production. They will learn how a director assesses and integrates the individual contributions of the various film crafts into a production. They will learn how to work with actors in casting sessions and on the set. They will be given practical, hands-on experience in directing by the completion of directing assignments and projects. Students will be divided into teams to work on directing assignments outside of class for later presentation

in class, as well as presentations of edited assignments. Each team will be responsible for "casting" the acting talent required for those assignments. Some additional time outside of class will be required for the editing of projects.

### **FVP 2713 CAPSTONE PROJECT**

*Prerequisite: All required Major FVP courses, computer proficiency or by evaluation. §*

**3 CREDITS** In groups, students will produce a short 10 to 20 minute, completely edited, finished film, demonstrating their mastery of the various film craft categories and the entire film making process.

*Note: If students want to make a Documentary film for their capstone, they must take Documentary Filmmaking (FVP2273) prior to Capstone Project. If students want to make a narrative film, they should take Screenwriting (FVP1713) as one of their major or support courses prior to the Capstone Project.*

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## **FINANCE**

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### **FIN 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**1-4 CREDITS** This is a study of variety of topics in which the student will be exposed to such topics as preparing for a career in the financial services industry, assessing the job market, etc. The course may be repeated with a change of topic.

### **FIN 1013 PERSONAL FINANCE**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will solve problems involved in personal finance, including budgeting, borrowing, charge accounts, installment buying, insurance, savings, social security, home ownership, banking services, taxes, wills and estates. He or she will demonstrate mastery of these problems by applying the techniques involved to simulated personal finance problems.

*General Education Course*

### **FIN 2023 INTRODUCTION TO BUSINESS FINANCE**

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score, ACCT 2113*

**3 CREDITS** The student will study the basic concepts essential to the management of business finances and apply these concepts to problems involving financial planning, capital investments, budgeting, time value of money and financial decision making.

### **FIN 2033 FUNDAMENTALS OF INVESTMENTS**

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score.*

**3 CREDITS** The student will examine the basic concepts of investing, methods for evaluating risk, and types of investments. The fundamental concepts will be applied to establishment of investment goals, portfolio creation and management, and determining the effects of government regulation.

*(This course is generally offered in the spring semester only.)*

### **FIN 2123 SECURITIES AND INSURANCE LICENSING**

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score, INS 1123*

**3 CREDITS** The student will demonstrate understanding of the legal, ethical, and theoretical environment of the securities and insurance industry. The student will demonstrate competencies in mutual fund and variable insurance products. This includes an overview of laws set forth in the Uniform Securities Act, covering state licensing and registration requirements.

### **FIN 2500 FINANCIAL SERVICES INTERNSHIP**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score., FIN 1013 or by evaluation. §*

**1-6 CREDITS** The course will assist students in earning academic credit in a planned process that integrates academic preparation with supervised work experience. Students will work in an approved financial services environment with cooperating employers for a specified period of time, and will attend arranged lectures relating to a variety of financial services topics.

*Note: This course may be repeated to a maximum of nine credit hours with the permission of the instructor.*

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## **FRENCH**

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### **FREN 1000 SPECIAL TOPICS IN FRENCH**

*Prerequisite: (R) (W)*

**1-6 CREDITS** The student will demonstrate competencies not covered in other French language courses. Each course will concentrate on a particular aspect of language and culture. Credit is variable, and with different content, may be repeated for up to 6 credits.

### **FREN 1010 CONVERSATIONAL FRENCH I**

*Prerequisite: (R) (W)*

**1-4 CREDITS** The beginning student will develop oral communication skills through intensive practice in French with a focus on listening and speaking activities. The student will be able to function in French on topics of everyday life. Credit is variable and, with different content, may be repeated for up to 4 credits.

### **FREN 1115 ELEMENTARY FRENCH I**

*Prerequisite: (R) (W)*

**5 CREDITS** The beginning student will acquire fundamental proficiency in understanding, speaking, reading, and writing French. The student will also explore important aspects of French and Francophone culture.

*General Education Course*

### **FREN 1120 CONVERSATIONAL FRENCH II**

*Prerequisite: (R) (W), FREN 1010 or FREN 1115 or by evaluation. §*

**1-4 CREDITS** The student will further develop oral communication skills through intensive practice in French with a focus on listening and speaking activities. The student will be able to function in French in a variety of situations. Credit is variable and, with different content, may be repeated for up to 4 credits.

### **FREN 1225 ELEMENTARY FRENCH II**

*Prerequisite: FREN 1115 or by evaluation. §*

**5 CREDITS** A continuation of FREN 1115. The student will demonstrate increased proficiency in understanding, speaking, reading, and writing French. The student will continue to explore significant aspects of French and Francophone culture. Satisfactory completion of this course confirms that a student has demonstrated competency in a foreign language at the novice-high level on the ACTFL scale.

*General Education Course*

### **FREN 2113 INTERMEDIATE FRENCH I**

*Prerequisite: (R) (W), FREN 1225 or by evaluation. §*

**3 CREDITS** The student will demonstrate proficiency in understanding, speaking, reading, and writing French at the intermediate level. The student will read a variety of French texts, using them as a basis for conversation and composition in French and will begin a systematic review of French grammar. The class is taught in French.

*General Education Course*

### **FREN 2223 INTERMEDIATE FRENCH II**

*Prerequisite: (R) (W), FREN 2113 or by evaluation. §*

**3 CREDITS** A continuation of FREN 2113. The student will demonstrate increased proficiency in understanding, speaking, reading, and writing French at the intermediate level. The student will read short literary texts and use them as a basis for discussions and compositions in French and will complete a systematic review of French grammar. The class is taught in French.

*General Education Course*

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## **GEOGRAPHY**

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### **GEOG 1103 CULTURAL GEOGRAPHY**

*Prerequisite:*

**3 CREDITS** Cultural Geography is the study of spatial variations among cultural groups and the spatial functioning of society. It focuses on describing and analyzing the ways language, religion, economy, government and other cultural phenomena vary or remain constant from one place to another and on explaining how humans function spatially.



**GEOG 2603 WORLD REGIONAL GEOGRAPHY***Prerequisite: (R)*

**3 CREDITS** The student will examine the world's major cultural regions and determine the relationship between the physical environment and economic, social and political conditions.

*General Education Course (humanities)***GEOLOGY****GEOG 1000 GEOLOGY SPECIAL TOPICS***Prerequisite: LS 0033 College Writing II*

**1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other geology (or related) courses, but which benefit those seeking additional training or enrichment in that field (or related fields). A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

**GEOG 1063 EARTH SCIENCE***Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will demonstrate their understanding of an overview of the earth sciences. The student will study the areas of astronomy, meteorology, climatology and oceanography, with the major concentration on the study of geologic principles.

*GenEd Requirement***GEOG 1064 EARTH SCIENCE***Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** Students will demonstrate their understanding of an overview of the earth sciences. The student will study the areas of astronomy, meteorology, climatology and oceanography, with the major concentration on the study of geologic principles. Laboratory work is an integral part of the course.

† *As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement***GEOG 1114 GENERAL GEOLOGY***Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** Students will describe theories of the earth's formation, its composition and structure and the processes which change the earth's surface. Laboratory work and field trips are an integral part of the course.

† *As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement***GERMAN****GRMN 1000 SPECIAL TOPICS***Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies not covered in other German language courses. Each course will concentrate on a specific language skill such as Conversational or Traveller's German. The course may be repeated with a change in subject matter.

**GRMN 1010 CONVERSATIONAL GERMAN I***Prerequisite: (R) (W)*

**1-4 CREDITS** The beginning student will develop oral communication skills through intensive practice in German with a focus on listening and speaking activities. The student will be able to function in German on topics of everyday life. Credit is variable and, with different content, may be repeated for up to 4 credits.

**GRMN 1115 ELEMENTARY GERMAN I***Prerequisite: (R) (W)*

**5 CREDITS** The beginning student will acquire fundamental proficiency in the pronunciation, grammar, reading, speaking, and writing of German. The student will also explore certain aspects of German culture.

*General Education Course***GRMN 1120 CONVERSATIONAL GERMAN II***Prerequisite: (R) (W), GRMN 1010 or GRMN 1115*

**1-4 CREDITS** The student will further develop oral communication skills through intensive practice in German with a focus on listening and speaking activities. The student will be able to function in German in a variety of situations. Credit is variable and, with different content, may be repeated for up to 4 credits.

**GRMN 1225 ELEMENTARY GERMAN II***Prerequisite: GRMN 1115*

**5 CREDITS** A continuation of GRMN 1115. The student will demonstrate increased proficiency in the fundamentals of German grammar, oral communication, as well as in reading and writing skills. The student will continue to explore selected aspects of German culture.

**GRMN 2113 INTERMEDIATE GERMAN I***Prerequisite: (R) (W), GRMN 1225*

**3 CREDITS** The student will read a variety of German texts, using them as a basis for conversation and short compositions in German. The readings will be accompanied by a review and enrichment of the student's knowledge of German grammar.

*General Education Course***GRMN 2223 INTERMEDIATE GERMAN II***Prerequisite: (R) (W), GRMN 2113*

**3 CREDITS** A continuation of GRMN 2113. The student will read more advanced German texts, using them as a basis for discussions and literary compositions in German. Grammar review and enrichment are an ongoing part of the course.

*General Education Course***GRAPHIC COMMUNICATIONS****GCOM 1000 SPECIAL TOPICS IN GRAPHIC COMMUNICATIONS***Prerequisite: (R)*

**VARIABLE 1-6 CREDITS** Students will develop skills and demonstrate competencies in topics not covered in other Graphic Communication courses. A specific topic is designated for each offering. This course may be repeated with a change in subject matter.

**GCOM 1023 INTRODUCTION TO GRAPHIC DESIGN***Prerequisite: (R)*

**3 CREDITS** This course is an introduction to the principles of design, terminology, typography, and the design process. Students will indicate an understanding of the design and print process, the use of emphasis, contrast, balance, alignment, repetition, flow, color and typography through the successful completion of assigned projects.

**GCOM 1053 ELECTRONIC PUBLISHING: INDESIGN I***Prerequisite: (R)*

**3 CREDITS** Students will demonstrate proficiency in using the Macintosh computer in the production of various types of printed material. In addition, they will demonstrate skills in specifying typography, importing photos and artwork into documents, the application of design principles, and preparing documents for the commercial printing process.

*Note: This course satisfies the computer proficiency requirement.***GCOM 1133 INTRODUCTION TO MACINTOSH***Prerequisite: (R)*

**3 CREDITS** The student will demonstrate a working knowledge of creating documents and folders and filing them in the current operating system, networking, accessing the internet, and producing basic documents using several graphic arts software programs.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 1153 DIGITAL PHOTOGRAPHY**

*Prerequisite: (R)*

**3 CREDITS** The student will demonstrate proficiency in using digital cameras and will produce color and black and white images which demonstrate a knowledge of basic principals of composition. Students will also demonstrate the ability to use the software program Adobe Photoshop to enhance, retouch, resize, format and store their digital images for use in printing and on the web.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 1183 COMPUTER DRAWING: ILLUSTRATOR**

*Prerequisite: (R)*

**3 CREDITS** The student will demonstrate knowledge of vector illustration techniques using Adobe Illustrator software. The student will also create and edit graphic objects and type, select various menu commands, and use keyboard shortcuts.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 1223 ADVERTISING LAYOUT**

*Prerequisite: (R), GCOM 1053*

**3 CREDITS** Students will demonstrate, by tests and performance, the ability to make effective advertising layouts which meet industry standards. Students will demonstrate effective use of color, dominant and subordinate elements, typography, and production skills in their designs.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2000 INTERNSHIP**

*Prerequisite: (R) or by evaluation. §*

**VARIABLE 1-6 CREDITS** The student will work in a real graphic arts environment. The student will be instructed by a qualified graphic artist in a work situation and will produce printable assignments using current technology. This course may be repeated to a maximum of nine credit hours with the permission of the instructor.

## **GCOM 2053 ELECTRONIC PUBLISHING: INDESIGN II**

*Prerequisite: (R), GCOM 1053 or by evaluation. §*

**3 CREDITS** The student will demonstrate proficiency using advanced functions and commands of electronic desktop publishing. This will include libraries, master pages, color separation, prepress document preparation, working with graphic files, and templates.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2100 ADVANCED SPECIAL TOPICS**

*Prerequisite: (R), Any 1000-level GCOM course or by evaluation. §*

**VARIABLE 1-3 CREDITS** Students will demonstrate competencies in advanced topics not covered in other Graphic Communication courses. A specific topic is designated for each offering. This course may be repeated with a change of subject matter.

## **GCOM 2143 PHOTO LIGHTING**

*Prerequisite: (R), GCOM 1143 or by evaluation. §*

**3 CREDITS** The student will demonstrate proficiency in photographic lighting through projects which demonstrate basic lighting techniques on people and objects using studio lighting and electronic flash.

## **GCOM 2153 DIGITAL PHOTOGRAPHY II**

*Prerequisite: (R), GCOM 1153 or by evaluation. §*

**3 CREDITS** The student will demonstrate knowledge of DSLR camera operations, exposure, exposure controls, lenses, depth of field, shutter speeds, existing lighting, and basic lighting techniques using studio lighting and electronic flash. Student proficiency will be indicated by successful completion of projects and the development of a one-person exhibit or portfolio.

## **GCOM 2163 PHOTOJOURNALISM**

*Prerequisite: (R), GCOM 1153, GCOM 2153 or by evaluation. §*

**3 CREDITS** The student will demonstrate the skills used in publication photography. These skills include knowledge of equipment, special lighting,

compositional techniques, and publication requirements used in photographing news events and photo essays. Student proficiency will be indicated by successful completion of projects and the development of a one-person exhibit or portfolio.

## **GCOM 2253 ADVERTISING PHOTOGRAPHY**

*Prerequisite: (R), GCOM 1153, GCOM 2153 or by evaluation. §*

**3 CREDITS** The student will demonstrate the skills used in catalog and advertising photography. These skills include knowledge of equipment, special lighting, and compositional techniques used in the studio and on location. Student proficiency will be indicated by successful completion of projects and the development of a one-person exhibit or portfolio.

## **GCOM 2323 PUBLICATION DESIGN**

*Prerequisite: (R), GCOM 1053 or by evaluation. §*

**3 CREDITS** Upon completion of the course the student will demonstrate knowledge of the elements of newsletter and magazine design. The student will produce a four-page newsletter. The student will also produce a magazine cover, table of contents page(s), masthead, and departmental page designs. The work will be performed on a Macintosh computer using a desktop publishing program.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2353 APPLIED GRAPHIC ART**

*Prerequisite: (R), GCOM 1053 and GCOM 1223*

**3 CREDITS** The student will apply skills learned in previous classes to produce real projects for the College or community. Students will design and produce a variety of production pieces.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2363 PORTRAIT PHOTOGRAPHY**

*Prerequisite: (R), GCOM 1153, GCOM 2153 or by evaluation. §*

**3 CREDITS** The student will demonstrate the skills required to photograph people in the studio and on location. These skills include knowledge of equipment, special lighting, and posing techniques. Student proficiency will be indicated by successful completion of projects and the development of a one-person exhibit of portfolio.

## **GCOM 2373 GRAPHIC ARTS ILLUSTRATION**

*Prerequisite: (R), ART 1123 or by evaluation. §*

**3 CREDITS** The student will learn about and produce illustrations using a variety of techniques and media. Types of illustrations produced include pencil, ink, markers, scratchboard, colored pencil and mixed media. Work will be accomplished to conform to professional standards in the graphic arts industry.

## **GCOM 2773 IMAGE EDITING: PHOTOSHOP I**

*Prerequisite: (R)*

**3 CREDITS** The student will demonstrate knowledge of the tools and functions of Photoshop software program. The student will complete projects which indicate an understanding of image retouching and manipulation, color correction, image sharpening, RGB color, CYMK color, separations, channels, paths, and filters.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2783 IMAGE EDITING: PHOTOSHOP II**

*Prerequisite: (R), GCOM 2773 or by evaluation. §*

**3 CREDITS** The student will demonstrate knowledge of more advanced functions of the Photoshop software program. Student proficiency will be demonstrated by successfully completing projects which require skills in advanced techniques in selection, layering, color correction, and image manipulation.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2793 WEB PAGE DESIGN I**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will learn the skills required to create Web pages and maintain websites. These skills include using Adobe Dreamweaver software, HTML and CSS languages, producing graphics, and applying design principles for effective Web layouts. Proficiency will be demonstrated by successful completion of projects.

*Note: This course satisfies the computer proficiency requirement.*

## **GCOM 2803 PORTFOLIO PREPARATION AND PRESENTATION**

*Prerequisite: (R), GCOM 1223, GCOM 1053 and GCOM 2323 or by evaluation. §*

**3 CREDITS** The student will prepare a portfolio for professional presentation and evaluation. The portfolio will consist of matted pieces, resume, and notebook which contains samples of projects representing skills using various graphic arts software programs.

## **GCOM 2813 WEB PAGE ANIMATION: FLASH I**

*Prerequisite: (R)*

**3 CREDITS** The student will be able to produce vector-based animated and interactive Web sites with frames and keyframes, layers, scenes, morphing, animations that follow a path, animations within a mask, static and animated buttons, sound for buttons and movies, and be able to publish work for web delivery on an HTML page.

## **GCOM 2833 WEB PAGE DESIGN II**

*Prerequisite: (R), GCOM 2793 or by evaluation. §*

**3 CREDITS** Students will use advanced HTML, CSS, and Javascript to create highly interactive Web content. They will also use PHP and MySQL to generate dynamic websites from a database, to process form input, and to incorporate Flash and other multimedia elements into websites. Student proficiency will be demonstrated by successful completion of projects.

## **GCOM 2843 WEB PAGE ANIMATION: FLASH II**

*Prerequisite: (R), GCOM 2813 or by evaluation. §*

**3 CREDITS** The student will demonstrate the ability to create interactive multimedia and web projects using the Flash software authoring environment. He/She will also demonstrate knowledge of ActionScript, the Flash programming language, and use it to create and enhance online (web sites) and offline (CD-ROM) projects. In addition, the student will demonstrate a working knowledge of variables, scripted motion, text fields, advanced movie clip options, arrays, and functions.

## **GCOM 2853 MULTIMEDIA PORTFOLIO PRODUCTION**

*Prerequisite: (R), GCOM 2813 and GCOM 2583 or by evaluation. §*

**3 CREDITS** The student will demonstrate the ability to design and produce an interactive QuickTime movie presentation using an authoring software. The production will include animation, graphics, text, digital photography, sound and video. The project will become part of the student's portfolio.

## **HISTORY**

### **HIST 1000 SPECIAL TOPICS IN HISTORY**

*Prerequisite: (R) or by evaluation. §*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other history courses. Each course will relate to a specific issue and may be repeated with a change in topic.

*General Education Course (humanities)*

### **HIST 1123 SURVEY OF AMERICAN SPORTS HISTORY**

*Prerequisite: None*

**3 CREDITS** Students will participate in discussions of American Sports History—which may include the study of baseball, football, basketball, and/or other sport histories and heroes, as well as their memories and myths from the age of folk games to the age of televised sports, with special emphasis on the nineteenth and twentieth centuries. Information sources for class discussions may include appropriate video, print, and/or Internet learning materials.

### **HIST 1483 U.S. HISTORY TO THE CIVIL WAR**

*Prerequisite: (R) (W)*

**3 CREDITS** After analyzing events in American history from 1400 to 1870 in such areas as revolution, geographic and social mobility, political reform, government precedents and war, the student will be able to identify patterns of present day mobility, describe governmental operations in his society and help resolve conflict in society based on the students search for change, precedents, and conflict in the American past.

*GenEd Requirement*

### **HIST 1493 U.S. HISTORY SINCE THE CIVIL WAR**

*Prerequisite: (R) (W)*

**3 CREDITS** After analyzing events in American history from 1870 to the present in such areas as political reform, industrialization, urbanization, ethnic acculturation and war, the student will be able to identify meaningful changes in his society, identify equal rights in that society, and help resolve conflict in this society based on the students search for change, equal rights and conflicts in the American past.

*GenEd Requirement*

### **HIST 1613 EARLY WESTERN CIVILIZATION**

*Prerequisite: (R) (W)*

**3 CREDITS** After surveying the roots of civilization, students will study the origins of Western Civilization in the Greco-Roman world, medieval Europe, the European Renaissance, the Reformation, and the Age of Discovery. Students will be able to identify contributions of early Western Civilization to the emergence of the modern West, including modern Europe and the United States.

*General Education Course (humanities)*

### **HIST 1623 MODERN WESTERN CIVILIZATION**

*Prerequisite: (R) (W)*

**3 CREDITS** After surveying the history of Western man since 1500, the student will be able to identify main themes in the development of Western civilization and describe their effects on the civilization of modern Western man.

*General Education Course (humanities)*

### **HIST 1713 SURVEY OF WORLD CIVILIZATIONS TO 1600 C.E.**

*Prerequisite: (R) (W)*

**3 CREDITS** After a general introduction to the roots of human civilization, students will survey the development of the major civilizations of Mesoamerica, Africa, Asia, and Europe to 1600 C.E. After studying these major civilizations in a comparative framework, students will be able to identify and explain both common aspects of human development and dissimilarities among the particular civilizations of the pre-modern world.

*General Education Course (humanities)*

### **HIST 1723 SURVEY OF WORLD CIVILIZATIONS SINCE 1600 C.E.**

*Prerequisite: (R) (W)*

**3 CREDITS** Students will survey the history of the major civilizations of Mesoamerica, Africa, Asia, and Europe from 1600 C.E. to the present. After studying these civilizations in a comparative framework, students will be able to identify major patterns of political, economic, social, and cultural change and conflict over a period in which contact between civilizations became more frequent and sustained and the West rose to world prominence.

*General Education Course (humanities)*

### **HIST 2000 SPECIAL TOPICS IN HISTORY**

*Prerequisite: Pre or Corequisite: Any 1000 level History course or by evaluation. §*

**VARIABLE: 1-4 CREDITS** In this course, the student will build on his or her background in U.S. History or Western Civilization survey courses. The student will develop a basic bibliography for a special topic in history. The bibliography will include primary and secondary sources. The student will learn writing skills that extend beyond the requirements of the survey course. The course will foster communication skills that will prepare the student to create an oral or written presentation on the historical topic. The student will be given an opportunity to develop computer software skills using the latest presentation software available. This course may be repeated with a change in content.

*General Education Course (humanities)*

### **HIST 2013 HISTORY OF RUSSIA**

*Prerequisite: (R) (W)*

**3 CREDITS** After studying the history of Russia from its beginning to the present, students will be able to identify and explain the political, economic, social, and cultural changes that occurred through the various stages of Russian development.

*General Education Course (humanities)*

## HIST 2103 OKLAHOMA HISTORY

*Prerequisite: (R) (W)*

**3 CREDITS** After analyzing events in Oklahoma history from the earliest times to the present in such areas as Indian acculturation, development of natural resources and political reform, the student will be able to relate his or her occupation to the needs of the state, describe his or her cultural inheritances in Oklahoma, and describe state governmental operations.

## HIST 2123 AFRICAN-AMERICAN HISTORY

*Prerequisite: (R) (W)*

**3 CREDITS** After analyzing African-American History from 1600 to the present, and surveying topics such as psychological identity, political reform, leadership, living patterns, and protest, the student will be able to identify prejudice in his or her own society, describe the current meaning of African American protest, and identify present day needs of the African American community.

*General Education Course (humanities)*

## HIST 2133 SURVEY OF WOMEN'S HISTORY

*Prerequisite: None*

**3 CREDITS** Students will study the history of women, in the course that may take an American, European, or international perspective. The public and private spheres of women's lives will be examined through reading and brief writing assignments, worksheets, participation, in class discussions, and book reviews. Students will submit assignments using MS Word or MS PowerPoint.

## HIST 2153 SURVEY OF AMERICAN FAMILIES AND COMMUNITIES

*Prerequisite: HIST 1483 or 1493 or by evaluation. §*

**3 CREDITS** Students will survey the history of the American family and community life in the nineteenth and twentieth centuries. Students will focus on slavery, industrialization, the growth of working classes, westward expansion, and changing roles of women in society. This is not a genealogy course, but a social history that relies on a wide range of historical resources.

## HIST 2203 THE AMERICAN INDIAN

*Prerequisite: (R) (W)*

**3 CREDITS** After analyzing events in Native American history including artifacts, social organization, recreation, art, religion, ceremonialism, history, prehistory and acculturation, the student will describe Indian cultural differences, identify trends in white-Indian relationships, explain how native cultures have influenced contemporary American culture and assess the major issues of the American Indians, past, present and future.

*General Education Course (humanities)*

## HIST 2213 GREAT AMERICAN BIOGRAPHIES

*Prerequisite: (R) (W)*

**3 CREDITS** Great American Biographies introduces students to biographies and autobiographies of significant people in U.S. history. Students study the lives and work of individuals by reading, watching biographical films, engaging in discussions, and, finally, by writing a fifteen-page biography of an ancestor or family member.

*General Education Course (humanities)*

## HIST 2303 HISTORICAL RESEARCH, METHODS, AND WRITING

*Prerequisite: ENGL 1113*

**3 CREDITS** The course is designed for History majors. It will prepare students to research and write research papers. Papers will present results of investigations on historical topics. Students will learn how to use library as a research tool for primary and secondary sources. The course will emphasize the importance of gathering, interpreting, and documenting evidence, organizing ideas and drawing conclusions.

*Note: This course satisfies the computer proficiency requirement.*

## HIST 2353 WORLD HISTORY: LATIN AMERICA

*Prerequisite: Pre or Corequisite: ENGL 1113 or by evaluation. §*

**3 CREDITS** Students will survey the history of Latin America, focusing on indigenous inhabitants, their interaction with Europeans, especially the Spanish

and Portuguese, the colonization process, independence movements and current economic, political and cultural issues. Course materials include textbooks and novels that relate the histories of the area as well as journal articles, websites and other sources. Student assignments will be submitted electronically.

*Note: This course satisfies the computer proficiency requirement.*

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## HUMANITIES

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### HUM 1113 MUSIC APPRECIATION

*Prerequisite: (R) (W)*

**3 CREDITS** After listening to and studying a variety of pieces representative of traditional forms of music, the student will identify and describe each of these forms. Emphasis will be on listening and the development of informed, critical listening habits. Attendance at musical concerts is required. This course is designed for non-music majors.

### HUM 2000 HUMANISTIC STUDIES

*Prerequisite: ENGL 1113*

**VARIABLE 1-6 CREDITS** With the assistance of a mentor, the student will develop and use a method to make humanistic inquiries into a topic which both agree adds to the understanding of human experience. Credit is variable; with different content it may be repeated for up to 6 credits.

### HUM 2103 MUSIC MASTERPIECES

*Prerequisite: (R) (W)*

**3 CREDITS** The student will listen to selected musical compositions from Bach to the 20th century composers and make accurate oral and written comments which describe the expressive features and cultural importance of these selections. The course may be repeated with a change in content.

### HUM 2120 MUSEUM STUDIES

*Prerequisite: ENGL 1113*

**VARIABLE 3-5 CREDITS** After visiting selected museums and attending lectures, discussions, and presentations on related topics, the student will research and make accurate oral and/or written statements about how the collections in various types of museums reflect human values and cultural traditions.

### HUM 2133 COMPARATIVE RELIGIONS

*Prerequisite: ENGL 1113*

**3 CREDITS** This course is a study of the major world religions both ancient and modern. The student will examine and compare historical developments, major historical figures, philosophical tenets and /or belief systems, and sacred texts from various religions. Also, students will evaluate the impact of these elements within a contemporary, global framework.

*Note: This course satisfies three credit hours of the General Education Humanities requirements for all Associate in Arts, Science, and Diversified Studies degrees.*

### HUM 2143 MYTHOLOGY

*Prerequisite: ENGL 1113*

**3 CREDITS** In this review of myth throughout history, students will examine common motifs shared by myths from various cultures. In discussions and written responses, students will analyze the connections between myths and describe the function of myth in society and its importance to the individual.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

### HUM 2153 INTRODUCTION TO EASTERN THOUGHT

*Prerequisite: ENGL 1113*

**3 CREDITS** This survey course is designed to introduce the student to the major religious and philosophic systems of the Asian world. After completing the course, the student will be able to accurately describe and discuss the historical development and major concepts of Hinduism, Buddhism (including Zen), Confucianism and Taoism.

**HUM 2163 LEADERSHIP DEVELOPMENT***Prerequisite: ENGL 1113*

**3 CREDITS** Given examples of leadership qualities and skills which are evident in selected readings from classical literature, portrayed in selected films and discussed in contemporary leadership theory, the student will develop a fundamental understanding of leadership and the skills manifest in effective leaders. Participation in course discussions and activities will enable the student to develop personal leadership abilities.

**HUM 2213 HUMANITIES-CLASSICAL AND MEDIEVAL***Prerequisite: ENGL 1113*

**3 CREDITS** This course is a study of the humanities from pre-history through the early Renaissance. The student will recognize, interpret, and evaluate the interrelationship of art, architecture, literature, philosophy, and music and their legacies and impact on contemporary culture.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associates in Art, Science, and Diversified Studies degrees.*

**HUM 2223 HUMANITIES-MODERN***Prerequisite: ENGL 1113*

**3 CREDITS** This course is a study of the humanities from the early Renaissance to the present. The student will recognize, interpret, and evaluate the interrelationship of art, architecture, literature, philosophy, and music and their legacies and impact on contemporary culture.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science and Diversified Studies degrees.*

**HUM 2233 EUROPEAN FILM***Prerequisite: ENGL 1113*

**3 CREDITS** After viewing classic and contemporary European films, the student will identify and describe those technical and artistic qualities which characterize fine films. The student will accurately describe the role of European cinema within the cultural framework of western civilizations.

**HUM 2243 FILM STUDIES***Prerequisite: ENGL 1113*

**3 CREDITS** The focus in this course will be on these film topics: composition, cinematography, editing, and sound techniques; in addition, the student will study narrative structure, thematic elements, and viewer response. Instructional films and readings will enable the student to understand each of these topics; furthermore, the student will view several classic and modern American and international films to exemplify and clarify cinematic techniques and concepts. The student will write and speak critically about film and its role in human culture.

*General Education Course (humanities)*

**HUM 2253 DOCUMENTARY FILMS***Prerequisite: ENGL 1113*

**3 CREDITS** Given historical information about documentary films, screenings of selected documentaries and discussions of the films' purposes and effects, a student will discuss orally or in writing how documentary films display, influence, and examine human values.

*General Education Course (humanities)*

**HUM 2263 AMERICAN CINEMA***Prerequisite: ENGL 1113*

**3 CREDITS** The focus in this course will be on these film topics: history and development, the studio system, economic structure, technical and critical vocabulary, style, the star, genres, themes, and audience. Instructional films and readings will enable the student to understand each of these topics; furthermore, the student will view several classic and contemporary American films to exemplify and clarify cinematic techniques and concepts. The student will think and write critically about film and its role in American culture.

*General Education Course (humanities)*

**HUM 2273 INTERNATIONAL CINEMA***Prerequisite: (W) ENGL 1113*

**3 CREDITS** In International Cinema, students will examine the themes and techniques of world films. Movies from various lands and cultures will be viewed, and students will write or speak critically about cinematic qualities, the cultural values, and the human conditions observed in the films.

**HUM 2283 FILM GENRE***Prerequisite: (W) ENGL 1113*

**3 CREDIT** In Film Genre, students will examine the themes and techniques of films in one of the primary genre. Students will view and study movies from a specific genre: comedy, science fiction, horror, independent, western, film noir, combat, animation, musical or crime/gangster. Students will write and speak critically about recurring patterns, conventions, and film techniques that predominate in a genre. Furthermore, students will be able to express their ideas concerning the cultural values represented or challenged by the particular genre.

**HUM 2293 FOLKLORE***Prerequisite: ENGL 1113*

**3 CREDIT HOURS** By reviewing literary and other artistic examples of folklore from around the world, students will study the evaluation of the folktales and the development of lore. Through discussion and written responses, students will describe the functions of folklore and analyze its importance to the individual and to various cultures throughout history.

*Note: This course satisfies three credit hours of the General Education Humanities requirement for all Associate in Arts, Science, and Diversified Studies degrees.*

**HUM 2353 HISTORY OF SCIENCE***Prerequisite: ENGL 1113*

**3 CREDITS** This course satisfies three credit hours of the General Education Humanities for all Associate in Arts, Science, and Diversified Studies degrees. Course units will examine selected episodes or periods in the history of science from ancient times until the present day. The course will treat the interaction of science and scientists with the social context as well as the internal structure and evolution of scientific ideas. Explanations of scientific theories and principles are not technical, and no special competence in science or mathematics is required.

**HUM 2373 INTRODUCTION TO WORLD MUSIC***Prerequisite: ENGL 1113*

**3 CREDITS** After a brief introduction to the aesthetic and functional dimensions of non-western music, students will learn to listen critically to indigenous music of several geographical areas and to analyze and make oral and written statements about its components. They will also examine the unique cultural, political, and religious factors which give rise to certain types of music. Students are encouraged to attend live performances whenever possible, and guest musicians are scheduled to visit the class. No previous musical training is assumed.

*General Education Course (humanities)*

**HUM 2423 ADVOCATES OF PEACE***Prerequisite: ENGL 1113*

**3 CREDITS** Advocates of Peace deals with a section of East-West culture and politics often overlooked today: the positive and successful influence one individual can have over the masses. In this course, the student will recognize the interdependency of people from totally different geographical and cultural backgrounds using the same ideas of non-violence and non-aggression to combat suppression of and discrimination against any group of people. Two dynamic leaders, Mahatma Gandhi and Dr. Martin Luther King, Jr., have been chosen to exemplify this process. They are as radically different in most respects as one can imagine, and yet, as philosopher politicians, they used the same concepts of non-aggressiveness and non-violence to bring freedom to their peoples.

*General Education Course (humanities)*

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**INSURANCE**

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**INS 1103 PRINCIPLES OF INSURANCE***Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate understanding of the principles of property and liability insurance to include insurance basics, marketing, underwriting, claims adjusting, insurance company performance, risk management, property exposures, liability exposures, and insurance policy contracts and provisions. The student will apply basic insurance principles using the case study method.

### **INS 1113 PRINCIPLES OF PERSONAL INSURANCE**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will analyze situations and determine the appropriate coverage for homeowners, dwelling and contents, personal liability, inland marine and other personal insurance policies.

### **INS 1203 PRINCIPLES OF COMMERCIAL INSURANCE**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will determine the appropriate insurance coverage for property, loss of business income, inland and ocean marine, crime, general liability, workers compensation and other commercial insurance policies.

### **INS 1213 ETHICS AND ADJUSTING PRACTICES**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will apply ethical practices to the processing of property and liability insurance claims.

### **INS 1243 WORKERS COMPENSATION**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will study the history and development of the workers compensation system as it relates to employers' liability insurance. Utilizing injury schedules in given situations, the student will calculate benefits demonstrating an understanding of medical terminology, anatomy, trauma, disability, rehabilitation, and medical treatment. The student will also identify cost control factors such as benefit levels and utilization, rising health care costs, and cost shifting.

### **INS 1253 PROPERTY INSURANCE ADJUSTING**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will solve special problems involving the adjustment of building, merchandise and stock, business interruption, and reporting form losses.

### **INS 1263 LIABILITY INSURANCE ADJUSTING**

*Prerequisite: (R) (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** Having reviewed the legal duties and client damages, the student will solve special problems involving legal, medical and workers compensation claims.

### **INS 2000 SPECIAL TOPICS**

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other insurance courses, but which are beneficial to students wanting a greater understanding of insurance functions. A specific topic is announced for each offering. May be repeated with a change of topic.

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## **INTERNATIONAL BUSINESS**

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### **INTL 2123 FUNDAMENTALS OF INTERNATIONAL BUSINESS**

*Prerequisite: (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The study of international business has become a necessary discipline for all business students irrespective of their area of major. The realization that "Globalization" is equally important to a domestic business as it is to a multinational corporation has forced the study of international business into the core curriculum of business school. This course stresses fundamental concepts and tools that international business managers should know. It addresses how differences in countries' economic, political, cultural and legal environment affect functional business decisions.

### **INTL 2223 FUNDAMENTALS OF INTERNATIONAL MARKETING**

*Prerequisite: (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** This course addresses marketing activities based on differing economic, social, geographic, and cultural environments. Emphasis is placed on problems and practices of managing international marketing activities. Topics include alternative ways of marketing internationally, approaches for conducting international marketing research, product adaptations, distribution channels between and with foreign markets, and international promotions.

### **INTL 2323 FUNDAMENTALS OF INTERNATIONAL FINANCE**

*Prerequisite: (W) MATH 0303 or adequate math placement test score.*

**3 CREDITS** The course begins with a brief but comprehensive review of balance of payments and international monetary arrangements. Foreign exchange markets, the risk of foreign exchange fluctuation, and different strategies for managing foreign exchange risk will be discussed. We will then concentrate on analysis of operational and strategic financial decisions of MNCs, including fund raising, working capital management, capital budgeting, financial structure, cost of capital and international project evaluation.

### **INTL 2423 FUNDAMENTALS OF INTERNATIONAL LOGISTICS MANAGEMENT**

*Prerequisite: (W) MATH 0203 or adequate math placement test score.*

**3 CREDITS** This course addresses the art and science of managing and controlling the flow of goods, energy, information and other resources like products, services, and people, from the source of production to the marketplace.

### **INTL 2523 INTERNATIONAL CAPSTONE COURSE**

*Prerequisite: (W)*

**3 CREDITS** This course is designed to provide students an opportunity to synthesize previous experiences and apply theoretical knowledge to the real world situations. To ensure students possess sufficient knowledge and understanding of global issues, enrollment is restricted to individuals in the final semester. A faculty advisor will work with the students to determine the course format which may include one of the following: case studies, internship, study abroad or research paper.

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## **INTERNATIONAL STUDIES**

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### **ISTU 1013 INTRODUCTION TO INTERNATIONAL STUDIES**

*Prerequisite: (R) (W)*

**3 CREDITS** In this course, students will begin to develop a global perspective and an appreciation for cultural diversity. Students will compare and contrast various regional areas with regard to: geography and ecology, history and religion, government and politics, business and economics, as well as culture and language.

### **ISTU 2033 INTERNATIONAL STUDIES CAPSTONE**

*Prerequisite: (R) (W) or by evaluation. §*

**3 CREDITS** This course is designed to provide students majoring in International Studies an opportunity to synthesize previous experiences and apply theoretical knowledge to the real world situations. To ensure students possess sufficient knowledge and understanding of global issues, enrollment is restricted to individuals in the final semester. A Faculty Advisor will work with the students to determine the course format which may include case studies or a portfolio.

*Note: (Enrollment is restricted to students in their final semester). Students must have completed the Introduction to International Studies and all major courses before taking the capstone course.*

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## **JOURNALISM AND BROADCASTING**

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### **JB 1000 SPECIAL TOPICS**

*Prerequisite: (R)*

**VARIABLE 1-4 CREDITS** The student will demonstrate competencies in subjects not covered in other mass media courses. Each course will cover a specific topic in Mass Media Communications and may be repeated with a change of subject matter.

### **JB 1013 INTRODUCTION TO MASS COMMUNICATION**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will describe the development, scope, functions and information resources of mass media, emphasizing the role of the consumer and the professional in mass communication and in solving contemporary problems in the mass media.

*General Education Course*

**JB 1103 AUDIO PRODUCTION***Prerequisite: (R) (W)*

**3 CREDITS** The student will use audio production techniques and equipment to produce program material of professional quality. Extensive laboratory work is required.

**JB 1133 NEWS WRITING***Prerequisite: (R) (W)*

**3 CREDITS** The student will become familiar with and proficient in the use of various news gathering and news writing techniques common to both the print media and the broadcast media. The student will demonstrate mastery by writing acceptable news stories, features, human interest stories and interpretive reports. Typing skills are required.

*Note: This course satisfies the computer proficiency requirement.***JB 2000 INTERNSHIP***Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-3 CREDITS** The student will work in a professional setting with practitioners in either radio, television, advertising, audio production, video production, photo, public relations, or print journalism. The course may be repeated to a maximum of 6 credit hours with the consent of the instructor.

**JB 2103 INDEPENDENT PROJECTS***Prerequisite: (R) (W)*

**3 CREDITS** The student may choose a project in the area of radio, television, photography, journalism, cinematography, or advertising with the advice and consent of the instructor. The student will produce materials of a professional quality ready for publication or broadcast. This course may be repeated.

**JB 2113 ADVERTISING***Prerequisite: (R)*

**3 CREDITS** The student will describe various aspects of the preparation of advertising through both the print and electronic media. He or she will effectively use typography, graphics, photography, layout, music, and sound effects in the preparation of an advertising campaign that uses both print and electronic media.

**JB 2303 MAGAZINE FEATURE WRITING***Prerequisite: (R) (W)*

**3 CREDITS** This course is designed for the writer who is beginning to write short to medium-length non-fiction articles. Students will review the markets, develop ideas, study interview techniques, and develop writing style by writing feature articles.

**JB 2413 PRINCIPLES OF PUBLIC RELATIONS***Prerequisite: (R) (W)*

**3 CREDITS** The student will describe the history, scope, ethics and functions of public relations. He or she will effectively use a multimedia approach in the preparation of a public relations campaign with particular attention to ways of gaining public support for an activity, cause, movement or institution.

**JB 2643 VIDEO PRODUCTION***Prerequisite: (R) (W)*

**3 CREDITS** The student will use video production techniques to produce, edit and direct program materials of broadcast quality. Extensive laboratory work is required.

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**LEARNING SKILLS**

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**LS 0023 COLLEGE WRITING I***Prerequisite: Assessment required prior to enrollment.*

**3 CREDITS** Through instruction in an increasingly collaborative environment, students will improve basic skills of written communications, focusing on good sentence and paragraph structure. Students will utilize the writing process, basic grammar and usage skills, and mechanics, as well as computer literacy when appropriate.

**LS 0033 COLLEGE WRITING II***Prerequisite: Adequate writing assessment score or College Writing I (LS 0023), either taken within the last year; with strong encouragement for immediate continuation.*

**3 CREDITS** Through instruction in an increasingly collaborative environment, students will improve skills in written communications with an emphasis on the writing process. Students will focus on proper grammar, usage, and mechanics as they learn to compose organized paragraphs and a basic 5-paragraph essay with development of computer skills. These skills will better prepare students for academic writing in college level courses.

**LS 0133 STUDY SKILLS***Prerequisite: None*

**3 CREDITS** The student will increase skills related to learning in the following areas: time management, personal learning styles, textbook reading, study techniques, listening, note-taking, memory techniques, and test-taking. Creative and critical thinking are emphasized throughout the course. This course is based on the premise that learning is an active process rather than a passive assimilation of information.

**LS 0203 COLLEGE READING I***Prerequisite: Assessment required prior to enrollment.*

**3 CREDITS** Through instruction in an increasingly collaborative environment, students will develop and increase skills in vocabulary, including use of context clues and word structure; increase comprehension of text by understanding the main idea and details; develop management and study skills for academic reading, as well as include computer literacy when appropriate.

**LS 0213 COLLEGE READING II***Prerequisite: Adequate reading assessment score or College Reading I (LS 0203), either taken within the last year; with strong encouragement for immediate continuation.*

**3 CREDITS** Through instruction in an increasingly collaborative environment, students will improve vocabulary through context clues and word structure analysis; increase comprehension of text by understanding the main idea, supporting details, and organizational patterns; practice organizational and note taking skills; develop critical thinking skills; and utilize reading technology. These skills will better prepare students for academic reading in college level courses.

**LS 0233 SPELLING/VOCABULARY DEVELOPMENT***Prerequisite: None*

**3 CREDITS** After appropriate instruction in common spelling rules, mnemonic techniques, the use of a dictionary and a thesaurus, and the study of common (Greek and Latin) word parts, the student will become more proficient in standardized spelling and will increase his or her written and spoken vocabulary.

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**LEISURE**

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**LEIS 1000 SPECIAL TOPICS***Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate special competencies in subject areas not covered in other Leisure courses, but which are beneficial in providing a better understanding of topics or activities in the field of Leisure Studies. A specific subject will be announced for each offering. Enrollment may be repeated with a change in topic.

**LEIS 1602 TOTAL WELLNESS***Prerequisite: None*

**2 CREDITS** Students will learn the different aspects of health including physical, mental, and emotional aspects. They will develop an understanding of health and be able to identify a healthy lifestyle. Students will also learn the different levels of physical fitness appropriate for different levels of development: childhood, adolescence, adulthood and older adulthood.

## LEIS 2000 SPECIAL TOPICS

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate special competencies in subject areas not covered in other Leisure courses, but which are beneficial in providing a better understanding of topics or activities in the field of Leisure Studies. A specific subject will be announced for each offering. Enrollment may be repeated with a change in topic.

## LEIS 2132 CARE AND PREVENTION OF ATHLETIC INJURIES

*Prerequisite: None*

**2 CREDITS** This course is designed to provide the student with the basic knowledge to assist with the prevention, recognition, and care of athletic injuries. It is a basic introduction to the field of sports medicine. The student will learn basic skills in taping and bracing. He/she will also be able to implement a prevention program for athletic injuries which will include education in exercise, flexibility and nutrition.

## LEIS 2413 INTRODUCTION TO LEISURE STUDIES

*Prerequisite: (R) (W)*

**3 CREDITS** This course introduces students to the nature, scope and significance of leisure and recreation. They will also study the delivery systems for leisure services, major program areas and the interrelationship of special agencies and institutions serving the recreation needs of society.

## LEIS 2443 HUMAN DIVERSITY IN LEISURE AND RECREATION

*Prerequisite: (R)(W)*

**3 CREDITS** This course allows students to examine their personal belief systems and to think critically about, and participate in, discussions regarding diversity and social justice issues in leisure and recreation, as well as in everyday life.

## LEIS 2463 LABORATORY IN LEISURE SERVICES

*Prerequisite: (R) (W)*

**3 CREDITS** Through lecture, discussion and experiential learning, students will study recreation and leisure activities. They will develop skills to lead and/or knowledge to organize adapted activities, small and large group games, sports, arts and crafts, music, drama and culutural events.

## LEIS 2473 FOUNDATION OF LEISURE SERVICE LEADERSHIP

*Prerequisite: (R) (W)*

**3 CREDITS** This course introduces the student to the principles and practical applications of group leadership techniques, problem solving, supervision and evaluation of personnel. Laboratory experience is an integral part of the course.

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## MANAGEMENT

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### MGMT 1533 INTRODUCTION TO SERVICE MANAGEMENT

*Prerequisite: (R) (W)*

**3 CREDITS** The student will demonstrate knowledge of the service management field. Areas of discussion will be service trends, safety, employee relations, industry outlooks and business development.

### MGMT 2000 SPECIAL TOPICS

*Prerequisite: None*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other management courses but which are beneficial to students wanting a greater understanding of the functions of management. A specific topic is announced for each offering. May be repeated with a change of topic.

### MGMT 2013 SMALL BUSINESS MANAGEMENT

*Prerequisite: (R) (W)*

**3 CREDITS** The student will study general concepts relating to small business ownership, financing, organization, and management. After exploring these concepts, the student will develop a detailed plan for establishing and operating a small business.

### MGMT 2053 PRINCIPLES OF MANAGEMENT

*Prerequisite: (R)*

**3 CREDITS** Having developed an understanding of the evolution of management, the role of the manager in business and the development of sound management systems, the student will outline and graphically illustrate some of the major management theories and their development. The student will also outline and explain the results of designated research in management.

### MGMT 2223 EFFECTIVE PLANNING

*Prerequisite: (R) (W) MATH 0303 or adequate math placement test score, MGMT 2053 or by evaluation. §*

**3 CREDITS** This course is designed to provide students with an in-depth study of the five planning phases. The student will demonstrate the knowledge and skills to develop, implement and evaluate strategic, tactical, standing, and single use plans. Specific emphasis will be placed on techniques useful in offsetting future uncertainties by the risk associated with decision making.

### MGMT 2323 TOTAL QUALITY MANAGEMENT

*Prerequisite: (R) (W) None, MGMT 2053 or by evaluation. §*

**3 CREDITS** This course is designed to introduce the principles of total quality management and to provide the student with a systematic way of applying quality techniques to any type of organization. Emphasis is given to customer focus, process improvement and total involvement. Students will demonstrate their knowledge through the simulation and case study methods.

### MGMT 2423 LEADERSHIP

*Prerequisite: (R) (W), MGMT 2053 or by evaluation. §*

**3 CREDITS** This course is designed to introduce students to the process of effective leadership. The student will study various leadership styles and theories and demonstrate acquired knowledge and skills through the use of various techniques, such as role playing, and the analysis of case studies.

### MGMT 2453 MID-MANAGEMENT SEMINAR

*Prerequisite: (R) or by evaluation. §*

**3 CREDITS** Projects and discussion are designed to correlate classroom training and work experience.

### MGMT 2523 EVALUATION AND CONTROL TECHNIQUES

*Prerequisite: (R) (W), MGMT 2053 or by evaluation. §*

**3 CREDITS** This course is designed to introduce the student to the process of assuring the effective and efficient accomplishment of desired objectives and goals. The student will study qualitative and quantitative control techniques, and apply these techniques to the evaluation of processes involving human, material, and financial resources. Students will demonstrate acquired knowledge and skills through the use of the simulation and case study methods.

### MGMT 2553 DIRECTED OCCUPATIONAL EXPERIENCE

*Prerequisite: (R), Must be a second semester student in Business or by evaluation. §*

**3 CREDITS** The student will function in a wide variety of positions in a business compatible with his/her occupational choice, which will enable him/her to carry out a series of objectives developed by the student, instructor and supervisor.

### MGMT 2623 STATISTICAL PROCESS CONTROL

*Prerequisite: (R) (W), BUS 2023 and MGMT 2053 or by evaluation. §*

**3 CREDITS** This course is designed to introduce the student to the theories of statistical process control. The student will demonstrate acquired knowledge of control techniques to the analysis of various processes, qualitative and quantitative, to achieve quality improvement.

### MGMT 2663 HUMAN RESOURCE MANAGEMENT

*Prerequisite: MGMT 2053 or by evaluation. §*

**3 CREDITS** The student will apply the principles of management to procurement, development, compensation, integration, and maintenance of personnel.

### MGMT 2913 MANAGEMENT APPLICATIONS

*Prerequisite: (R), 12 credit hours of MGMT Coursework or by evaluation. §*

**3 CREDITS** Using the case study method, the student will develop a systematic approach to decision making and apply this approach to the identification, evaluation and resolution of selected management problems.



**MGMT 2953 SUPERVISORY TRAINING***Prerequisite: (R)*

**3 CREDITS** The student will use role playing and videotaping exercises to demonstrate the ability to deal effectively with simulated situations in communication, listening, behavior analysis, human sensitivity and group behavior as they are encountered in the supervisory position.

**MANUFACTURING TECHNOLOGY****MET 1000 SPECIAL TOPICS***Prerequisite: None*

**VARIABLE 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other metal courses, but which benefit students wanting additional training in the field or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

**MET 1013 MACHINE TOOL THEORY***Prerequisite: None*

**3 CREDITS** Students will systematically study, recognize and discuss machine tool structures and capabilities, safety systems, metal cutting theory, shop calculations, tool geometry, cutting tool materials and standards, cutting fluids and non-traditional processes, and relate the application of these principles to machine shop operations.

**MET 1021 ORIENTATION TO MACHINING***Prerequisite: None*

**1 CREDIT** The student will be provided with and utilize proper safety procedures in labs, the classroom and the workplace. The student will learn and demonstrate machine safety in the areas of hand tools, saws, presses, lathes, grinders and milling. The student will also be provided basic knowledge in mathematics for shop practice implementation. This knowledge will be directly applied to simulated business and industry projects.

**MET 1033 SPECIAL TOPICS***Prerequisite: Corequisite: MET 1013*

**3 CREDITS** Having reviewed advanced operational methods with engine lathes, milling machines, surface grinders, as well as investigating additional electrical discharge machining concepts, the student will apply these methods in the construction of machined parts. Operations will include threading and tapers on the lathe; digital readout systems, dividing head and rotary table work on the milling machine; angles and contours on the surface grinder.

**MET 1112 PRECISION MEASUREMENT***Prerequisite: None*

**2 CREDITS** Through the systematic study of precision measuring tools, such as vernier-calipers, micrometers, dial indicators, optical comparators, electronic and air gauges, the student will recognize, discuss and apply the principles of precision measurement. Laboratory work is an integral part of this course.

**MET 1143 COMPUTER NUMERICAL CONTROL OPERATION***Prerequisite: Satisfactory Score on Computer Numerical Control Operation Placement Test.*

**3 CREDITS** The student will develop basic set up and programming skills on computer numerical control (CNC) lathes, mills and machining centers. Topics covered include cutting tool set up, fixturing alignment and set up, uploading and downloading of programs, minor program editing, identification and application of various cutting tools and cutting tool configurations.

*Note: This course satisfies the computer proficiency requirement.***MET 1153 COMPUTER NUMERICAL CONTROL SETUP***Prerequisite: MET 1143*

**3 CREDITS** The student will develop basic set up and programming skills on computer numerical control (CNC) lathes, mills machining centers. Topics covered include cutting tool set up, fixturing alignment and set up, uploading of programs, minor program editing, identification and application of various cutting tools and cutting tool configurations.

*Note: This course satisfies the computer proficiency requirement.***MET 1232 PRINT READING***Prerequisite: (R) (W) MET 1021*

**2 CREDITS** The student will develop and demonstrate the skills required for visualizing and interpreting industrial prints. The student will apply these skills to machine shop operation. The student will demonstrate knowledge of drawings and prints, visualizing shapes, line usage, title blocks, working drawings contours, sectional views, geometric dimensioning and tolerancing and other appropriate concepts that are required by business and industry.

**MET 1423 INTRODUCTION TO MILLING OPERATIONS***Prerequisite: (R) (W) and MET 1013*

**3 CREDITS** Students will become familiar with tools and techniques of milling machine operations as well as the theory of milling operations in the manufacturing process. Students will learn and understand industry specific safety standards and guidelines of milling operations in a manufacturing process, tool and shop safety, and print reading specific to milling operations. In applied laboratory assignments, students will demonstrate an understanding of print reading, mathematic calculations relating to setting up a milling operation, milling operations in a manufacturing process, and industry specific safety standards and guidelines.

**MET 1424 MILLING OPERATIONS***Prerequisite: (R), (W) and MET 1013*

**4 CREDITS** Through the investigation of the theories, tools and techniques involved with milling machine operations, the student will recognize, discuss and apply the principles of precision milling machine work. Laboratory work is an integral part of the course. Topics covered are setup, squaring, boring, drilling, dividing head and rotary table work.

**MET 1433 INTRODUCTION TO ENGINE LATHE OPERATIONS***Prerequisite: (R) (W) and MET 1013*

**3 CREDITS** Students will become familiar with the theory and operations of engine lathes. Students will learn and understand industry specific safety standards and guidelines associated with the operation of engine lathes in the manufacturing process, equipment and shop safety, and print reading specific to engine lathe operations. Laboratory assignments are an integral component of this course.

**MET 1434 ENGINE LATHE OPERATIONS***Prerequisite: (R), (W) and MET 1013*

**4 CREDITS** While analyzing the theory and operation of the engine lathe, the student will describe and apply the principles of turning, as well as the tools and equipment involved. Laboratory activity is an integral part of this course. Topics covered will include setup, nomenclature, turning, facing, boring, screwthreads, tapers, and tool geometry.

**MET 1443 INTRODUCTION TO PRECISION SURFACE GRINDING***Prerequisite: (R) (W) and MET 1013*

**3 CREDITS** Students will identify, evaluate and apply the principles of surface grinding operations including wheel structure and uses and accessories. Students will learn industry specific safety standards and guidelines associated with precision surface grinding process in manufacturing, equipment and shop safety, and mathematics required in the production process and print reading specific to precision surface grinding. Laboratory assignments are an integral component of this course.

**MET 1444 PRECISION SURFACE GRINDING***Prerequisite: (R), (W) and MET 1013*

**4 CREDITS** Through the systematic examination of precision surface grinding techniques, the student will identify, evaluate, and apply the principles of surface grinder operations. Laboratory work is an integral part of this course. Topics covered are wheel structure and uses, setup, surface finish, accessories and contours.

**MET 2103 METALLURGY***Prerequisite: None*

**3 CREDITS** The student will describe the sources, preparation and properties of various ferrous and non-ferrous metals. He or she will solve problems relating to heat treatment and mechanical deformation of metals and apply the solution in laboratory experiments.

## **MET 2203 MACHINE TOOLS: PRODUCTION APPLICATIONS**

*Prerequisite: MET 1033*

**3 CREDITS** Having developed an understanding of theories and procedures of fixturing and tooling for production applications, the student will apply this knowledge by completing selected projects within established tolerances. The student will use standard, as well as self-designed, fixturing and tooling for production application of the lathe, milling machine and surface grinder.

## **MET 2213 ELECTRICAL DISCHARGE MACHINING**

*Prerequisite: None*

**3 CREDITS** The student will review and apply electrical and electro-chemical machining methods. Laboratory activities, simulations, and problem-solving activities are integral parts of the course.

## **MET 2223 NUMERICAL CONTROL I**

*Prerequisite: MET 1424*

**3 CREDITS** The student will relate numerical control theory and computer numerical control techniques and practices to various machine tools, including milling, turning, and drilling machines. Simulations, problem-solving activities and laboratory activities are integral parts of the course.

## **MET 2233 NUMERICAL CONTROL II**

*Prerequisite: MET 2223*

**3 CREDITS** Through the analysis and study of advanced computer numerical control techniques and logic, the student will program and operate the computer numerical control milling machine. Topics covered are multi-quadrant circular interpolation, cutter compensation, polar coordinate, repetitive programming and canned cycles.

## **MET 2243 TOOLMAKING BASICS**

*Prerequisite: MET 1033*

**3 CREDITS** Through the investigation of toolmaking techniques, special tools, and processes, the student will recognize, discuss and apply the basic principles of precision tool construction and assembly. Laboratory work is an integral part of this course.

## **MET 2253 JIG AND FIXTURE THEORY**

*Prerequisite: MET 2243*

**3 CREDITS** The student, through systematic study of jig and fixture design, application and construction, will identify and describe various types of jigs and fixtures, as well as evaluate their designs.

## **MET 2273 ADVANCED TOOLMAKING**

*Prerequisite: MET 1033*

**3 CREDITS** The student will demonstrate, in supervised laboratory experiences, the ability to construct a punch and die, jig or fixture. The student will be assigned a laboratory project dependent on completed Prerequisite. Evaluation will be based upon completion of the project, with special emphasis on accuracy and the ability of the tool to function properly.

## **MET 2413 TOOLING THEORY**

*Prerequisite: MET 1013*

**3 CREDITS** Through the systematic study of jig, fixture and die design, application and construction, the student will identify and describe various types of jigs, fixtures and dies, as well as evaluate their designs for economic and construction feasibility.

## **MET 2423 COMPUTER NUMERICAL CONTROL PROGRAMMING**

*Prerequisite: MET 1153*

**3 CREDITS** The student will recognize and discuss computer numerical control programming principles and apply those principles by writing simple to complex computer numerical control (CNC) programs. Subjects covered include absolute and incremental programming, application of G and M codes, linear and circular interpolation, polar coordinate programming, canned cycles and repetitive programming. The student will apply these principles using program preparation systems including geometry, code processor and simulator software packages.

*Note: This course satisfies the computer proficiency requirement.*

## **MET 2433 JIGS AND FIXTURING**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will review and apply jig and fixture methods. Laboratory activities, simulations and problem-solving activities are integral parts of the course.

## **MET 2443 TOOL AND DIE REPAIR**

*Prerequisite: (R) (W), MET 2243*

**3 CREDITS** The student will demonstrate the ability to analyze production parts identifying tooling problems in pressworking tools, bending, forming, drawing, and forging dies. Additional training in tool and die blueprints, repairing and replacement of die components, assembly and testing, and documentation by the student are all instructional components of this course.

## **MET 2502 TOOLMAKING PRACTICUM**

*Prerequisite: (R) (W), MET 2273*

**2 CREDITS** The student will demonstrate the ability to design, dimension, build and test a single function tool using advanced toolmaking theory and practices.

## **PRDT 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate specified competencies in subjects not included in other metal courses, but which benefit students wanting additional training in the field or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

## **PRDT 1213 INDUSTRIAL COMMUNICATIONS**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will describe typical methods used by industry for internal communications in such areas as quality control reporting and communications between production and engineering. A broad spectrum of methods from blueprints to CAD systems will be investigated.

## **PRDT 1223 INTRODUCTION TO COMPUTER INTEGRATED MANUFACTURING**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will discuss the systems, sub-systems and the computer integration of systems in modern manufacturing. Topics include production control systems, artificial intelligence applications, robotics, applications, computer-aided engineering, and manufacturing systems. The student will relate these systems to current events in modern manufacturing enterprises and describe their impact on management method and profit.

*Note: This course satisfies the computer proficiency requirement.*

## **PRDT 1233 MECHANICAL SYSTEMS**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will demonstrate competencies by installing, adjusting, aligning, and troubleshooting mechanical systems that include bearings, belt drives, roller chain drives, gear drives, couplings, clutches and brakes, and conveyors. Laboratory experience with equipment similar to that used in industry is an integral part of this course.

## **PRDT 1243 MANUFACTURING FABRICATIONS**

*Prerequisite: (R) (W), PRDT 1223*

**3 CREDITS** Students will learn to identify and apply solutions to routine maintenance issues associated with mechanical and electrical manufacturing equipment in manufacturing facilities. Students will learn and demonstrate basic metal fabrication techniques used in modern manufacturing facilities to perform preventive and proactive equipment repair. Students will fabricate common manufacturing equipment items such as chain guards, shields and covers for mechanical or electrical manufacturing equipment.

## **PRDT 1313 MANUFACTURING MAINTENANCE**

*Prerequisite: (R) (W), PRDT 1223*

**3 CREDITS** Students will learn to safely configure setup and operate shielded metal arc welders and oxy-acetylene cutting equipment to perform maintenance tasks associated with manufacturing processing systems. Students will be able to demonstrate an understanding of industry related safety standards and guidelines of

tool safety, welding specific print reading, metal preparation, electrode selection and calculate specific ratios for the safe operation of an oxy-acetylene cutting torch and a shielded metal arc welder. Laboratory work is an integral part of this course.

### PRDT 1413 FLUID POWER

*Prerequisite: (R) (W)*

**3 CREDITS** This course is an introduction to using pressurized hydraulic components in power delivery and positioning systems. Students will use hydraulic pumps and motors and make hydraulic connections, measurements, and calculations.

### PRDT 1534 PROGRAMMABLE CONTROLLER PROGRAMMING

*Prerequisite: (R) (W)*

**4 CREDITS** Following a study of the theory and operational characteristics of programmable control systems used in industry, the student will demonstrate the operation of a programmable controller by writing a program to control on-delay and off-delay timers, test the program for correct operation and apply troubleshooting techniques as necessary. Laboratory experience with equipment similar to that used in industry is an integral part of the course.

*Note: This course satisfies the computer proficiency requirement.*

### PRDT 1542 PROGRAMMABLE CONTROLLER INTERFACING

*Prerequisite: (R) (W), PRDT 1534*

**2 CREDITS** The student will write a program for a programmable controller, implementing a multiple input/output system to control the operation of an external electromechanical device. The student will interface photosensitive devices as detectors in the system and will run the program to verify proper operation.

*Note: This course satisfies the computer proficiency requirement.*

### PRDT 2013 GEOMETRIC TOLERANCING TECHNIQUES

*Prerequisite: (R) (W)*

**3 CREDITS** The student will be introduced to the concepts of geometric tolerancing. Geometric tolerancing terms and symbols will be recognized and understood. The student will interpret and apply these to special projects that will reflect various work-based opportunities.

### PRDT 2023 MACHINING FOR MANUFACTURING

*Prerequisite: (R) (W), PRDT 1223*

**3 CREDITS** Students will learn processes and techniques to safely perform general maintenance machining techniques to address a variety of maintenance issues associated with medium-to-large production equipment. Students will demonstrate these techniques by completing task lab assignments as required by industrial manufacturing technicians. Typical tasks include turning shafts, boring sprockets, and removing broken bolts.

### PRDT 2112 INTRODUCTION TO QUALITY CONTROL

*Prerequisite: (R) (W), MET 1112 or any 1000 level Math class*

**2 CREDITS** The student will prepare and apply control procedures and devices, including coordinate measuring machines, which are typically used in manufacturing. The student will develop sampling and acceptance plans, control charts and various other statistical process control functions.

### PRDT 2122 ADVANCED PROGRAMMABLE LOGIC CONTROLLERS

*Prerequisite: (R) (W), PRDT 1544*

**2 CREDITS** The student will perform on-line programming, editing and troubleshooting techniques for factory-level programmable controllers. Networks and data highways will be utilized in the course.

### PRDT 2213 ADVANCED QUALITY CONTROL

*Prerequisite: (R) (W), PRDT 2112*

**3 CREDITS** The student will prepare and apply control procedures and devices, including coordinate measuring machines and profile projects, which are typically used in manufacturing complex shapes.

### PRDT 2222 STATISTICAL PROCESS CONTROL

*Prerequisite: (R) (W), PRDT 2112*

**2 CREDITS** The student will develop sampling and acceptance plans, control charts and various other statistical process control functions using manual and computer assist calculations.

*Note: This course satisfies the computer proficiency requirement.*

### PRDT 2333 POWER RF AND VACUUM INTERFACING

*Prerequisite: (R) (W), ET 1604, ET 2044*

**3 CREDITS** The student will study RF energy and its applications in manufacturing, vacuum technology, and vacuum systems. Topics include plasma physics, gas laws and properties; RF applications, safety, generators, transmission and interference; as well as operation and application of vacuum pumps, gauges, valves and system leak detection. Includes lab. This course may be designed to be industry specific.

### PRDT 2523 MOTION CONTROL

*Prerequisite: (R) (W), PRDT 1413*

**3 CREDITS** The student will differentiate between conventional hydraulic and servo hydraulic systems used to control and monitor motion in automated manufacturing systems. The student will select proper servo and feedback components to perform specified tasks, set-up and adjust servo systems to manufacturer's specifications and test servo systems to ensure compliance with operational parameters.

### PRDT 2532 ROBOTICS

*Prerequisite: (R) (W), PRDT 1544*

**2 CREDITS** The student will develop programs to control servo and non-servo robots as well as continuous path servo robots, to interface robots into an automated system, and to maintain the operation of multi-task robotic systems within operating parameters.

### PRDT 2544 COMPUTER INTEGRATED MANUFACTURING

*Prerequisite: (R) (W), PRDT 1223*

**4 CREDITS** This is the concluding course in the Computer Integrated Manufacturing option. The student will set up a batch processing line which converts raw material into a finished product, utilizing the concepts learned in earlier courses and provide programming, interfacing and troubleshooting of an automated system.

*Note: This course satisfies the computer proficiency requirement.*

### PRDT 2553 COMPUTER-AIDED MACHINING

*Prerequisite: (R) (W), MET 2423*

**3 CREDITS** The student will review principles of computer-aided machining (CAM) and apply these principles in the development of computer numerical control (CNC) programs for machine tools, using an integrated software system. Topics include development of job plans, using computer-aided drafting (CAD) databases, application and modification of post processors, and simulation of programmed operations.

*Note: This course satisfies the computer proficiency requirement.*

### PRDT 2563 MANUFACTURING PROCESSES

*Prerequisite: PRDT 1223*

**3 CREDITS** Student will learn concepts associated with different manufacturing processes involved in the various productions of common products such as glass, rubber, steel and food products. Emphasis will be placed upon the role of the maintenance technician in keeping equipment functioning efficiently with preventive, predictive, and proactive maintenance procedures. In addition to the basic manufacturing processes, students will understand the philosophy and methods associated with the industry "LEAN Manufacturing" processes as they apply to advanced manufacturing settings.

### PRDT 2603 SENSORS AND POSITION DEVICES

*Prerequisite: (R) (W), ET 2044*

**3 CREDITS** The student will demonstrate knowledge of the uses and applications of sensors and positioning devices used in automation and control systems. The student will use sensors and positioning devices to perform specified tasks. Upon completing this course, the student will be able to select and install appropriate sensors and troubleshoot sensors and positioners.

### **PRDT 2623 TROUBLESHOOTING CNC/IMC SYSTEMS**

*Prerequisite: (R) (W), PRDT 2613*

**3 CREDITS** The student will demonstrate knowledge of installing, setting up and maintaining various types of intelligent motion controllers. Motion control theory will be demonstrated by troubleshooting these systems. Additionally, special industrial applications and a project will be completed by the student.

### **PRDT 2633 APPLICATIONS OF ASRS/CIM SYSTEMS**

*Prerequisite: (R) (W), PRDT 2122*

**3 CREDITS** This course is designed to teach the student how to set up a batch process line which converts raw material into a finished product. Utilizing CIM concepts, the student will demonstrate program interfacing and troubleshooting of ASRS/CIM systems.

### **PRDT 2663 INDUSTRIAL SAFETY**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will recognize an industrial environment that could be injurious to personnel, systems and processes. Areas to be included are industrial accidents, accident investigations, safety inspection, hazardous materials, preventive measures and associated costs. The student will also demonstrate familiarity with federal, state and local health and safety regulations by discussing their impact on industry.

### **PRDT 2702 AUTOMATED SYSTEMS INTEGRATION PRACTICUM**

*Prerequisite: (R) (W) PRDT 2633*

**2 CREDITS** The student will write a project plan for implementing an advanced manufacturing subsystem and analyzing input requirements. After approval of the plan, the project will be assembled and tested.

### **PRDT 2713 MANUFACTURING PRACTICUM**

*Prerequisite: PRDT 1223*

**3 CREDITS** Students will work with a mentor from the manufacturing industry to develop and produce a career-preparation portfolio documenting activities that help prepare the student for the realities of the workplace. Activities include but are not limited to program lab assignments, mentorship, job shadowing, resume writing workshops, industry visits, and related job interviews which provide the student with practical industry experience.

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## **MARKETING**

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### **MKT 2043 PRINCIPLES OF MARKETING**

*Prerequisite: (R) MATH 0203 or adequate math placement test score.*

**3 CREDITS** The student will discuss the major aspects of each of the portions of the marketing mix (product, price, promotion and distribution), how they function, their interrelationships and the management of each. The student will use accepted techniques and tools in analyzing, evaluating and making decisions in marketing-related cases.

### **MKT 2163 EFFECTIVE SELLING**

*Prerequisite: (R)*

**3 CREDITS** The students will use role playing to demonstrate his/her ability to apply the techniques of effective salesmanship to simulated situations in communications, sales consulting, and the seven steps of effective selling as encountered in a professional salesperson position.

### **MKT 2253 CONSUMER BEHAVIOR**

*Prerequisite: (R) (W)*

**3 CREDITS** After studying the motivational factors that influence the consumer, the student will analyze selected marketing practices. The analytical process will focus on specific techniques to collect market-related data, assess past consumer behavior, identify marketing strategies, and design and evaluate potential marketing activities.

### **MKT 2343 ADVERTISING**

*Prerequisite: (R)*

**3 CREDITS** The student will prepare advertising copy, illustrations and layout and will demonstrate a proficiency in media and research techniques necessary for advertising.

### **MKT 2453 INTERNATIONAL MARKETING**

*Prerequisite: (R)*

**3 CREDITS** The student will study the effects of cultural, technological, political and legal differences upon marketing in an international environment and apply certain principles and concepts to marketing activities conducted on a global basis.

### **MKT 2553 MARKETING APPLICATIONS**

*Prerequisite: (R), 12 credit hours of MKT coursework or by evaluation. §*

**3 CREDITS** Using the case study method, the student will develop a systematic approach to decision making and apply this approach to the identification, evaluation, and resolution of selected marketing problems.

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## **MATHEMATICS**

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### **MATH 0103 COLLEGE PREP MATH I**

*Prerequisite: Math placement test score or evaluation by advisor.*

**3 CREDITS** This course provides the conceptual foundation of whole numbers, fractions, decimals, percents, and integers with the purpose of preparing students to perform and apply calculation and solution techniques with these topics in future classes. Students will use manipulatives, number lines, and other concrete examples to model basic mathematical representations and operations. Additionally, the student will apply math study skills throughout this course.

### **MATH 0203 COLLEGE PREP MATH II**

*Prerequisite: MATH 0103 or adequate math placement test score.*

*Pre- or Co-requisite: LS 0203 College Reading I or adequate Reading Placement Test score.*

**3 CREDITS** The student will perform basic operations with signed numbers, exponents, and polynomials; solve linear equations, inequalities, and formulas; and plot points and graph lines in the Cartesian coordinate system. Additionally, the student will apply math study skills throughout this course.

### **MATH 0303 COLLEGE PREP MATH III**

*Prerequisite: MATH 0203 or adequate math placement test score.*

*Pre- or Co-requisite: LS 0203 College Reading I or adequate Reading Placement Test score.*

**3 CREDITS** The student will factor polynomials; perform operations, solve equations and model applications with rational expressions and ratios; and will analyze and write equations for graphs of linear relationships and their applications. Additionally, the student will apply math study skills throughout this course.

### **MATH 0403 COLLEGE PREP MATH IV**

*Prerequisite: MATH 0303 or adequate math placement test score.*

*Pre- or Co-requisite: LS 0203 College Reading I or adequate Reading Placement Test score.*

**3 CREDITS** The student will solve systems of linear equations by graphical and algebraic methods; solve equations involving quadratic functions and analyze their graphs; and model applications using linear and quadratic functions. Additionally, the student will apply math study skills throughout this course.

### **MATH 1000 SPECIAL TOPICS**

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not covered in other courses, but which are beneficial in providing a better understanding of the related program. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**MATH 1503 CONTEMPORARY MATHEMATICS**

*Prerequisite: (R) (W), MATH 0403 or adequate math placement test score.*

**3 CREDITS** A study of the mathematics needed for critical evaluation of quantitative information and arguments (including logic, critical appraisal of graphs and tables); use of simple mathematical models, and an introduction to elementary statistics.

*Note: This course satisfies the computer proficiency requirement.*

*GenEd Requirement*

**MATH 1513 COLLEGE ALGEBRA**

*Prerequisite: (R), MATH 0403 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate an understanding of the general concepts of relation and function and specifically of polynomial, exponential, and logarithmic functions; the ability to solve systems of equations by utilizing matrices and determinants; and the ability to solve practical problems using algebra.

*GenEd Requirement*

**MATH 1533 PRE-CALCULUS AND ANALYTIC GEOMETRY**

*Prerequisite: (R) (W), MATH 0403 or adequate math placement test score.*

**3 CREDITS** This course is intended to serve students for whom Calculus and Analytic Geometry I is a requirement. Topics will include conic sections, systems of equations (both linear and nonlinear), and a general discussion of functions with emphasis on polynomial, rational, exponential, and logarithmic functions.

*GenEd Requirement*

**MATH 1613 TRIGONOMETRY**

*Prerequisite: (R), Pre or Corequisite: MATH 1513 or MATH 1533 or adequate math placement test score.*

**3 CREDITS** The student will evaluate trigonometric functions and their inverses, graph trigonometric functions, prove trigonometric identities, solve trigonometric equations, solve problems involving triangles and indirect measurement, use trigonometric forms of complex numbers, and identify and graph polar curves.

**MATH 1743 CALCULUS I FOR BUSINESS, LIFE SCIENCES, AND SOCIAL**

*Prerequisite: (R), MATH 1513 or adequate math placement test score.*

**3 CREDITS** This is the first of a two-semester sequence in elementary calculus in which students use the concepts of differential and integral calculus to solve theoretical and applied problems in business, life sciences, and social sciences.

**MATH 2000 SPECIAL TOPICS**

*Prerequisite: None*

**Variable 1-4** The student will demonstrate specified competencies in subjects not covered in other courses, but which are beneficial in providing a better understanding of the related program. A specified subject is announced for each offering. Enrollment may be repeated with a change in topic.

**MATH 2013 INTRODUCTION TO STATISTICS**

*Prerequisite: (R), MATH 0403 or adequate math placement test score.*

**3 CREDITS** The student will solve problems applying the concepts of random sampling, elementary probability, testing hypotheses, descriptive measures, chi-square, regression and correlation, and analysis of variance.

*GenEd Requirement*

**MATH 2023 FOUNDATIONS OF GEOMETRY AND MEASUREMENTS**

*Prerequisite: (R), MATH 0403 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate an understanding of the basic concepts of geometric shapes, measurement, triangle congruence and similarity, coordinates, and transformations; the ability to think conceptually of mathematics and to apply the concepts learned in real life problem solving situations.

**MATH 2104 CALCULUS AND ANALYTIC GEOMETRY I**

*Prerequisite: (R) (W), MATH 1533 and MATH 1613 or adequate math placement test score.*

**4 CREDITS** The student will compute, interpret and apply the basic concepts of limits, differentiation and integration to algebraic and transcendental functions and will solve applied problems that include rates of change, optimization, area and total change in a function.

*Note: This course satisfies the computer proficiency requirement.*

**MATH 2123 CALCULUS II FOR BUSINESS, LIFE SCIENCES AND SOCIAL SCIENCES**

*Prerequisite: (R), MATH 1743*

**3 CREDITS** MATH 2123 is the second of a two-semester sequence in elementary calculus in which students use the concepts of differential and integral calculus to solve theoretical and applied problems in business, life sciences, and social sciences.

**MATH 2213 MATHEMATICAL SYSTEMS**

*Prerequisite: (R) (W), MATH 0403 or adequate math placement test score.*

**3 CREDITS** The student will demonstrate an understanding of arithmetic; give a systematic analysis of arithmetical operations as well as intuitive algebra. Topics include the structure of number systems, operations, properties, ordering and number theory beginning with natural numbers and extending through the set of all real numbers.

**MATH 2214 CALCULUS AND ANALYTIC GEOMETRY II**

*Prerequisite: (R) (W), MATH 2104 or equivalent within the last year.*

**4 CREDITS** The student will use integration techniques to find antiderivatives, compute definite integrals, and solve application problems that include volume, work and pressure; investigate the convergence of improper integrals and infinite series; use Taylor polynomials and Taylor Series to estimate, represent, and analyze functions; perform basic operations on vectors and analyze functions of three variables and their contour plots.

*Note: This course satisfies the computer proficiency requirement.*

**MATH 2314 CALCULUS AND ANALYTIC GEOMETRY III**

*Prerequisite: (R) (W), MATH 2214 or equivalent within the last year.*

**4 CREDITS** The student will compute partial derivatives, gradients, differentials, double and triple integrals in rectangular, cylindrical and spherical coordinate systems, curl and divergence of a vector field, and path and surface integrals of vector fields directly and by applying Green's Theorem, Stokes' Theorem and the Divergence Theorem; write parameterizations for lines, curves and surfaces; and solve application problems that include optimization, work and flows of vector fields.

*Note: This course satisfies the computer proficiency requirement.*

**MATH 2413 INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS**

*Prerequisite: (R) (W), Math 2214 or a minimum of 8 semester hours of calculus.*

**3 CREDITS** This course will cover methods of solution of ordinary differential equations with applications. Topics will include first order equations, linear equations of higher order, series solutions, Laplace transforms, applications and numerical methods.

*Note: This course satisfies the computer proficiency requirement.*

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**MEDICAL ASSISTANT**

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**MA 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other medical assistant courses, but that are beneficial in providing a better understanding of the field. A specific topic would be covered for each offering. Enrollment may be repeated with a change of topic.

## **MA 1022 MEDICAL LAW AND ETHICS**

*Prerequisite: (R) (W)*

**2 CREDITS** Students demonstrate a knowledge of ethical issues, contracts, health care worker liability, medical litigation, drug regulations, discrimination issues, OSHA rules, bioethical issues, medical records, acceptable fees, and laws that may affect the health care professional. Emphasis is placed upon the settings that employ medical assistants. This course covers information necessary to understand the legal and ethical standards of the medical assistant practice.

## **MA 1033 MEDICAL INSURANCE AND CODING**

*Prerequisite: (R) (W)*

**3 CREDITS** This course covers information necessary to understand medical insurance form preparation as it is used in a medical clinical office. Students will demonstrate an understanding of the legal issues of insurance claims, procedural & diagnostic coding, delinquent claims, problem solving, managed care systems, proper form preparation and several major types of medical forms.

## **MA 1113 PSYCHOLOGY FOR THE HEALTH PROFESSIONAL**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is an introduction to the major areas of psychology as it relates to the health care professional. The student will demonstrate an understanding of the basic principles of psychology such as interpersonal behavior, patient behavior, learning, emotional stability, personality, perception, memory, coping styles, abnormal patterns of behavior, and treatment. Emphasis is placed on the behavioral patterns of an effective health care provider.

## **MA 1133 CLINICAL PROCEDURES I**

*Prerequisite: (R) (W); Corequisite: AHP 1013 and BIO 1224*

**3 CREDITS** The student will receive an overview of the medical assistant career. An emphasis will be placed on professionalism, history of the profession, human relations, OSHA guidelines, medical asepsis, vital signs, emergency procedures, law, ethics, communications and documentation.

## **MA 1143 MEDICAL ASSISTANT APPLICATIONS**

*Prerequisite: (R) (W)*

**3 CREDITS** Students demonstrate proficiency in microcomputer word processing software applied to the medical office to create, modify, store, retrieve, and print documents. This course is an introduction and overview with an emphasis on learning and applying the mechanics of common software for medical office correspondence.

## **MA 1233 CLINICAL PROCEDURES II**

*Prerequisite: (R) (W); Corequisite: MA 1133*

**3 CREDITS** The student will demonstrate an understanding of such skills as maintaining the examination area, performing clinical lab tests, venipuncture, microhematocrit, twelve lead electrocardiograph (ECG), drug calculation and medication administration. An emphasis is placed on the patient's physical examination and treatment procedures that are performed in a medical office setting.

## **MA 2213 PHARMACOLOGY FOR MEDICAL ASSISTANTS**

*Prerequisite: (R) (W)*

**3 CREDITS** Students identify sources, schedules and classes of drugs. Students identify and interpret actions of drugs commonly used in a physician's office, accurately calculate drug dosages, and identify appropriate administration routes. Students learn to follow the written, verbal or standing physician's orders and properly prepare and administer medications using aseptic techniques as required.

## **MA 2234 ADMINISTRATION AND MEDICAL OFFICE PROCEDURES**

*Prerequisite: (R) (W)*

**3 CREDITS** This course is designed to study the ethics, attitudes and responsibilities for the administrative tasks that occur in a medical office setting. Emphasis is placed on developing the skills and aptitudes for a professional medical assistant career in the administrative area.

*Note: This course satisfies the computer proficiency requirement.*

## **MA 2243 MEDICAL INFORMATICS**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will gain an understanding of the automated medical office by using a computerized medical office package. Included in this software package is billing, charge slips, scheduling, insurance form preparation and patient data storage. The student will demonstrate familiarity with methods and techniques used in literary research for medical professionals. The student will further be exposed to the basic concepts of e-mail, search engines, web page creation and internet research.

## **MA 2252 MEDICAL ASSISTANT SIMULATION**

*Prerequisite: (R) (W); Prerequisite: MA 1133; MA1233*

**2 CREDITS** This course builds upon previous knowledge from medical assistant courses. Students apply critical thinking skills to include the processes of planning, managing and delivering care to patients. Students schedule, prepare and assist in the care of a group of virtual patients' health care needs. Emphasis placed on communication skills in relation to patients and their families. Further, students manage a simulated clinic including patient charts, inventories, billing, scheduling, insurance form preparation, coding, and other administrative and clinical duties. A variety of teaching methods, learning activities, computer research, and practical simulations are utilized.

## **MA 2413 MEDICAL OFFICE LABORATORY PROCEDURES**

*Prerequisite: (R) (W)*

**3 CREDITS** Students receive an overview of patient preparation, collection, handling, quality control and transporting of specimens for the most common CLIA (Clinical Laboratory Improvement Amendments) waived laboratory tests performed in a doctor's office. Furthermore, students demonstrate how to complete medical laboratory request forms and laboratory/pathology reports.

## **MA 2516 MEDICAL ASSISTANT EXTERNSHIP**

*Prerequisite: (R) (W); Prerequisite: Completion of 26 credit hours in the major.*

**6 CREDITS** This course is designed to apply the knowledge and skills acquired in previous medical assistant courses to the clinical site. Externship assignments are scheduled to provide students with adjunct faculty and supervised experience in performing the skills and competencies of a medical assistant in a physician's office. Students accept accountability and responsibility for their own behavior while in the learning environment, and practice within the ethical and legal framework of the profession of a medical assistant.

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## **MICRO-ELECTRO-MECHANICAL SYSTEMS**

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### **MEMS 2233 MICRO-ELECTRO-MECHANICAL SYSTEMS**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score, PHYS 1214*

**3 CREDITS** Students will learn computer simulation and modeling techniques for micro-electromechanical systems. Students will learn to design, analyze, and evaluate the performance of a variety of MEMS devices.

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## **MUSIC**

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### **MU 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other music courses. Each course will relate to a specific musical skill or area of knowledge and may be repeated with a change in subject matter.

### **MU 1124 MUSIC THEORY I**

*Prerequisite: (R) (W) Math 0103 or adequate math placement test score.*

**4 CREDITS** This course will develop notational skills in music theory through the study of triad function, beginning harmonic analysis, basic principles of voice

leading, connection of SATB triads in root position and inversion, phrase structure, and cadences. The foregoing skills will be demonstrated through the partwriting of bass lines and reinforced through correlated aural and keyboard application exercises.

### **MU 1131 CONCERT CHOIR**

*Prerequisite: None*

**1 CREDIT** The student will participate in vocal rehearsals and performances for the college choir. A wide variety of choral literature will be studied and performed including works for a cappella chorus. No audition is required. The course may be repeated.

### **MU 1141 INDIVIDUAL INSTRUCTION**

*Prerequisite: (R) (W)*

**1 CREDIT** The student will receive individual instruction in beginning techniques for a musical instrument. Performance in at least one studio recital will be expected. The course may be repeated. Maximum credit at this level for a Music major toward the associate degree is two credit hours.

### **MU 1151 GROUP INSTRUCTION**

*Prerequisite: (R) (W)*

**1 CREDIT** The student will receive group instruction in beginning techniques for a musical instrument. The course may be repeated until the student's skills are proficient enough to enter MU 1241. Maximum credit at this level toward the associate degree for a Music major is two credit hours.

### **MU 1224 MUSIC THEORY II**

*Prerequisite: (R) (W) MU 1124*

**4 CREDITS** This course is a continuation of MU 1124 Music Theory I. The student will develop additional skills in music theory through the study of the principles of harmonic progression, harmonization of bass and soprano lines, and the use of non-harmonic tones. Compositional analysis and original composition also will be emphasized. Correlated aural and keyboard application exercises will be an integral part of the course.

### **MU 1241 INDIVIDUAL INSTRUCTION**

*Prerequisite: (R) (W)*

**1 CREDIT** This course is a continuation of MU 1141. Technical skills will be reinforced and built upon. The student will receive individual instruction for a musical instrument. Performance in at least one studio recital will be expected. This course may be repeated. Maximum credit at this level toward the associate degree for a Music major is two credit hours.

### **MU 1251 GROUP INSTRUCTION**

*Prerequisite: (R) (W) MU 1151*

**1 CREDIT** This course is continuation of MU 1151. The skills begun in that course will be reinforced and refined through the increased performance of solo and ensemble repertoire. This course may be repeated. Maximum credit at this level toward the associate degree for a Music major is two credit hours.

### **MU 1331 CHAMBER SINGERS**

*Prerequisite: (R) (W) or by evaluation. §*

**1 CREDIT** Chamber Singers is a musical ensemble of approximately twenty to thirty vocal performers. Membership is by audition only. Students selected for membership participate in all rehearsals and performances of the group and represent Oklahoma City Community College in numerous performances both on and off campus. The course may be repeated.

### **MU 1341 SYMPHONIC COMMUNITY CHOIR**

*Prerequisite: None*

**1 CREDIT** This class will be a performing music ensemble. Students will participate in all rehearsals and performances. A wide variety of choral literature will be studied and performed including works for a cappella chorus. No audition is required. The course may be repeated.

### **MU 2000 SPECIAL TOPICS**

*Prerequisite: (R) (W) HUM 1113 or MU 1124*

**1-3 CREDITS** The student will demonstrate competencies not covered in other music courses. Each course will relate to a specific musical skill or area of knowledge and may be repeated with a change in subject matter.

### **MU 2123 MUSIC LITERATURE I**

*Prerequisite: (R) (W)*

**3 CREDITS** This course explores selected musical works representative of the monophonic through the Baroque eras. The primary focus will be the identification and analysis of stylistic features within a historical perspective. Music listening will be a substantial component of the course.

*General Education Course (humanities)*

### **MU 2141 INDIVIDUAL INSTRUCTION**

*Prerequisite: (R) (W)*

**1 CREDIT** This course is a continuation of MU 1241. Objectives will be geared toward the study of challenging repertoire which demonstrates the skills and techniques studied. Performance in at least one studio recital will be expected. This course may be repeated. Maximum credit at this level toward the associate degree for a Music major is two credit hours.

### **MU 2223 MUSIC LITERATURE II**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will explore selected musical works representative of the Classic through the contemporary eras. The primary focus will be the identification and analysis of stylistic features within a historical perspective. Music listening will be a substantial component of the course.

*General Education Course (humanities)*

### **MU 2241 INDIVIDUAL INSTRUCTION**

*Prerequisite: (R) (W)*

**1 CREDIT** This course is a continuation of MU 2141. Objectives will be geared toward the study of challenging repertoire which demonstrates the skills and techniques studied. Performance in at least one studio recital will be expected. This course may be repeated. Maximum credit at this level toward the associate degree for a Music major is two credit hours.

### **MU 2242 INDIVIDUAL INSTRUCTION**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will receive individual instruction in more advanced technique and performance. This course is intended for the more advanced students who may or may not be preparing for a degree recital. This course may be repeated.

*Note: Maximum credit at this level toward the associate degree for a Music major is four credit hours.*

### **MU 2314 MUSIC THEORY III**

*Prerequisite: (R) (W) MU 1224*

**4 CREDITS** This course is a continuation of MU 1224 Music Theory II. The student will study the usage of dominant and non-dominant seventh chords, secondary dominant chords, borrowed chords, and modulation. Harmonization of bass and soprano lines, compositional analysis, and original composition will be emphasized. Correlated aural and keyboard application exercises will be an integral part of the course.

### **MU 2341 CLASSICAL GUITAR ENSEMBLE**

*Prerequisite: (R)*

**1 CREDIT** Classical Guitar Ensemble is a performing group for students of classical guitar. Study and performance of repertoire specially written and arranged for guitar ensemble will be the primary activity. Students will participate in multiple rehearsals and performances. This course may be repeated.

### **MU 2414 MUSIC THEORY IV**

*Prerequisite: (R) (W) MU 2314*

**4 CREDITS** This course is a continuation of MU 2314 Music Theory III. The student will study augmented sixth chords, Neopolitan and altered dominant chords, and modulation with the diminished seventh and major-minor seventh chords. Harmonization of bass and soprano lines, compositional analysis, and original composition will be emphasized. Correlated aural and keyboard application exercises will be an integral part of the course.

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## NETWORK TECHNOLOGY

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### NT 1000 SPECIAL TOPICS

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other Network Technology courses but which benefit students wanting additional training in or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1113 OPERATING SYSTEMS

*Prerequisite: (R) (W)*

**3 CREDITS** Students will learn basic computer concepts and terms associated with a variety of computer operating systems, and progresses into the Microsoft Windows 9X and Windows 2000 Professional graphical operating systems. Through hands-on application the student will install, configure and troubleshoot common network operating systems. At completion of the course the student will be prepared to take the CompTIA A+ certification exam.

### NT 1114 MICROCOMPUTER INSTALLATION AND SERVICE

*Prerequisite: (R) (W), NT 1113*

**4 CREDITS** The student will use effective diagnostic, analytical and mechanical skills to demonstrate installation and service of microcomputer systems troubleshooting; system diagnostics; advanced peripheral installation and testing; software installation; and survey of state-of-the-art processors and operating systems.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1124 COMPUTER NETWORK CONNECTIONS: COPPER

*Prerequisite: (R) (W)*

**4 CREDITS** Students will learn the concepts and skills necessary to become entry-level cable technicians. Students will complete activities that demonstrate learning theory and types of copper cable, terminating UTP, STP, F-Type, BNC, UDC and wall jacks and identifying and troubleshooting cable standards and cable connection faults.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1134 CONFIGURING AND TROUBLESHOOTING DESKTOP APPLICATIONS

*Prerequisite: (R) (W)*

**4 CREDITS** The student will be able to install, configure and troubleshoot office desktop user application issues found in standard and widely used operating systems in today's work place. Students will learn the importance of how to properly and effectively communicate with end-users about problems, then isolate the problems and then propose and document solutions. Students will be able to create e-mail and newsgroups accounts as well as configure desktop environments to support the various Windows applications.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1144 INTRODUCTION TO NETWORKING

*Prerequisite: (R) (W), NT 1114*

**4 CREDITS** Students will gain an understanding of networking technology for local area networks (LAN's) and the characteristics of networking practices. The students will also learn a wide range of networking technologies including the knowledge needed to configure and install various clients, such as Microsoft, Novell and Unix/Linux.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1154 INTERNETWORK THEORY & DESIGN

*Prerequisite: (R) (W), NT 1144*

**4 CREDITS** Students will study basic network topologies and protocols. They will study the use of LANs and WANs, Open Systems Interconnection (OSI) model, Ethernet, and Internet Protocol (IP) addressing. Students will demonstrate competencies through designing and documentation of basic networks, structured cabling and network-to-network communications.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1164 MS WINDOWS PROFESSIONAL INSTALLATION AND SUPPORT

*Prerequisite: (R) (W), NT 1144*

**4 CREDITS** Students will install and configure a Windows operating system, create and manage users and groups; configure file systems and security; configure local network printing; share resources with other network users; troubleshoot and tune their Windows workstation's performance.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1184 LINUX INSTALLATION AND ADMINISTRATION

*Prerequisite: (R) (W), NT 1144*

**4 CREDITS** The student will demonstrate specific competencies through "hands-on" activities using the Linux operating system. Students will examine hardware and software requirements; install a Linux based operating system and software package; configure system settings, network services, and access rights. In addition, the student will manage users, file systems, services, and devices; monitor and maintain processes, network interfaces, system logs, security, and troubleshoot generic and specific hardware.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1194 NOVELL NETWARE INSTALLATION AND ADMINISTRATION

*Prerequisite: (R) (W), NT 1144*

**4 CREDITS** The student will demonstrate specific competencies through "hands-on" activities which prepares students to administer a fileserver, install and configure client software; implement and manage network access security and file system security; create manager user groups; create login scripts, manage network printing services, use fileserver commands, create alias and application objects.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1224 MS OFFICE INSTALLATION AND SUPPORT

*Prerequisite: (R) (W)*

**4 CREDITS** The student will learn the concepts in the basic and intermediate features of a standard office suite of software, including word processing, spreadsheet, database, and presentation applications. The student will also get experience in the installation of components related to an office software suite.

*Note: This course satisfies the computer proficiency requirement.*

### NT 1233 NETWORK ROUTING SYSTEMS

*Prerequisite: (R) (W), NT 1154*

**3 CREDITS** Students will demonstrate competencies through activities that include the router command line, basic router configurations, interior routing protocols such as RIP and IGRP, routed versus routing protocols, and various software used to configure a router such as Telnet, Terminal Emulation, and TFTP.

*Note: This course satisfies the computer proficiency requirement.*

### NT 2000 SPECIAL TOPICS

*Prerequisite: (R) (W) or by evaluation. §*

**1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other Network Technology courses but which benefit students wanting additional training in or comprehension of the field. Each course will cover a specific topic and may be repeated with a change in content.

*Note: This course satisfies the computer proficiency requirement.*

### NT 2114 MS WINDOWS SERVER INSTALLATION AND SUPPORT

*Prerequisite: (R) (W), NT 1164*

**4 CREDITS** Students will install and configure the operating system, create and manage users and groups, configure file systems and security, manage access to files and folders, administer the distributed file system, configure local and network printing, administer terminal services, manage web services and network connections, and troubleshoot and tune their server's performance.

*Note: This course satisfies the computer proficiency requirement.*



**NT 2124 NETWORK SWITCHING SYSTEMS**

*Prerequisite: (R) (W), NT 1233*

**4 CREDITS** Students will demonstrate competencies through activities that include advanced router configuration, LAN switching theory, VLAN's, advanced LAN and WAN switch design, and the Novell IPX protocol.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2144 NETWORK SERVICES**

*Prerequisite: (R) (W), NT 2114*

**4 CREDITS** The student will develop competencies through "hands-on" experience that provides a foundation to the network services available in a windows network environment. Each student will install, manage, monitor, configure and troubleshoot DNS, DHCP, remote access, network protocols, IP routing, WINS, Network Address Translation, and services in a network environment.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2154 DIRECTORY SERVICES**

*Prerequisite: (R) (W), NT 2114*

**4 CREDITS** The student will demonstrate competencies through "hands-on" activities that provide a foundation to windows based active directory services available in a windows network environment. Each student will install, configure and troubleshoot active directory components, DNS for active directory, active directory security solutions and group policy.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2164 WAN SYSTEMS AND DESIGN**

*Prerequisite: (R) (W), NT 2124*

**4 CREDITS** Students will demonstrate competencies through activities that include WAN devices, encapsulation formats, PPP components, session establishment, and authentication, ISDN uses, services, and configuration, Frame relay technology and configuration.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2324 NETWORK PLANNING AND DESIGN**

*Prerequisite: (R) (W), NT 2114*

**4 CREDITS** Students will develop an understanding of the knowledge and skills necessary to design windows based directory services infrastructure in an enterprise network. The student will demonstrate competencies in identifying the information technology needs of an organization, and then designing an active directory structure that meets those needs.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2344 PROXY SERVER INSTALLATION AND ADMINISTRATION**

*Prerequisite: (R) (W), NT 2114*

**4 CREDITS** The student will learn extensible firewall protection, response time and efficiency. In addition, students will develop competencies in web caching, fault-tolerance and load balancing and implementing Proxy Server with existing networks, including IPX networks and supporting Internet protocols and services.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2374 COMPUTER NETWORK CONNECTIONS: FIBER**

*Prerequisite: (R) (W), NT 1124*

**4 CREDITS** Students will demonstrate competencies through activities that include identifying fiber optic tools and supplies, understanding the characteristics of light waves, cable construction, terminating ST connectors to light guided building cable and multimode fiber optic cable, and testing for quality connections.

*Note: This course satisfies the computer proficiency requirement.*

**NT 2394 NETWORK ADMINISTRATION**

*Prerequisite: (R) (W)*

**4 CREDITS** The student will be provided with "hands-on" laboratory experience in which they will demonstrate an understanding of a windows networking environment. Students will configure TCP/IP properties, monitor network activity, manage local, Active Directory, and IP security policies, install and configure the DHCP service, create and manage DNS zones, install and configure the RRAS service, create remote access policies, and configure and troubleshoot IP routing.

*Note: This course satisfies the computer proficiency requirement.*

**NURSING****NUR 1000 SPECIAL TOPICS**

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other Nursing courses but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**NUR 1221 OVERVIEW OF NURSING**

*Prerequisite: None*

**1 CREDIT** This course is designed for students who are considering nursing as a career choice and presents an introduction to nursing as a profession with emphasis on types of nursing programs, historical influences, professionalism, ethics, the nursing process, and current trends and issues affecting nursing. The course also offers information concerning the student's degree plan, time/stress management, and study skills that would be helpful in progressing through an integrated nursing program.

**NUR 1423 PHARMACOLOGY FOR NURSING PRACTICE**

*Prerequisite: Math 0303 or adequate math placement test score.*

**3 CREDITS** The course utilizes a nursing process approach to provide an overview of common pharmacological therapies which are used in client care across the lifespan. It is designed to aid student success in a nursing program as well as to augment theory within the core nursing curriculum courses. Content includes phases of drug action, principles of drug administration, drug classifications and an introduction to dosage calculation. The course will be offered through both online and web enhanced formats. The course also serves as a clinical update for practicing nurses.

**NUR 1512 NURSING TRANSITION I**

*Prerequisite: CHEM 1123 and CHEM 1131 or CHEM 1115; BIO 1023, BIO 1314; PYS 1113; Meet basic requirements for admission to the Nursing Career Ladder Pathway, LPN, or Oklahoma Licensed Paramedic. Corequisites: PSY 2403; ENGL 1113; BIO 1414*

**2 CREDITS** The course is designed for students applying to the nursing program's career ladder pathway who are LPNs (graduates of non-NLNAC accredited practical nursing programs) or who are Oklahoma licensed paramedics. Theory concepts included in the course will include nursing process and critical thinking. The course will also provide reviews of nursing care for childbearing families, including neonates, and clients experiencing common medical-surgical health care needs. The course design will incorporate directed studies and computer assisted instruction.

**NUR 1519 NURSING PROCESS I**

*Prerequisite: Traditional: (R) Admission to the nursing program; BIO 1023; CHEM 1123 and CHEM 1131 or CHEM 1115. Corequisites: BIO 1314; ENGL 1113.*

*Prerequisites for Baccalaureate to Associate Degree Nurse Accelerated Pathway are: (R) (W) Math 0403; Admission to the Nursing Program; CHEM 1123 AND CHEM 1131 OR CHEM 1115; BIO 1023, BIO 1314, BIO 1414, BIO 2125, PSY 1113, PSY 2403, ENGL 1113, ENGL 1213, POLS 1113, HIST 1483 or HIST 1493.*

**9 CREDITS** Nursing Process I introduces the learner to nursing knowledge, including the nursing process, clinical reasoning skills, and the components of safe, quality nursing care. The learner will begin to apply nursing knowledge to meet clients' basic needs and to promote clients' optimal health within complex healthcare systems. Each learner will be expected to accept accountability for personal learning and performance of nursing care which reflects basic understanding and commitment to professional nursing role expectations, including the values, ethics, legalities, and standards for nursing practice.

*NUR 1519 includes theory, campus laboratory and clinical learning experiences. Online learning experiences are integrated components of the course.*

## NUR 1529 NURSING PROCESS II

*Prerequisite: Traditional: NUR 1519; BIO 1314; ENGL 1113. Corequisites: BIO 1414; PSY 1113*

*Prerequisites for Baccalaureate to Associate Degree Nurse Accelerated Pathway are: NUR 1519*

**9 CREDITS** Nursing Process II is designed to promote learner development of additional nursing knowledge and skills, including clinical reasoning, while meeting the multi-dimensional needs of clients across the lifespan within complex healthcare systems. The course is divided into two components. One component focuses on safe, quality nursing care of clients with common medical-surgical health alterations. The second component focuses on safe, quality nursing care of the childbearing family. Learners will be expected to use communication competencies, including technological competencies, while participating with the healthcare team to provide client-centered care. Each learner will also be expected to act in accordance with an increasing understanding of personal accountability for compliance with professional role expectations, consistent with the values, ethics, legalities, and standards for nursing practice.

*NUR 1529 includes theory, campus laboratory and clinical learning experiences. Online learning experiences are integrated components of the course.*

## NUR 1532 NURSING TRANSITION II

*Prerequisite: CHEM 1123 and CHEM 1131 OR CHEM 1115; BIO 1023, BIO 1314, BIO 1414, PSY 1113, ENGL 1113, NUR 1512 (unless exempt).*

*Corequisite: ENGL 1213; POLSC 1113*

**2 CREDITS** The course is designed for licensed paramedics and licensed practical nurses who have been admitted to the nursing program's career ladder pathway. The course will introduce students to the philosophy and organizing framework of the OCCC nursing program. Theory concepts will include role transition as well as role expectations and legal considerations for the practice of the registered nurse. Course content will also provide introductions to the Human Patient Simulator and the nursing computer lab with reviews of basic nursing skills, including IV therapy and drug calculations. The course design will incorporate directed studies and computer aided instruction.

## NUR 2539 NURSING PROCESS III

*Prerequisite: Traditional: NUR 1529; BIO 2125; PSY 2403. Corequisites: PSY 2403, POLSC 1113.*

*Prerequisites for Career Ladder Pathway are: NUR 1532; POLSC 1113; ENGL 1213. Corequisites: BIO 2125.*

*Prerequisites for Baccalaureate to Associate Degree Nurse Accelerated Pathway are: NUR 1529.*

**9 CREDITS** Nursing Process III is designed for the learner to build upon nursing knowledge, skills, and clinical reasoning abilities acquired in previous nursing courses while meeting the multi-dimensional needs of clients across the lifespan within complex healthcare systems. The course is divided into two components. One component focuses on safe, quality nursing care of clients with more complex medical-surgical health alterations. The second component focuses on safe, quality nursing care of clients with psychiatric/mental health alterations. Learners will be expected to use communication competencies, including technological and informatics competencies, while functioning with increasing effectiveness as a healthcare team member to provide client-centered care. The course is also designed to assist the learner to apply principles of teaching/learning necessary to meet the more complex needs of assigned clients. Each learner will be expected to act with an increasing level of personal accountability for compliance with professional role expectations to include the values, ethics, legalities, and standards for nursing practice.

*NUR 2539 includes theory, campus laboratory and clinical learning experiences. Online learning experiences are integrated components of the course.*

## NUR 2549 NURSING PROCESS IV

*Prerequisite: Traditional: NUR 2539, PSY 2403; POLSC 1113. Corequisites: HIST 1483 or HIST 1493.*

*Prerequisites for Baccalaureate to Associate Degree Nurse Accelerated Pathway are: NUR 2539.*

*Prerequisites for Career Ladder Pathway are: NUR 2539, BIO 2125.*

*Corequisites: HIST 1483 or HIST 1493.*

**9 CREDITS** Nursing Process IV is designed for the learner to build upon nursing knowledge and skills acquired in previous nursing courses, including higher levels of clinical reasoning abilities. Each learner will independently use the nursing

process and clinical reasoning to meet the multi-dimensional needs of a variety of clients, whether individual, family, group, or community. Client-centered care will be provided in settings within complex healthcare systems, including critical care. The learner will use a collaborative approach involving the client, family, significant others, and members of the healthcare team to manage responsibilities for groups of clients. Each learner will be expected to act in accordance with professional role expectations, including the values, ethics, legalities, and standards for entry-level nursing practice.

*NUR 2549 includes theory, campus laboratory and clinical learning experiences. Online learning experiences are integrated components of the course.*

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## OCCUPATIONAL THERAPY ASSISTANT

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### OTA 1000 SPECIAL TOPICS

*Prerequisite: (R)*

**VARIABLE 1-4** The student will demonstrate specified competencies in subject areas not covered in other Occupational Therapy courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic

### OTA 1112 APPLICATION OF LEISURE OCCUPATION

*Prerequisite: (R) (W) MATH 0103 or adequate math placement test score.*

*Pre or Corequisite: OTA 1123*

**2 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will (1) demonstrate basic skills in techniques, procedures, and activity analysis of selected leisure occupations, (2) identify performance components involved in leisure occupations, (3) select appropriate activities and skills for health maintenance and/or remediation based upon various client factors and contexts, and (4) instruct an individual in a selected activity ensuring proper tool, materials, and safety usage. Level I fieldwork is included in the course.

### OTA 1122 PERFORMANCE IN ACTIVITIES OF DAILY LIVING

*Prerequisite: OTA 1112; OTA 1123*

**2 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will demonstrate basic skill in techniques and procedures of activities of daily living and activity analysis. The student will demonstrate knowledge of environmental adaptation for a variety of client factors and contexts in the areas of activities of daily living. Level I fieldwork is included in the course.

### OTA 1123 HISTORICAL AND CONTEMPORARY FOUNDATIONS IN OCCUPATIONAL THERAPY

*Prerequisite: (R) (W)*

**3 CREDITS** Through study, discussion, and field observation/participation, the student will (1) investigate a career choice in Occupational Therapy (2) gain an appreciation for The Model of Human Occupation (3) demonstrate a basic understanding of medical terminology (4) develop an understanding of the history and philosophy of Occupational Therapy with major emphases on contemporary roles, practice and functions and (5) investigate the role of the Occupational Therapy Assistant as part of the health care team. Level I fieldwork is included in the course.

### OTA 1213 MOVEMENT AND THERAPEUTIC INTERVENTIONS

*Prerequisite: OTA 1112; OTA 1123; OTA 1223; SOC 2143*

*Corequisite: OTA 1233*

*Pre or Corequisite: OTA 1122; BIO 1414*

**3 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will apply assessment and evaluation concepts to human movement. The student will also develop an understanding of the various types of therapeutic interventions utilized in Occupational Therapy. Concepts and considerations in the use of orthotics and modalities are included in the course.

**OTA 1223 HUMAN CONDITIONS IMPACTING OCCUPATION**

*Prerequisite: Pre or Corequisite: OTA 1112; OTA 1123; BIO 1314; SOC 2143*

**3 CREDITS** Through study, discussion, and classroom presentation of human conditions, the student will develop an understanding of how each condition by itself, or with others, impacts an individual's daily occupation, family, and/or community.

**OTA 1233 OCCUPATIONAL PERFORMANCE — BIRTH THROUGH ADOLESCEN**

*Prerequisite: OTA 1112; OTA 1123; OTA 1223; SOC 2143*

*Corequisite: OTA 1213*

**3 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will examine the development of sensory motor, cognitive, and psychosocial skills necessary for an individual's occupational performance from birth through adolescence. The student will also acquire and demonstrate Occupational Therapy skills and techniques used in therapeutic intervention for selected deficits impacting occupational performance. Level I fieldwork is included in the course.

**OTA 1242 OCCUPATIONAL THERAPY SERVICE SKILLS**

*Prerequisite: OTA 1112; OTA 1122; OTA 1123; OTA 1213; OTA 1223; OTA 1233; BIO 1414; SOC 2143*

*Pre or Corequisite: OTA 1252; ENGL 1233; PSY 2403*

**2 CREDITS** Through study, discussion, and classroom activities, the student will (1) examine and discuss medical and legal aspects of intervention service programs (2) identify various types of medical and institutional records (3) apply skills in data gathering (4) effectively utilize various assessment tools and evaluations for intervention planning (5) demonstrate proper documentation utilizing verbal and written reports.

**OTA 1252 GROUP DYNAMICS**

*Prerequisite: OTA 1112; OTA 1123; OTA 1223; SOC 2143*

*Pre or Corequisite: OTA 1122; OTA 1213; OTA 1233; PSY 1113*

**2 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will gain an understanding of group dynamics including the role of a group leader or facilitator. The student will demonstrate proficiency in using methods and materials for planning, organizing, and leading activities for groups of various sizes and ages in a variety of social and clinical/therapeutic situations.

**OTA 1263 OCCUPATIONAL PERFORMANCE — ADULT LIFESPAN**

*Prerequisite: OTA 1112; OTA 1122; OTA 1123; OTA 1213; OTA 1223; OTA 1233; OTA 1252; BIO 1414; SOC 2143*

*Pre or Corequisite: OTA 1242; PSY 2403*

**3 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will examine the occupational performance, personal adaptation, work, leisure, and role changes occurring from early adulthood through the aging process. The student will examine the role of Occupational Therapy in wellness, aging in place, and end of life issues. Level I fieldwork is included in the course.

**OTA 2141 SPECIAL TOPICS AND FIELDWORK**

*Prerequisite: Corequisite: OTA 2164*

*Pre or Corequisite: OTA 2153; MATH 1503*

**1 CREDIT** Through study, discussion, and classroom activities, the student will become familiar with Level II fieldwork expectations, performance evaluations, and the roles of the supervisor/supervisee. The student will also investigate personal topics specific to future Level II fieldwork assignments.

**OTA 2143 PROFESSIONAL DEVELOPMENT AND SUPPORT**

*Prerequisite: OTA 2141; OTA 2153; OTA 2164; MATH 1503*

*Corequisite: OTA 2253*

**3 CREDITS** Through study, discussion, and classroom activities, the student will develop an understanding and application of concepts in administration,

supervision, ethics, licensure, certification, and ongoing professional development in Occupational Therapy. The student will also demonstrate an understanding of the evolution of healthcare in the United States along with the norms and practices of diverse cultures as they relate to the delivery of healthcare services.

**OTA 2153 OCCUPATIONAL THERAPY FOR PSYCHOSOCIAL CONDITIONS**

*Prerequisite: OTA 1242; ENGL 1233; PSY 2403*

*Pre or Corequisite: OTA 1263*

**3 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will be able to implement Occupational Therapy intervention plans with individuals impacted by specific psychosocial conditions. Level I fieldwork is included in the course.

**OTA 2164 OCCUPATIONAL THERAPY FOR PHYSICAL CONDITIONS**

*Prerequisite: OTA 1242; OTA 1263*

*Corequisite: OTA 2141*

*Pre or Corequisite: OTA 2153*

**4 CREDITS** Through study, discussion, and classroom/laboratory activities, the student will be able to implement Occupational Therapy intervention plans with individuals impacted by specific physical conditions. Level I fieldwork is included in the course.

**OTA 2253 FIELDWORK II A**

*Prerequisite: OTA 2141; OTA 2153; OTA 2164; MATH 1503*

*Corequisite: OTA 2143*

**3 CREDITS** The student will successfully complete eight weeks in an approved facility offering supervised Level II fieldwork experiences in the application of learned principles to the delivery of Occupational Therapy services.

**OTA 2263 FIELDWORK II B**

*Prerequisite: OTA 2141; OTA 2153; OTA 2164; MATH 1503*

*Corequisite: OTA 2253*

*Pre or Corequisite: HIST 1493; POLSC 1113*

**3 CREDITS** The student will successfully complete eight weeks in an approved facility offering supervised Level II fieldwork experiences in the application of learned principles to the delivery of Occupational Therapy services. Fieldwork sites are different from Fieldwork II A and are utilized to broaden the student's Level II experiential background.

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**ORTHOTIC/PROSTHETIC TECHNICIAN**

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**ORPR 1000 SPECIAL TOPICS**

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other orthotic or prosthetic courses, but which are beneficial in providing a better understanding of the field. A specific subject will be announced for each offering. Enrollment may be repeated with a change of topic.

**ORPR 1112 ORTHOTIC AND PROSTHETIC EQUIPMENT AND MATERIALS**

*Prerequisite: (R) (W)*

**2 CREDITS** The student will identify equipment, tools and materials used to manufacture various orthotic and prosthetic devices. Safety policies and procedures will be presented, and the student will demonstrate basic skills and techniques in the operation of each machine.

**ORPR 1135 LOWER LIMB ORTHOTICS**

*Prerequisite: (R) (W), ORPR 1112*

**5 CREDITS** The student will demonstrate competencies in the development and manufacture of foot-orthoses, ankle-foot orthoses, knee-ankle-foot orthoses and orthotic shoe modifications. Various materials and procedures will be used in the design of each project. Additional topics will include strength and properties of various materials to obtain the desired biomechanical effect in each system. The applied mathematics skills needed to produce these devices will be presented.

## ORPR 1154 SPINAL ORTHOTICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 1135*

**4 CREDITS** This course is designed to build upon the knowledge and skills acquired in previous orthotics courses. Applications of plastic, metal and leather will be utilized in the design of various spine supports.

## ORPR 1222 UPPER LIMB ORTHOTICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 1135*

**2 CREDITS** The student will use principles learned in previous courses to design and fabricate upper limb support systems. Metal and plastics will be used in customizing each orthosis. Additional topics will include troubleshooting and repair.

## ORPR 1245 CLINICAL ORTHOTICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 1135, ORPR 1154, ORPR 1222*

**5 CREDITS** The student will participate in a clinical externship in an approved facility offering supervised experiences in the application of learned principles to the fabrication and delivery of orthotic services.

## ORPR 2000 SPECIAL TOPICS

*Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other orthotic or prosthetic courses, but which are beneficial in providing a better understanding of the field. A specific subject will be announced for each offering. Enrollment may be repeated with a change of topic.

## ORPR 2115 TRANSTIBIAL PROSTHETICS

*Prerequisite: (R) (W) APPM 1223, ORPR 1112*

**5 CREDITS** The student will be introduced to fabrication processes involved in transtibial prosthetics. The student will learn about wood, titanium and aluminum components, static and dynamic alignment and the use of instruments to transfer alignment. Classroom learning will be reinforced with laboratory experience. Laminating with epoxy, acrylic and polyester resins along with many different reinforcing materials will be used. Applied mathematical skills needed to mix resins correctly will be taught.

## ORPR 2233 TRANSRADIAL AND TRANSHUMERAL PROSTHETICS

*Prerequisite: (R) (W), ORPR 1112*

**3 CREDITS** This course will introduce the student to transradial and transhumeral prosthetics. Upper limb prosthetics fabrication techniques will be learned. This includes suspension harnesses, cable operating systems, attaching prosthetic elbows, hinges, wrist units and terminal devices. The student will also demonstrate socket duplication methods.

## ORPR 2255 TRANSFEMORAL PROSTHETICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 2115*

**5 CREDITS** The student will build upon the knowledge and skills acquired in previous prosthetics courses. Socket position, knee components and their relationship to prosthetic feet in static alignment are covered. Socket design and fabrication of the flexible inner socket with various reinforcing materials will be the topics of instruction and application.

## ORPR 2313 ADVANCED TRANSTIBIAL PROSTHETICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 2115*

**3 CREDITS** The student will use knowledge and principles learned in previous courses to fabricate a transtibial prosthesis with a roll-on suspension component and distal attachment pin. The student will also attach side joints and a thigh corset to a transtibial socket. The joint and corset exercise utilizes an understanding of material strengths, alignment and careful hinge placement to augment anatomical knee stability and minimize distal residual limb pressure.

## ORPR 2335 CLINICAL PROSTHETICS

*Prerequisite: (R) (W), ORPR 1112, ORPR 2115, ORPR 2233, ORPR 2255, ORPR 2313*

**5 CREDITS** The student will participate in a clinical externship in an approved facility offering supervised clinical experiences in the application of learned principles to the fabrication and delivery of prosthetic services.

# PHILOSOPHY

## PHIL 1000 SPECIAL TOPICS

*Prerequisite: ENGL 1113*

**VARIABLE 1-4 CREDITS** The student will demonstrate competencies in subjects not covered in other philosophy courses. Each course will cover a specific topic and may be repeated with a change in content.

## PHIL 1013 INTRODUCTION TO PHILOSOPHY

*Prerequisite: ENGL 1113*

**3 CREDITS** After a review of the methods and sub-fields of philosophy, students will describe the positions selected philosophers have taken on several basic problems. Students will also describe and defend their own perspectives on these problems.

*General Education Course (humanities)*

## PHIL 1123 CRITICAL THINKING

*Prerequisite: ENGL 1113*

**3 CREDITS** Critical Thinking provides opportunities for students to practice skills in both intellectual and personal development. Throughout the course, students will examine cognitive development, sound inductive argument development, biases and fallacies in decision formation, and problem solving skills. Students will apply these aspects of thought formation and critical thinking skills to writing development, goal setting, social analysis, and problem solving. This course satisfies three credit hours of the General Education humanities requirement for all Associates in Arts, Science, and Diversified Studies degrees.

## PHIL 1213 INTRODUCTION TO ETHICS

*Prerequisite: ENGL 1113*

**3 CREDITS** Students will demonstrate their understanding of the relationship between philosophy and ethics; the language, concepts and traditions of ethics; and selected theories of ethics. The students will then use descriptive, normative and metathetical approaches to analyze selected contemporary ethical issues.

*General Education Course (humanities)*

## PHIL 1603 INTRODUCTION TO LOGIC

*Prerequisite: ENGL 1113*

**3 CREDITS** Students will recognize genuine arguments in natural language, translate them into appropriate form for logical analysis, and use traditional and modern methods to determine their validity. Students also will recognize and refute various informal fallacies.

*General Education Course (humanities)*

## PHIL 2000 SPECIAL TOPICS IN PHILOSOPHY

*Prerequisite: ENGL 1113*

**VARIABLE 1-3 CREDITS** Various sections of this course will treat specific topics not covered in other philosophy courses. Course topics will be chosen to broaden students' understanding of philosophy by addressing philosophical issues that are particularly timely or relevant to societal trends or events. The course may be repeated with a change in content.

## PHIL 2133 COMPARATIVE RELIGIONS

*Prerequisite: ENGL 1113*

**3 CREDITS** This course is a study of the major world religions both ancient and modern. The student will examine and compare historical developments, major historical figures, philosophical tenets and /or belief systems, and sacred texts from various religions. Also, students will evaluate the impact of these elements within a contemporary, global framework. This course satisfies three credit hours of the General Education Humanities requirements for all Associate in Arts, Science, and Diversified Studies degrees.

## PHIL 2153 INTRODUCTION TO EASTERN THOUGHT

*Prerequisite: ENGL 1113*

**3 CREDITS** This survey course is designed to introduce the student to the major religious and philosophic systems of the Asian world. After completing the course, the student will be able to accurately describe and discuss the historical development and major concepts of Hinduism, Buddhism (including Zen), Confucianism, and Taoism.

**PHIL 2223 PHILOSOPHY OF RELIGION***Prerequisite: ENGL 1113*

**3 CREDITS** This course systematically and critically explores various dimensions of religious experience. Course units may treat questions of defining religion, the existence of deities and the human soul, immortality, determinism and free will, and the classical problem of evil.

**PHIL 2343 PHILOSOPHY OF SCIENCE***Prerequisite: ENGL 1113*

**3 CREDITS** This course will examine philosophical principles underlying the theories and methods of Western science. Course units may include discussion of how science has informed our view of reality, the nature and requirements of scientific explanations, and ways in which ethical considerations direct and constrain scientific research.

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**PHYSICAL THERAPIST ASSISTANT**

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**PTA 1000 SPECIAL TOPICS***Prerequisite: (R) (W)*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other physical therapy courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**PTA 1013 INTRODUCTION TO PHYSICAL THERAPY***Prerequisite: BIO 1314; Corequisite: PTA 1023, PTA 1213, and BIO 1414*

**3 CREDITS** The student will describe the development and current status of physical therapy and the role of the PTA in the healthcare system. He/she will be introduced to medical ethics, legislation, and the American Physical Therapy Association and its components. Medical communication and documentation will be discussed and practiced. The student will learn and demonstrate basic range of motion exercises, body mechanics and transfers, basic gait training, and infection control methods. The student will explain the concept of "therapeutic helping."

**PTA 1023 DYNAMIC HUMAN MOTION***Prerequisite: BIO 1314; Corequisite: PTA 1013, PTA 1213, BIO 1414*

**3 CREDITS** The student will be introduced to basic concepts concerning human motion, bony landmarks, muscle location and function, and nerve innervations. The student will learn basic manual muscle testing to assess function and complete an in depth learning module on the use of the goniometer to assess joint motion. The class is divided into five units of instruction: terminology, skeletal and articular system, functional anatomy, goniometry, and manual muscle testing.

**PTA 1112 PATHOLOGY FOR PHYSICAL REHABILITATION***Prerequisite: PTA 1013, PTA 1023, PTA 1213; Corequisite: PTA 1224, PTA 2014, BIO 2102*

**2 CREDITS** The student will identify underlying circumstances and phases of disease and dysfunction, describe primary and secondary disability patterns related to various deficits, gain knowledge of functional activities and techniques to prevent secondary disabilities using special equipment as needed, and identify terms, prefixes, suffixes and abbreviations used in the medical practice.

**PTA 1202 DEVELOPMENT, CONDITIONS AND TREATMENT ACROSS THE LIFESPAN***Prerequisite: PTA 1312; Corequisites: PTA 2024, PTA 2113*

**2 CREDITS** The student will be introduced to basic terminology and the theoretical frameworks that guide the study of the human lifespan. The student will review the physiological function of different body systems, their interrelationships, and how changes occur over the course of a lifetime. The student will correlate these changes with age appropriate motor, cognitive, and social-emotional development across the lifespan, and demonstrate awareness and appropriate therapeutic intervention for specific issues/conditions that impact infants, children, adolescents, adults, and elders.

**PTA 1213 PAIN MANAGEMENT AND MASSAGE***Prerequisite: BIO 1314; Corequisite: PTA 1013, PTA 1023*

**3 CREDITS** The student will apply therapeutic modalities and have knowledge of pain mechanisms to improve a patient's functional independence. The student will be able to safely and competently demonstrate the use of thermal modalities, ultrasound, traction, continuous passive motion devices, dynamic splinting, and massage to treat a patient's conditions. The students will recognize that all treatments provided by a physical therapist assistant are within the plan of care established by the physical therapist and are performed under the general supervision of a physical therapist in the state of Oklahoma. The student will also learn and apply documentation skills for the above modalities. The student must demonstrate proficiency/competency of above modalities with testing, and oral/practical demonstrations.

*Note: This course satisfies the computer proficiency requirement.***PTA 1224 THERAPEUTIC EXERCISE I***Prerequisite: PTA 1013, PTA 1023, PTA 1213; Corequisite PTA 2014, PTA 1112, BIO 2102*

**4 CREDITS** The student will apply biomechanical principles of human motion to progress basic exercise programs to complex exercise programs. The student will understand the purposes, indications, and contraindications for exercise. The student will be able to apply the principles of therapeutic exercise to a wide variety of orthopedic conditions, monitor the effectiveness of the exercise, and progress the patient's exercise program within the plan of care established by the physical therapist.

**PTA 1312 INITIAL PRACTICUM***Prerequisite: The student must have completed the following courses with a "C" or better to participate in the Initial Practicum: PTA 1013, PTA 1023, PTA 1112, PTA 1213, PTA 1224, PTA 2014; BIO 2102*

**2 CREDITS** The student will be assigned to a selected physical therapy practice for a minimum of 160 contact hours. Under the direct, on-site supervision of a licensed physical therapist or physical therapist assistant, the student will assume patient care responsibilities in a safe, efficient, ethical and legal manner.

**PTA 2000 SPECIAL TOPICS***Prerequisite: None*

**VARIABLE 1-4 credits** The student will demonstrate specific competencies in subject areas not covered in other PTA courses that are beneficial in exploring the field more intensely. A specific subject is announced for each offering. Enrollment may be repeated with a change in topic.

**PTA 2014 ELECTROTHERAPY AND MODALITIES***Prerequisite: PTA 1013, PTA 1023, PTA 1213, Corequisites: PTA 1112, PTA 1224; BIO 2102*

**4 CREDITS** The student will learn how to apply therapeutic modalities within a physical therapist's plan of care, and use knowledge of pain perception to help improve a patient's functional independence. The student will gain knowledge of application and usage of the following modalities/treatment techniques: electrical stimulation, wound healing techniques (including dressings, topical agents, debridement techniques, universal precautions), respiratory treatments (including different coughing techniques, breathing exercises, and postural drainage/chest PT), and edema management (including compression therapies). Students will be able to use critical thinking to implement modality usage as per the physical therapist's plan of care, and document patient response and effectiveness of their treatments. The student must demonstrate proficiency/competency in these modalities through testing and oral/practical demonstrations.

**PTA 2024 THERAPEUTIC EXERCISE II***Prerequisite: PTA 1312; Corequisite PTA 1202, PTA 2113*

**4 CREDITS** The student will continue to apply biomechanical principles of human motion to progress functional exercise programs. The student will understand the purposes, indications, and contraindications for exercise. The student will be able to apply the principles of therapeutic exercise to a wide variety of neurological, cardiac, multiple traumas, and various debilitating conditions, and monitor the effectiveness of the exercise. The student will recognize the role of the PTA and will progress the patient's exercise program within the plan of care established by the physical therapist.

## PTA 2034 PRACTICUM I

*Prerequisite: The student must have completed the following courses with a "C" or better to participate in the Practicum I: PTA 1312, PTA 1202, PTA 2024, PTA 2113.*

**4 CREDITS** The student will function in the clinic as a health care team member, under the direct supervision of a physical therapist or physical therapist assistant, carrying out select portions of the physical therapist's plan of care. The student will establish helping relationships; practice effective interpersonal communications; apply ethical and legal principles, identify and provide for normal and threatened basic needs of patients; practice effective infection control techniques; administer selected modalities to prevent secondary disabilities and manage pain; correctly apply principles of biomechanics and physiology in administering exercise, transfer, and gait training. The student will clearly report and document significant observations and treatments orally and in writing.

## PTA 2113 PTA SYSTEMS/PROBLEMS

*Prerequisite: PTA 1312; Corequisite: PTA 1202, PTA 2024*

**3 CREDITS** This course is designed to provide the student the opportunity to explore and further understand systems and challenges that impact the Physical Therapist Assistant. The course explores the role of the Physical Therapist Assistant and how s(he) functions as a member of the health care team; systems and operational issues that affect the practice of a Physical Therapist Assistant; and challenges that the Physical Therapist Assistant and all health care professionals face in day to day clinical practice.

*Note: This course satisfies the computer proficiency requirement.*

## PTA 2134 PRACTICUM II

*Prerequisite: PTA 2034*

**4 CREDITS** The student will continue to function in the clinic as a health care team member, under the direct supervision of a physical therapist or physical therapist assistant, carrying out select portions of the physical therapist's plan of care. The student will demonstrate competence in all areas described in PTA 2034. The student is expected to function at the level of an entry level physical therapist assistant at the completion of this course.

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## PHYSICS

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### PHYS 1011 PHYSICAL SCIENCE LABORATORY

*Prerequisite: Any PHYS, CHEM, GEOL or ASTR non-laboratory course*

**1 CREDIT** This course is designed for students needing laboratory experience to complete their General Education physical sciences requirements. It is not open to science majors or those who have completed a laboratory-based physical science course. Students will measure, record and analyze data; draw relevant conclusions; and make appropriate recommendations about experiments in physics, chemistry, and the earth sciences.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

### PHYS 1013 PHYSICAL SCIENCE

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will develop an appreciation for concepts, methods, and applications of the natural sciences in their everyday lives. Students will be able to demonstrate their familiarity with some of the basic principles of chemistry, physics, geology, astronomy, and other physical sciences by (1) indicating how disciplines can work together in the solution of common problems and (2) utilizing physical science methods in their daily lives, describing physical phenomena and predicting the results of common occurrences.

*GenEd Requirement*

### PHYS 1014 PHYSICAL SCIENCE

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** Students will develop an appreciation for concepts, methods, and applications of the natural sciences in their everyday lives. Students will be able to demonstrate their familiarity with some of the basic principles of chemistry, physics, geology, astronomy, and other physical sciences by (1) indicating how

disciplines can work together in the solution of common problems (2) utilizing physical science methods in their daily lives, describing physical phenomena and predicting the results of common occurrences, and (3) demonstrating the ability to utilize scientific methodologies in a laboratory setting.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

### PHYS 1034 GENERAL GEOLOGY

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** Students will describe theories of the earth's formation, its composition and structure and the processes which change the earth's surface. Laboratory work and field trips are integral parts of the course.

*GenEd Requirement*

### PHYS 1063 EARTH SCIENCE

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**3 CREDITS** Students will demonstrate their understanding of an overview of the earth sciences. The student will study the areas of astronomy, meteorology, climatology and oceanography, with the major concentration on the study of geologic principles.

*GenEd Requirement*

### PHYS 1064 EARTH SCIENCE

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** Students will demonstrate their understanding of an overview of the earth sciences. The student will study the areas of astronomy, meteorology, climatology and oceanography, with the major concentration on the study of geologic principles. Laboratory work is an integral part of the course.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

### PHYS 1114 COLLEGE PHYSICS I

*Prerequisite: (R) (W), MATH 1513 or higher or APPM 1223, within the last two years or by evaluation. §*

**4 CREDITS** Students will demonstrate their understanding of useful concepts of kinematics and dynamics, energy and momentum, waves and sound, fluids and thermodynamics by (1) developing numerical and graphical descriptions of physical phenomena, (2) numerically predicting the results of physical occurrences, and (3) applying laboratory skills to analyze real situations. Numerical computations will utilize algebra and basic trigonometry where appropriate.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

### PHYS 1214 COLLEGE PHYSICS II

*Prerequisite: (R) (W) PHYS 1114*

**4 CREDITS** This course is a continuation of College Physics I. Students will demonstrate their understanding of concepts of electricity and magnetism, optics, relativity, and atomic and nuclear physics by (1) developing numerical and graphical descriptions of physical phenomena, (2) numerically predicting the results of physical occurrences, and (3) applying laboratory skills to analyze real situations. Numerical computations will utilize algebra and basic trigonometry where appropriate.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

### PHYS 1314 TECHNICAL PHYSICS

*Prerequisite: (R) (W), Algebra II in High School or MATH 0403 or adequate math placement test score or APPM 1223 or the appropriate technical math course.*

**4 CREDITS** This is a physics course designed primarily for technical career programs. Students will apply the concepts and techniques of physics to solve technical problems in the area of mechanics, fluids, heat, electricity and magnetism. Laboratory analysis is an integral part of the course.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

**PHYS 1504 GENERAL ASTRONOMY**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** This course will fulfill the General Education requirement for Physical Science (without laboratory). The student will be introduced to modern astronomy. Concepts to be studied include the solar system, the sun and stars, galaxies, including the Milky Way Galaxy, and current theories of the origin, evolution, and fate of the universe.

*GenEd Requirement*

**PHYS 1514 GENERAL ASTRONOMY WITH LAB**

*Prerequisite: (R) (W) Math 0203 or adequate math placement test score.*

**4 CREDITS** This course will fulfill the general education requirement for Physical Science (with laboratory). The student will be introduced to modern astronomy. Concepts to be studied include the solar system, the sun and stars, galaxies (including the Milky Way Galaxy), and current theories of the origin, evolution, and fate of the universe. Laboratory exercises will explore basic physical principles related to Astronomy as well as activities with specific astronomical applications.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

**PHYS 2014 ENGINEERING PHYSICS I**

*Prerequisite: (R) (W), MATH 2104 (or at least 4 hours of calculus) within the last year or by evaluation. Prerequisite or Corequisite: MATH 2214. §*

**4 CREDITS** This is a physics course designed primarily for pre-engineering, chemistry and physics majors. Students will demonstrate their understanding of concepts in mechanics, heat and sound by (1) developing qualitative and quantitative descriptions of physical phenomena, and (2) predicting the results of physical occurrences based on physics theory and laboratory experiments. Quantitative descriptions and predictions will incorporate methods of calculus where appropriate.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

**PHYS 2114 ENGINEERING PHYSICS II**

*Prerequisite: (R) (W), PHYS 2014 and MATH 2214 (or at least 8 hours of calculus) within the last year or by evaluation. §*

*Prerequisite or Corequisite: MATH 2314*

**4 CREDITS** This course is a continuation of Engineering Physics I. Students will demonstrate their understanding of concepts in electricity, magnetism, and light by (1) developing qualitative and quantitative descriptions of physical phenomena, and (2) predicting the results of physical occurrences based on physics theory and laboratory experiments. Quantitative descriptions and predictions will incorporate methods of calculus where appropriate.

*† As part of the coursework you may have the potential of being, to some degree, exposed to hazardous material. If you are pregnant, wear contact lenses or have other specific health concerns, you should consult your personal physician for advisement concerning your enrollment in the course.*

*GenEd Requirement*

**PHYS 2223 MODERN PHYSICS FOR ENGINEERS**

*Prerequisite: PHYS 2114; Prerequisite or Corequisite: MATH 2413*

**3 CREDITS** Students will demonstrate understanding of essential concepts in 20th century physics. Topics investigated include relativity, quantization, atomic models, quantum mechanics, atomic physics, statistical mechanics, and the current standard model of particle physics. Students solve problems using mathematical methods including ordinary differential equations.

**POLITICAL SCIENCE****POLSC 1000 SPECIAL TOPICS IN POLITICAL SCIENCE**

*Prerequisite: (R)*

**1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other Political Science courses. Each course will relate to a specific issue and may be repeated with a change in topic.

*General Education Course*

**POLSC 1113 AMERICAN FEDERAL GOVERNMENT**

*Prerequisite: (R) (W)*

**3 CREDITS** A study of the principles, structure, processes and functions of the United States federal government.

*GenEd Requirement*

**POLSC 2000 SPECIAL TOPICS IN POLITICAL SCIENCE**

*Prerequisite: POLSC 1113*

**1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other POLSC courses. The course may relate to a specific issue, topic, or area of study within the field of political science. The course may be repeated with a change in content.

**POLSC 2103 INTRODUCTION TO PUBLIC ADMINISTRATION**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** After surveying the field of public administration, the student will be able to (1) organize a workable administrative hierarchy, (2) construct a hypothetical governmental budget, (3) identify and describe the processes and problems in intergovernmental relations, (4) describe administrative law and procedure, (5) describe personnel policies, and (6) compare various public administrations.

*General Education Course*

**POLSC 2113 INTRODUCTION TO STATE AND LOCAL GOVERNMENT**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** After studying the political processes in lower level governmental units, the student will be able to identify and describe processes and problems such as intergovernmental relations, fiscal and administrative systems, special urban problems, and legal systems in these governmental units.

*General Education Course*

**POLSC 2213 CONTEMPORARY ISSUES IN AMERICAN POLITICS**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** This course is a study of significant contemporary political issues emphasizing events occurring at the time the course is offered. After surveying the field of American politics, the student will be able to: 1) critically evaluate some of the controversial issues which presently confront the U.S. and the global community; 2) facilitate intellectual discourse; 3) participate in civil debates; 4) identify a potential problem with a specific public policy and propose a solution to ameliorate it; and 5) construct a research paper and literature review reflecting the critical analysis skills that have been learned throughout the course.

**POLSC 2223 INTRODUCTION TO LAW**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** The student will be introduced to legal subjects such as Criminal Law and Procedure, Civil Law and Procedure, Torts, Contracts, Sources of American Law, the Judicial System and the Courts, and Judicial Decision Making and Remedies. The student will learn legal research techniques and apply them in a moot court oral exercise, will learn about legal resources available through the Internet, and will make an observation of an actual case in a court of law. This course heavily relies upon graded, class participation by students.

*General Education Course*

**POLSC 2303 INTRODUCTION TO INTERNATIONAL RELATIONS**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** An analysis of the structure of international relations and sources of international influence, conflict, and cooperation.

*General Education Course*

**POLSC 2603 INTRODUCTION TO COMPARATIVE POLITICS**

*Prerequisite: (R) (W) POLSC 1113*

**3 CREDITS** The student will utilize basic theories and methods of comparative analysis in studying selected nation-states. The student will also examine current world-wide political issues and problems. Topics for analysis will include political development, culture, elites, parties and political change.

*General Education Course*

## **POLSC 2613 SCOPE AND METHODS OF POLITICAL SCIENCE**

*Prerequisite: (R) (W) POLSC 1113 and MUST HAVE COMPLETED AT LEAST 6 HOURS OF POLITICAL SCIENCE ELECTIVES (e.g. 2003, 2103, 2113, 2213, 2223, 2303, 2603).*

**3 CREDITS** This course examines the broad scope of political science from its earliest philosophic origins to its development as a contemporary social science. Various sub-fields of political science are analyzed including political theory, public administration, political behavior, comparative government, international relations, American government, methodology, and public policy.

*General Education Course*

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## **PRESIDENT'S LEADERSHIP CLASS**

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### **PLC 2122 PRESIDENT'S LEADERSHIP CLASS**

*Prerequisite: (W), Math 0403 or adequate math placement test score, ENGL 1113 & 12 hours of 1000 level or above completed with a 3.0 grade point average.*

**2 CREDITS** The President's Leadership Class (PLC) is designed to develop and enhance leadership skills and knowledge. The course will explore the personal, interpersonal, organizational, and social dimensions in the greater context of leadership. The goal of the course is to develop self-aware, ethical, and principle-centered future leaders with the ability to think critically, apply a proven process for decision-making, and communicate effectively.

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## **PSYCHOLOGY**

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### **PSY 1000 SPECIAL TOPICS IN PSYCHOLOGY**

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other psychology courses. Each course will relate to a specific issue and may be repeated with a change in topic.

### **PSY 1103 HUMAN RELATIONS**

*Prerequisite: (R) (W)*

**3 CREDITS** After exploring specific behavior skills and communication patterns used in the establishment and maintenance of relationships, the student will be able to describe the process of human relating with emphasis on promoting positive results. Several types of relationships will be considered: friendships, family, marriage and work.

### **PSY 1113 INTRODUCTION TO PSYCHOLOGY**

*Prerequisite: (R)*

**3 CREDITS** A survey of the major areas of study in psychology such as motivation, learning, physiology, personality, social psychology, abnormal behavior, perception, memory, cognition/thought, and treatment.

*General Education Course*

### **PSY 1123 STRESS MANAGEMENT**

*Prerequisite: (R) (W)*

**3 CREDITS** The student will apply psychological and physiological information to develop a plan for living with stress. A personal profile of stress will be developed and techniques for preventing tension, relaxing the mind and body, and improving self-esteem will be explored.

### **PSY 1143 CHEMICAL DEPENDENCY**

*Prerequisite: (R)*

**3 CREDITS** Introduction to Chemical Dependency is designed to introduce the dynamics of chemical dependency and the aspects of drug and alcohol dependence and addiction. Family dynamics will be discussed as well as the impact of dysfunctional or imbalanced family systems on individuals and their chemical use. The purpose of this course is to provide basic theoretical concepts and research in the field of chemical dependency.

### **PSY 1153 PSYCHOLOGY OF AGING**

*Prerequisite: (R)*

**3 CREDITS** The student will use a life-span perspective to describe development in late life, including psychological traits, interpersonal relationships, social roles, and psychological crises of late life.

### **PSY 1503 PSYCHOLOGY OF WOMEN**

*Prerequisite: (R)*

**3 CREDITS** The student will discuss issues, theories and research related to female development and the factors influencing that development from social science, historical, and biographical perspectives.

### **PSY 2000 SPECIAL TOPICS IN PSYCHOLOGY**

*Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other psychology courses. Each course will relate to a specific issue and may be repeated with a change in topic.

### **PSY 2113 INTRODUCTION TO CHILD DEVELOPMENT**

*Prerequisite: (R) (W)*

**3 CREDITS** This course will identify patterns of the physical, intellectual and emotional/psycho-social development of children. The course will recognize the major theories of human development as they apply to children.

*General Education Course*

### **PSY 2123 BEHAVIORAL STATISTICS**

*Prerequisite: PSY 1113 and MATH 0403 or adequate math placement test score.*

**3 CREDITS** Behavioral Statistics provides an introduction to descriptive and inferential, parametric and non-parametric statistical techniques used in behavioral research including measures of central tendency, variability, correlation, regression analysis, hypothesis testing, t-tests, Chi square, and ANOVA. Students finishing this course will be able to use computers for statistical analyses and will be prepared for advanced laboratory classes.

*General Education Course*

### **PSY 2163 DEATH, DYING, AND GRIEF**

*Prerequisite: (R) (W)*

**3 CREDITS** Students will demonstrate an understanding of death, dying, and grief from three perspectives: The medical and legal perspective in American society; the human perspective, including how people die, caregiving, suicide, and funeral rituals; and the perspective of death related to other losses, including grief and coping strategies.

### **PSY 2193 PERSONALITY THEORIES**

*Prerequisite: (R) (W), PSY 1113*

**3 CREDITS** This course examines personality processes and the various theoretical approaches to the study of personality such as psychodynamic, behavioral, phenomenological, trait, and social learning theories.

*General Education Course*

### **PSY 2213 CHILD AND FAMILY IN SOCIETY**

*Prerequisite: (R) (W)*

**3 CREDITS** This course emphasizes promoting optimum development and support of families and children within various settings and the larger community.

*General Education Course*

### **PSY 2233 ETHICS IN HEALTH AND HUMAN SERVICES**

*Prerequisite: (R) (W)*

**3 CREDITS** Students will contrast ethical systems with religion, law, and justice; define ethical principles, and discuss ethical issues and professional conduct in health and human services. Students will apply ethical principles and decision-making models to analyze case studies.



**PSY 2403 DEVELOPMENTAL PSYCHOLOGY***Prerequisite: (R) (W), PSY 1113*

**3 CREDITS** A theoretical and research-based course that covers social, emotional, physical and cognitive aspects of human development throughout the life-span.

*General Education Course***PSY 2503 HUMAN SEXUALITY***Prerequisite: PSY 1113, (R), (W)*

**3 CREDITS** This course is an introductory overview of the field of human sexuality. It will explore the psychological, physiological, and sociocultural aspects of human sexual behavior. Emphasis will be placed on the cultural and biological diversity of sexual expression.

**PSY 2743 SOCIAL PSYCHOLOGY***Prerequisite: (R) (W), PSY 1113*

**3 CREDITS** This course will cover topics such as conformity, social influence, social cognition, prosocial behavior, prejudice, group processes, interpersonal attraction and social comparison.

*General Education Course*

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**RESPIRATORY CARE THERAPIST**

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**RC 1000 RESPIRATORY CARE SPECIAL TOPICS***Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other Respiratory Care courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**RC 1021 MEDICAL ETHICS***Prerequisite: (R), Admission to Respiratory Therapy Program*

**1 CREDIT** This course covers information necessary to understand the legal and ethical standards of practice of respiratory care. Students will study ethics, professionalism and stress management. Also covered will be information related to professional credentialing and licensure as well as a basic introduction to the principles of managed care.

**RC 1033 RESPIRATORY CARE SCIENCES***Prerequisite: (R) (W) Math 1513 or APPM 1223*

**3 CREDITS** This course is intended to teach the principles of physics, chemistry and microbiology necessary for the understanding and application of respiratory care. Topics include temperature scales and conversion; the nature and behavior of gases; the gas laws; diffusion; solubility and flow of gases and liquids; basic principles of fluid dynamics; basic atomic structure; formation of ions; valence calculation; theory of pH and acid-base balance; classification and identification of micro-organisms; microbial growth and transmission; common infectious respiratory diseases.

**RC 1041 INTRODUCTION TO CLINICAL APPLICATION***Prerequisite: (R) Corequisite: RC 1114, RC 1021*

**1 CREDIT** This course is an introduction to the hospital environment. Students will be oriented to basic hospital operations in a respiratory care department and observe delivery of respiratory care. Students will also perform basic respiratory procedures and learn to read charts.

**RC 1114 RESPIRATORY THERAPY PROCEDURES I AND LAB***Prerequisite: (R) (W) Math 1513 or APPM 1223 Corequisite: RC 1033; BIO 1314 or BIO 1224; MATH 1513 or MATH 1223*

**4 CREDITS** This is the beginning theory and application course in the study of respiratory care. It is designed to cover the theory and application of basic to intermediate skills. Included in this course are laboratory demonstrations, student practice, peer evaluation and return student demonstration for evaluation. Students will demonstrate minimal proficiency in the laboratory setting on all

required procedural skills. Topics include: safety, infection control, basic and advanced patient assessment, data management, communication skills regulators, flow meters, gas blenders, sustained maximal inspiration, breathing exercises, gas therapy administration, chest physical therapy, humidity and aerosol therapy, oxygen analysis, pulse oximetry, blood sampling, blood gas analysis, equipment cleaning, manual resuscitators and electrocardiographs.

**RC 1124 RESPIRATORY THERAPY PROCEDURES II AND LAB***Prerequisite: RC 1041; RC 1114*

**4 CREDITS** This is the second theory and application course of respiratory care equipment and procedures. It is designed to build upon the knowledge and skills acquired in Respiratory Therapy Procedures I. Students are introduced to additional intermediate and advanced respiratory care topics. Included in this course are laboratory demonstrations, student practice, peer evaluation and return student demonstration for evaluation. Students will demonstrate minimal proficiency in the laboratory setting on all required procedural skills. The following topics are covered: Intermittent positive pressure ventilation, bi-level positive pressure ventilation, artificial airways and airway management, bedside ventilatory assessment, suctioning, classification of ventilators, physiologic effects of ventilation and basic ventilator management. The course includes in-depth study of the currently used mechanical ventilators.

**RC 1142 RESPIRATORY PHARMACOLOGY***Prerequisite: RC 1312; Corequisite: MATH 1513 or APPM 1223*

**2 CREDITS** This course is designed to study medications used in the treatment of respiratory disorders. General drug groups, including their physiologic actions, uses and hazards, are covered. Dosages, contraindications, precautions, duration and mode of action, elimination, indications for use, potential side effects, and adverse effects are also discussed for the most commonly used respiratory therapy and related drugs in each group.

**RC 1223 PEDIATRIC AND NEONATAL RESPIRATORY CARE***Prerequisite: (R) (W), RC 1124; RC 1142; RC 1244; RC 1312; RC 1253*

**3 CREDITS** This course is designed to cover the various aspects of respiratory care which are unique to the neonatal and/or pediatric patient. The course covers development of the fetus, evaluation and stabilization of high-risk newborns, pediatric respiratory therapeutics, pediatric and neonatal resuscitation, the study of pediatric diseases with respiratory implications and appropriate therapeutic interventions. Mechanical ventilation of the newborn, nitric oxide administration, high frequency ventilation and transcutaneous monitoring are also covered. Included in this course are laboratory demonstrations, student practice, peer evaluation and return student demonstration for evaluation. Students will demonstrate minimal proficiency in the laboratory setting on all required procedural skills.

**RC 1244 CLINICAL APPLICATION OF BASIC RESPIRATORY THERAPEUTICS***Prerequisite: (R), RC 1041, RC 1114*

**4 CREDITS** This course is the actual clinical application of basic respiratory procedures which are taught in the Respiratory Therapy Procedures I course. The student observes and then performs in the clinical affiliate hospitals those skills and procedures which have been satisfactorily performed in the laboratory setting. The student is required to perform a minimal number of specified procedures and prove proficiency in basic skills. The student is also evaluated on initiative, organization, and affective behavior.

**RC 1253 CLINICAL APPLICATION OF ADVANCED RESPIRATORY THERAPEUTICS***Prerequisite: (R) (W), RC 1124, RC 1244*

**3 CREDITS** This course is the actual clinical application of advanced respiratory procedures which are taught in the Respiratory Therapy Procedures II course. The student observes and then performs in the clinical affiliate hospitals those skills and procedures which have been satisfactorily performed in the laboratory setting. The student is required to perform a minimal number of specified procedures and prove proficiency in basic skills. The student is also evaluated on initiative, organization, and affective behavior.

## **RC 1312      CARDIOPULMONARY ANATOMY, PHYSIOLOGY AND PATHOLOGY**

*Prerequisite: None*

**2 CREDITS** This course is designed as an in-depth study of the anatomy, physiology, and pathology of the cardiopulmonary system. The pathology portion of the course provides study of the etiology, pathophysiology, signs and symptoms, and treatment for specific cardiopulmonary diseases.

## **RC 1320      RESPIRATORY CARE TRANSITION**

*Prerequisite: (R) (W) Must hold CRT credential, current RCP license or be a current second year respiratory care student.*

**VARIABLE 1-4 CREDITS** This is an elective course designed to assist the Certified Respiratory Care Technician who has been out of school for an extended period of time, or practicing in a specialty area in making the transition into the Respiratory Care Therapist program. This course may also be used as a remediation course for Respiratory Care Therapist students with significant areas of weakness identified during assessment testing or clinical practice. This course is designed to utilize comprehensive assessment of an individual's current knowledge and skills to develop an individual plan of study for remediation. The student will be provided with a specific plan of objectives and skills to be mastered during the course and the necessary curriculum units.

## **RC 2124      CRITICAL CARE RESPIRATORY THERAPY**

*Prerequisite: (R) (W) RC 1124, RC 1142, RC 1253, RC 1312*

**4 CREDITS** This course introduces topics related to the delivery of respiratory care and patient management in the critical care setting. The student will master advance patient monitoring modalities as well as the more complex ventilation modes. The primary topic is overall evaluation and management of the critically ill patient with use of patient care plans and respiratory care protocols. Included in this course are laboratory demonstrations, student practice, peer evaluation and return student demonstration for evaluation. Students will demonstrate minimal proficiency in the laboratory setting on all required procedural skills. Topics include: developing care plans, cardiovascular monitoring and management, fluid and electrolyte monitoring, pleural drainage, x-ray assessment, advanced ventilatory modes and respiratory emergencies.

## **RC 2212      PULMONARY FUNCTION TESTING AND BRONCHOSCOPY**

*Prerequisite: (R) (W) RC 1124, RC 1253, RC 1312*

**2 CREDITS** This course is designed for the student to develop knowledge of the advanced diagnostic procedures necessary to perform comprehensive pulmonary function testing in the clinical setting. This includes performance and interpretation of spirometry, lung volumes, diffusion and assisting the physician with performance of bronchoscopy. The student will demonstrate an understanding of these procedures through hands-on lab experiments. The student will also develop a basic understating of the concepts of cardiac and exercise testing as well as a brief overview of polysomnography. The student will be able to relate these testing procedures to the diagnosis of cardiopulmonary disease.

## **RC 2312      CLINICAL EXPERIENCE I**

*Prerequisite: (R) (W) RC 2212*

**2 CREDITS** The course is the direct clinical application of pulmonary function testing and bronchoscopy assistance taught in RC 2212. Students will attend 8-hour clinical rotations in the hospital pulmonary function laboratory observing and performing comprehensive patient testing. This course will also include additional adult intensive care rotations to promote continued practice and mastery of basic ventilator management skills.

## **RC 2412      CLINICAL EXPERIENCE II**

*Prerequisite: (R) (W) RC 2124, RC 1223*

**2 CREDITS** This course provides clinical application in the hospital setting to the topics covered in Critical Care Respiratory Therapy and Pediatric/Neonatal Respiratory Care courses. Students are scheduled for rotations through adult, pediatric and neonatal intensive care units. Students will attend scheduled eight-hour rotations at specific hospital sites in order to complete assigned behavioral and didactic objectives.

## **RC 2512      RESPIRATORY THERAPY SEMINAR**

*Prerequisite: RC 1124, RC 1244, RC 1142, RC 1312, RC 1253*

**2 CREDITS** This course includes topics related to management and specialty areas in the field of respiratory care. Students will develop an understanding of smoking cessation, home care and discharge planning, quality assurance, hospital department management, patient education and pulmonary rehabilitation.

## **RC 2613      ADVANCED RESPIRATORY CARE/PATIENT MANAGEMENT**

*Prerequisite: (R) (W), RC 1223, RC 2124, RC 2213*

**3 CREDITS** This didactic course is designed to advance and refine assessment and critical thinking skills as related to respiratory patient care management. Students will focus on concepts related to total patient management related to specific disease processes. The skills of data collection, evaluation and assessment and clinical interventions will be stressed to emphasize functioning at an analysis cognitive level. Activities will be development of advanced patient care plans and respiratory care procedural protocols, participation in simulated case studies and laboratory simulations. Students will also participate in computer and paper-pencil simulations of the current credentialing examinations.

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## **RUSSIAN**

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### **RUSS 1000      SPECIAL TOPICS**

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate competencies in specialized Russian language courses, such as Conversational or Traveller's Russian. Course may be repeated with a change in subject matter.

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## **SCIENCE**

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### **SCI 1000      SPECIAL TOPICS**

*Prerequisite: None*

**VARIABLE 1-4 CREDITS** The student will demonstrate specified competencies in subjects not included in other science courses, but which benefit those seeking additional training or enrichment in the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

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## **SOCIOLOGY**

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### **SOC 1000      SPECIAL TOPICS IN SOCIOLOGY**

*Prerequisite: (R)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other sociology courses. Each course will relate to a specific issue and may be repeated with a change in topic.

### **SOC 1113      INTRODUCTION TO SOCIOLOGY**

*Prerequisite: (R)*

**3 CREDITS** The student will identify the sociological dimensions of human behavior by analyzing the concepts of society, culture, socialization, institution, social stratification and social change.

*General Education Course*

### **SOC 1143      CHEMICAL DEPENDENCY**

*Prerequisite: (R) (W)*

**3 CREDITS** Introduction to Chemical Dependency is designed to introduce the dynamics of chemical dependency and the aspects of drug and alcohol dependence and addiction. Family dynamics will be discussed as well as the impact of dysfunctional or imbalanced family systems on individuals and their chemical use. The purpose of this course is to provide basic theoretical concepts and research in the field of chemical dependency.

**SOC 1203 INTRODUCTION TO THE CRIMINAL PROCESS***Prerequisite: (R)*

**3 CREDITS** This course includes a comprehensive and multidisciplinary view of the operational components in the criminal justice system, focusing on the social and political forces which influence the setting of criminal justice policy. The student will analyze the system at the macro level to show the interdependence in actions of law enforcement, adjudication and correction, and at the micro level to determine how exchange relationships between individuals and groups act as keys to the determination of system outcomes.

*General Education Course***SOC 2000 SPECIAL TOPICS IN SOCIOLOGY***Prerequisite: SOC 1113 or by evaluation. §*

**1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other SOC courses. The course may relate to a specific issue, topic, or area of study within the field of sociology. The course may be repeated with a change in content.

**SOC 2013 MARRIAGE AND FAMILY RELATIONSHIPS***Prerequisite: (R) (W)*

**3 CREDITS** The student will identify the sociological and psychological approaches to problem-solving techniques in marriage and family relations.

*General Education Course***SOC 2023 SOCIAL PROBLEMS***Prerequisite: (R) (W), SOC 1113*

**3 CREDITS** The student will use the sociological perspective to analyze and show the interrelationships among biological, psychological and social aspects of human problems.

*General Education Course***SOC 2063 CRIME AND DELINQUENCY***Prerequisite: (R) (W)*

**3 CREDITS** Using historical and contemporary theory, the student will identify the sociological and psychological dimensions involved in the control and treatment of crime and delinquency.

*General Education Course***SOC 2123 SOCIOLOGY OF AGING***Prerequisite: (R)*

**3 CREDITS** The student will use information from a survey of social processes, theories of aging, and problems affecting the elderly to assess the status of the aged and analyze the impact of demographic trends.

**SOC 2143 MINORITIES, ETHNICITY AND CULTURAL DIVERSITY***Prerequisite: (R) (W)*

**3 CREDITS** This course serves as a sociology major elective, a possible support elective for other programs and a source for expanding understanding of social diversity for interested students. Following a historical perspective on cultural diversity, the course will explore the characteristics of minorities and ethnicity, dysfunctions of racism, and features of the U.S. as a multicultural society.

*General Education Course***SOC 2163 DEATH, DYING, AND GRIEF***Prerequisite: (R) (W)*

**3 CREDITS** Students will demonstrate and understanding of death, dying, and grief from three perspectives: The medical and legal perspective in American society; the human perspective, including how people die, caregiving, suicide, and funeral rituals; and the perspective of death related to other losses, including grief and coping strategies.

**SOC 2173 SOCIOLOGY OF RELIGION***Prerequisite: (R) (W)*

**3 CREDITS** This course will examine religion from the three sociological perspectives (structural-functionalism, conflict theory, and symbolic interactionism), including the study of practices, social structures, historical backgrounds, development, universal themes, and the roles of religion in society. It will examine the functions religion serves in societies, the distinction between magic and religion, and the relationship between religion and other major social institutions such as the economy and politics.

**SOC 2213 CULTURAL ANTHROPOLOGY***Prerequisite: (R) (W)*

**3 CREDITS** Using learned principles of anthropology, the student will identify those aspects of human culture which are universal and which act as an integrative element in human social behavior.

*General Education Course***SOC 2243 ETHICS IN HEALTH AND HUMAN SERVICES***Prerequisite: (R) (W)*

**3 CREDITS** Students will contrast ethical systems with religion, law and justice; define ethical principles, and discuss ethical issues and professional conduct in health and human services. Students will apply ethical principles and decision-making models to analyze case studies.

**SOC 2313 INTRODUCTION TO SOCIAL WORK***Prerequisite: (R) (W), SOC 1113*

**3 CREDITS** This course will introduce students to the profession of social work, including the historical background of the profession, the purposes of social work, the values and ethics of social work and the scope and methods used in social work.

**SOC 2913 SOCIAL STRATIFICATION***Prerequisite: SOC 1113, (R), (W)*

**3 CREDITS** This course is a study of social inequality and its causes and consequences for individuals and society. Emphasis is on the class structure of the United States. Topics include upper, middle, and working classes, poverty and gender and racial/ethnic stratification.

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**SPANISH**

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**SPAN 1000 SPECIAL TOPICS IN SPANISH***Prerequisite: (R) (W) or by evaluation. §*

**VARIABLE 1-6 CREDITS** The student will demonstrate competencies not covered in other Spanish language courses at the 1000-level. Each course will concentrate on a particular aspect of language and culture. The course may be repeated with a change in subject matter.

**SPAN 1010 CONVERSATIONAL SPANISH I***Prerequisite: (R) (W)*

**VARIABLE 1-4 CREDITS** The beginning student will develop oral communication skills through intensive practice in Spanish with a focus on listening and speaking activities. The student will be able to function in Spanish on topics of everyday life. This class is taught completely in Spanish. Credit is variable and, with different content, may be repeated for up to 4 credits.

*General Education Course***SPAN 1115 ELEMENTARY SPANISH I***Prerequisite: (R) (W)*

**5 CREDITS** The beginning student will acquire fundamental proficiency in understanding, speaking, reading, and writing Spanish. The student will also explore important aspects of Spanish and Latin American culture.

*General Education Course*

## SPAN 1120 CONVERSATIONAL SPANISH II

*Prerequisite: (R), SPAN 1010 or 1115 or by evaluation. §*

**VARIABLE 1-4 CREDITS** A continuation of SPAN 1010. The student will further develop oral communication skills through intensive practice in Spanish with a focus on listening and speaking activities. The student will be able to function in Spanish in a variety of situations. This class is taught completely in Spanish. Satisfactory completion of at least three credit hours of Conversational Spanish II confirms that a student has demonstrated competency in a foreign language at the novice-high level according to the ACTFL scale. Credit is variable and, with different content, may be repeated for up to 4 credits.

*General Education Course*

## SPAN 1150 SPANISH IMMERSION I

*Prerequisite: (R), SPAN 1010 or 1115 or by evaluation. §*

**VARIABLE 1-3 CREDITS** The Spanish Immersion course provides an intensive language-learning experience for the student who has some background in Spanish. Following an orientation meeting on campus, students spend a period of time (minimum of two days) at an off-campus location hearing and speaking only Spanish. In addition to attending formal classes focusing on selected topics of vocabulary and grammar, students participate in activities such as dancing, games, aerobics, films, nature walks, and shopping in Spanish, enabling them to experience a total immersion.

## SPAN 1160 INTERNATIONAL STUDY I

*Prerequisite: (R), SPAN 1010 or 1115 or by evaluation. §*

**VARIABLE 3-6 CREDITS** International Study I provides an intensive language and culture experience for the student who has some background in Spanish. Following orientation meetings on campus, students spend a period of time (minimum 9 days) in a Spanish-speaking country. Students will improve listening and speaking skills while developing cultural competence as they experience firsthand the culture of a part of the Hispanic world.

## SPAN 1225 ELEMENTARY SPANISH II

*Prerequisite: SPAN 1115 or by evaluation. §*

**5 CREDITS** A continuation of SPAN 1115. The student will demonstrate increased proficiency in understanding, speaking, reading, and writing Spanish. The student will continue to explore significant aspects of Spanish and Latin American culture. Satisfactory completion of this course confirms that a student has demonstrated competency in a foreign language at the novice-high level according to the ACTFL scale.

*General Education Course*

## SPAN 2000 SPECIAL TOPICS IN SPANISH

*Prerequisite: (R), Two semesters of 1000-level SPAN courses or by evaluation. §*

**VARIABLE 1-6 CREDITS** The student will demonstrate competencies not covered in other Spanish language courses at the 2000-level. Each course will concentrate on a particular aspect of language and culture. The course may be repeated with a change in subject matter.

## SPAN 2010 CONVERSATIONAL SPANISH III

*Prerequisite: (R), SPAN 1120 or 1225 or by evaluation. §*

**3 CREDITS** The student will actively participate in conversations on a variety of topics, including vocabulary specific for fields of study or careers. Listening and speaking will be emphasized, but reading and writing will be incorporated to enable the student to function at the intermediate level of proficiency or above, according to the ACTFL scale. This course is taught completely in Spanish. Credit is variable and, with different content, may be repeated for up to four (4) credits.

*General Education Course*

## SPAN 2050 SPANISH IMMERSION II

*Prerequisite: (R), SPAN 1120 or 1225 or by evaluation. §*

**VARIABLE 1-3 CREDITS** The Spanish Immersion Course provides an intensive language-learning experience for the student who has a minimum of two semesters (or equivalent) of Spanish. Following an orientation meeting on campus, students spend a period of time (minimum of two days) at an off-campus location hearing and speaking only Spanish. In addition to attending formal classes focusing on selected topics of vocabulary and grammar, students participate in activities such as dancing, games, aerobics, films, nature walks, and shopping in

Spanish, enabling them to experience a total immersion. Students will demonstrate an intermediate level of oral proficiency through interactions with instructors and other students as well as formal presentations.

## SPAN 2060 INTERNATIONAL STUDY II

*Prerequisite: (R), SPAN 1120 or 1225 or by evaluation. §*

**VARIABLE 3-6 CREDITS** International Study II provides an intensive language and culture experience for the student who has a minimum of two semesters of Spanish (or equivalent). Following orientation meetings on campus, students spend a period of time (minimum 9 days) in a Spanish-speaking country. Students will demonstrate an intermediate level of oral proficiency and cultural competence through interactions with instructors and other students as well as formal presentations, while they experience firsthand the culture of a part of the Hispanic world.

## SPAN 2113 INTERMEDIATE SPANISH I

*Prerequisite: (R), SPAN 1225 or by evaluation. §*

**3 CREDITS** The student will demonstrate proficiency in understanding, speaking, reading, and writing Spanish at the intermediate level. The student will read a variety of Spanish texts, using them as a basis for conversation and composition in Spanish and will begin a systematic review of Spanish grammar. The class is taught in Spanish.

*General Education Course*

## SPAN 2223 INTERMEDIATE SPANISH II

*Prerequisite: (R), SPAN 2113 or by evaluation. §*

**3 CREDITS** A continuation of SPAN 2113. The student will demonstrate increased proficiency in understanding, speaking, reading, and writing Spanish at the intermediate level. The student will read short literary texts and use them as a basis for discussions and compositions in Spanish and will complete a systematic review of Spanish grammar. The class is taught in Spanish.

*General Education Course*

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## SPEECH LANGUAGE PATHOLOGY ASSISTANT

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### SLPA 1000 SPECIAL TOPICS

*Prerequisite: None*

**1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other speech-language pathology assistant courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

### SLPA 1013 FOUNDATIONS OF SPEECH-LANGUAGE

*Prerequisite: (R) (W)*

**3 CREDITS** Through study, online discussion and participation, the student will examine the evolution and acquisition of language from a social/interactional perspective. The course will focus on the acquisition of speech and language by children and adults, including the development of phonological, semantic, syntactic, and pragmatic aspects of linguistic competence. Students in this class will also explore changes that can occur during the life-span, as well as diversities of accent and dialect.

*Note: This course is offered online only.*

### SLPA 1023 PHONETICS

*Prerequisite: (R) (W)*

**3 CREDITS** Through study, online discussion and participation, the student will explore phonetics, the scientific study of speech. Students will be introduced to the International Phonetic Alphabet and develop skills in the recognition, production and transcription of the sounds of the world's languages. The course will train students to produce detailed phonetic transcriptions of American English. The student will also explore aspects of phonology. Finally, regional varieties of English and delays/disorders of the speech mechanism will be explored.

*Note: This course is offered online only.*

**SLPA 1033 PROFESSIONAL ISSUES FOR SPEECH-LANGUAGE PATHOLOGY**

*Prerequisite: (R) (W)*

**3 CREDITS** Through study, online discussion and participation, the student will understand and demonstrate the application of concepts of professional ethics and issues, review regulations and requirements for professional practice for speech-language pathology assistants, and discuss cultural considerations for studying and treating communication sciences and disorders.

*Note: This course is offered online only.*

**SLPA 1043 INTRODUCTION TO ARTICULATION DISORDERS**

*Prerequisite: (R) (W), SLPA 1033*

**3 CREDITS** Through study, online discussion and participation, the student will understand and demonstrate concepts related to disorders of the articulatory and phonological aspects of communication. The course will provide foundational information in phonetics, phonology, and language development, and allow the student opportunities to gain understanding and knowledge of the principles used in the treatment of articulation disorders.

**SLPA 1053 LANGUAGE DISORDERS IN THE EXCEPTIONAL CHILD**

*Prerequisite: (R) (W), SLPA 1033, SLPA 1023*

**3 CREDITS** Through study, online discussion and participation, the student will develop an understanding of the remediation of language disorders in children and adults who demonstrate exceptionalities. The course will provide emphasis on aspects of normal language development and communication, language disorders, and language intervention. Populations that will be explored in this class include, but are not limited to toddlers and preschoolers, children with learning disabilities, adolescents with language impairment, children with Down syndrome, children with auditory impairments, and children with Autism. Adult language disorders will also be examined. Along with language development this course will examine language differences and language disorders in persons from culturally and linguistically diverse backgrounds.

*Note: This course is offered online only.*

**SLPA 1063 ANATOMY AND PHYSIOLOGY OF THE SPEECH AND HEARING MECHANISM**

*Prerequisite: (R) (W), SLPA 1013*

**3 CREDITS** Through study, online discussion and participation, the student will consider specific theory and mechanisms directly related to the speech and hearing mechanism. Students in this class will explore concepts related to the study of the anatomy and physiology of the speech and hearing mechanisms including; terminology, structure and function of the skeletal frameworks for respiration, phonation, articulation, swallowing, and hearing.

*Note: This course is offered online only.*

**SLPA 1073 SCHOOL ISSUES FOR THE SPEECH-LANGUAGE PATHOLOGY ASSISTANT**

*Prerequisite: (R) (W), SLPA 1033*

**3 CREDITS** Through study, online discussion and participation, the student will demonstrate an understanding of issues and concepts specific to SLPAs in the public school. Topics of interest for this class include specific target populations, record keeping, billing, Individual Educational Programs (IEP), time management and scheduling, and roles and responsibilities.

*Note: This course is offered online only.*

**SLPA 1083 INSTRUCTIONAL PROCEDURES IN COMMUNICATION DISORDER**

*Prerequisite: (R) (W), SLPA 1043, SLPA 1053, SLPA 1063*

**3 CREDITS** Through study, online discussion and participation, the student will understand and demonstrate hands-on core skills related to clinical and teaching skills development in the practice of speech-language-pathology. When you have completed this course you should be able to apply fundamental therapeutic procedures to speech-language pathology treatment sessions.

*Note: This course is offered online only.*

**SLPA 2000 SPECIAL TOPICS**

*Prerequisite: None*

**1-4 CREDITS** The student will demonstrate specified competencies in subject areas not covered in other speech-language pathology assistant courses, but which are beneficial in providing a better understanding of the field. A specific subject is announced for each offering. Enrollment may be repeated with a change of topic.

**SLPA 2013 MEDICAL ISSUES FOR THE SPEECH-LANGUAGE PATHOLOGY ASSISTANT**

*Prerequisite: (R) (W), SLPA 1053, SLPA 1063, SLPA 1083*

**3 CREDITS** Through study, online discussion and participation, the student will demonstrate an understanding of issues and concepts specific to SLPAs in medical settings. Topics of interest for this class include specific target populations, record keeping, charting, billing, time management and scheduling, and roles and responsibilities.

*Note: This course is offered online only.*

**SLPA 2023 AUTISM**

*Prerequisite: (R) (W), SLPA 1053, SLPA 1083*

**3 CREDITS** Through study, online discussion and participation, the student will become familiar with current theories and scientific evidence on the nature and etiology of autism. Best practices in the treatment of Autism Spectrum Disorders (ASD) will be examined. Additionally, students will become familiar with inclusive practices, family concerns, multicultural issues, and community resources as they impact the lives of children and adults with ASD.

*Note: This course is offered online only.*

**SLPA 2033 CLINICAL EXPERIENCE I**

*Prerequisite: (R) (W), SLPA 1043, SLPA 1053, SLPA 1063, SLPA 1073, SLPA 1083*

**3 CREDITS** Through clinical site participation, the student will engage in supervised clinical training in the provision of speech and language services for children and adults. Clinical content for this course will include guided practice in the management and treatment of speech and language delays and disorders across the lifespan. Students will be supervised by licensed SLPs approved or trained by OCCC. Placements for Clinical Experience I will be made near the student's residence.

**SLPA 2043 ADULT NEUROGENIC COMMUNICATION DISORDERS AND TREATMENT**

*Prerequisite: (R) (W), SLPA 2013, SLPA 2023, SLPA 2033*

**3 CREDITS** Through study, online discussion and participation, the student will examine adult neurogenic communication disorders and treatment for use by speech-language pathology assistants in medical settings. This course examines aphasia, apraxia of speech, and the dysarthrias typically seen in adults. Cognitive disorders, as seen in traumatic brain injuries (TBI), as well as adult dysphagia issues will be discussed.

*Note: This course is offered online only.*

**SLPA 2053 AUGMENTATIVE COMMUNICATION**

*Prerequisite: (R) (W), SLPA 2013, SLPA 2023, SLPA 2033*

**3 CREDITS** Through study, online discussion and participation, the student will demonstrate understanding and knowledge of concepts, strategies, techniques, and issues surrounding augmentative and alternative communication (AAC). AAC strategies for use with children and adults will be a focus of this class. Hands-on experience with various methods of AAC strategies and devices will provide students with a foundation for therapies utilizing AAC principles for children and adult populations.

*Note: This course is offered online only.*

**SLPA 2063 CLINICAL EXPERIENCE II**

*Prerequisite: (R) (W), SLPA 2013, SLPA 2023, SLPA 2033*

**3 CREDITS** Through clinical site participation, the student will engage in supervised clinical training in the provision of speech and language services for children and adults. Clinical content for this course will include guided practice in the management and treatment of speech and language delays and disorders across the lifespan. Students will be supervised by licensed SLPs approved or trained by OCCC. Placements for Clinical Experience II will be made near the student's residence.

## SLPA 2083 CLINICAL EXPERIENCE FIELDWORK

*Prerequisite: None*

**1-4 CREDITS** Through clinical site participation, the student will engage in supervised clinical training in the provision of speech and language services for children and/or adults. Clinical content for this course will include guided practice in the management and treatment of speech and language delays and disorders across the lifespan. Students will be supervised by licensed speech-language pathologists approved or trained by OCCC. Clinical experience fieldwork assignments will be made near the student's residence.

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## SUCCESS IN COLLEGE AND LIFE

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### SCL 1001 SUCCESS IN COLLEGE AND LIFE

*Prerequisite: LS 0023, LS 0203, or adequate reading/writing assessment scores*

**1 CREDIT** Students will be introduced to some of the best practices for success in college and life. General topics include: Making Connections, Time Management, Major/Career Exploration, Setting Educational, Financial, and Personal Goals, Study Skills, Critical Thinking, Diversity and Global Awareness, College Ethics, Library Skills and Information Literacy, Using Technology Effectively, and Health and Wellness Strategies. This course should be taken during a student's first semester of college work at Oklahoma City Community College and is a required course in degree plans.

### SCL 1003 SUCCESS IN COLLEGE AND LIFE

*Prerequisite: LS-0023, LS-0203, or adequate reading/writing assessment scores*

**3 CREDITS** Following a similar approach as the one credit Success in College and Life course, in SCL-1003 students will be introduced to some of the best practices for attaining success in college and life. General topics include the following: making connections; time management; major/career exploration; setting educational, financial, and personal goals; diversity and global awareness; library skills and information literacy; using technology effectively; and health and wellness strategies. Students will be introduced to the services provided by Oklahoma City Community College, from academic advisement to clubs and labs. Students in this three-credit course will spend additional time on personal learning styles, textbook reading, study techniques, note-taking, memory techniques, and test-taking. Creative and critical thinking will be emphasized throughout the course in an increasingly collaborative environment. This course will satisfy the Life Skills requirement in the same manner the one credit course does.

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## SURGICAL TECHNOLOGY

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### ST 1000 SPECIAL TOPICS IN SURGICAL TECHNOLOGY

*Prerequisite: (R)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies not covered in other surgical technology courses, but which benefit students wanting additional training in the field or comprehension of the field. A specific topic is announced for each offering. Enrollment may be repeated with a change of topic.

### ST 1114 SURGICAL TECHNIQUES I

*Prerequisite: (R) Corequisite: ST 1126*

**4 CREDITS** This course is a clinical introduction to the operating room. The student will demonstrate competencies in the use and preparation of supplies and care of the surgical patient.

### ST 1126 SURGICAL TECHNIQUES PRACTICUM I

*Prerequisite: (R) Corequisite: ST 1114*

**6 CREDITS** This course is an introduction to the clinical setting. The student will demonstrate competencies on the application of the fundamentals of surgical techniques and procedures, including aseptic techniques, sterilization and disinfection, instrumentation, sutures and needles, and surgical supplies and equipment.

### ST 2214 SURGICAL TECHNIQUES II

*Prerequisite: (R) (W), ST 1114 and ST 1126; Corequisite: ST 2226*

**4 CREDITS** The student will demonstrate an understanding of the basic concepts of pathophysiology, regional anatomy, and surgical procedures related to general; genitologic; ophthalmic; ear, nose, and throat; gastrointestinal; and pediatric surgery.

### ST 2224 TECHNICAL MICROBIOLOGY

*Prerequisite: BIO 1224*

**4 CREDITS** The student will demonstrate an understanding of the following concepts: relationship between humans and microbes, immunology, disease and disease producing organisms, immunity, bloodborne pathogens, infectious disease processes and sterilization techniques for surgical technology.

*Note: This course is not equivalent to Microbiology-BIO 2125.*

### ST 2226 SURGICAL TECHNIQUES PRACTICUM II

*Prerequisite: (R) (W), ST 1126 and ST 1114; Corequisite: ST 2226*

**6 CREDITS** This course is designed to introduce the students to the hospital in general and the surgical area in particular through practical experience. The student will be able to demonstrate application of basic skills and surgical technology.

### ST 2314 SURGICAL TECHNIQUES III

*Prerequisite: (R) (W), ST 2226 and ST 2214; Corequisite: ST 2336*

**4 CREDITS** The student will demonstrate an understanding of the concepts of pathophysiology, regional anatomy and surgical procedures related to genitourinary, thoracic, vascular, cardiac, neurosurgery, orthopedic, reconstructive, and plastic surgery.

### ST 2336 SURGICAL TECHNIQUES PRACTICUM III

*Prerequisite: (R) (W), ST 2226 and ST 2214; Corequisite: ST 2314*

**6 CREDITS** The student will demonstrate application of lecture and laboratory material in the clinical setting.

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## TECHNOLOGY

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### TECH 1000 SPECIAL TOPICS

*Prerequisite: By evaluation. §*

**1-4 CREDITS** This course includes advanced technical topics to which students may be exposed. The course may be repeated with a change in content.

### TECH 1010 INTRODUCTION TO TECHNOLOGY

*Prerequisite: None*

**1-3 CREDITS** Students will demonstrate an understanding of the foundations of a specific technical area. These foundations will include an overview of the industry and its history. Each course will cover a specific topic and may be repeated with a change in content.

### TECH 1113 BEGINNING TECHNOLOGY APPLICATIONS

*Prerequisite: TECH 1010*

**3 CREDITS** Students will demonstrate proficiency in the knowledge, use and application of basic operations required in a specific technical field.

### TECH 2000 ADVANCED SPECIAL TOPICS

*Prerequisite: TECH 1113, ENGL 1113*

**1-4 CREDITS** This course includes a variety of technical topics to which a student may be exposed. The course may be repeated with a change of topics.

### TECH 2013 INTERMEDIATE TECHNOLOGY APPLICATIONS

*Prerequisite: Pre or Corequisite: TECH 1113, ENGL 1113*

**3 CREDITS** Students will demonstrate proficiency in the knowledge, use and application of intermediate operations required in a specific technical area.

**TECH 2023    ADVANCED TECHNOLOGY APPLICATIONS***Prerequisite: TECH 2013*

**3 CREDITS** Students will demonstrate proficiency in the knowledge, use and application of advanced operations and applications in a specific technical area.

**TECH 2773    TECHNOLOGY FIELD INTERNSHIP I***Prerequisite: Corequisite: TECH 1013*

**3 CREDITS** Students will apply knowledge obtained in previous coursework to produce products or services in a business or industrial setting. Students will be guided through directed observation in an area directly related to the employee's technical specialty. Specific requirements must be approved by the employer and academic advisor prior to starting the internship.

**TECH 2783    TECHNOLOGY FIELD INTERNSHIP II***Prerequisite: TECH 2773 Corequisite: TECH 1113*

**3 CREDITS** Students will apply advanced knowledge obtained in previous coursework to produce products or services in a business or industrial setting. Students will be guided through directed observation in an area directly related to the employee's technical specialty. Specific requirements must be approved by the employer and academic advisor prior to starting the internship.

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**THEATRE ARTS**

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**TA 1000    SPECIAL TOPICS***Prerequisite: (R) (W)*

**VARIABLE 1-3 CREDITS** The student will demonstrate competencies in subjects not covered in other theatre arts courses. Each course will cover a specific topic and may be repeated with a change in content.

**TA 1103    INTRODUCTION TO THEATRE***Prerequisite: (R) (W)*

**3 CREDITS** After an introduction to the basics of theatre-theatre history and literature, acting, directing, design, stagecraft, and the chain of responsibility from the playwright to the staff of the final production-the student will demonstrate understanding of the elements of theatre and their relevance to human experience.

*General Education Course (humanities)***TA 1121    PRODUCTION WORKSHOP***Prerequisite: (R)*

**1 CREDIT** The student will prepare for, rehearse for, and perform in situations related to theatre arts, especially in productions of the scheduled season and other selected activities of a theatrical nature. The importance of effective completion of assigned responsibilities and working within a unit with all members of the production will be stressed. Course may be repeated.

**TA 1133    VOICE AND SPEECH IMPROVEMENT***Prerequisite: (R)*

**3 CREDITS** The student will state in writing and/or orally his or her understanding of the physiological elements of the voice. The student will use the International Phonetic Alphabet by transcribing the oral word phonetically. After participating in exercises to improve vocal control, the student will demonstrate improved enunciation and pronunciation.

**TA 1223    MAKE-UP FOR THE STAGE***Prerequisite: (R)*

**3 CREDITS** The student will apply the principles, theory and psychology of theatrical make-up, including proper skin care; identification of types of make-up available; application of straight, corrective and old age make-up; and the construction and use of prosthetics and hair pieces.

**TA 1513    ACTING I***Prerequisite: (R) (W)*

**3 CREDITS** Through writing and performance activities, the student will demonstrate knowledge relating to the training of the voice, mind and body for stage acting.

**TA 2000    SPECIAL TOPICS IN THEATRE ARTS***Prerequisite: (R) (W)*

**3 CREDITS** Through writing and performance activities, the student will demonstrate knowledge relating to the training of the voice, mind and body for stage acting.

**TA 2113    INTRODUCTION TO TECHNICAL THEATRE***Prerequisite: (R), TA 1103*

**3 CREDITS** The student will demonstrate an understanding of fundamental techniques and practices in scene construction, painting and the management of scenery and properties for theatrical stage productions.

**TA 2123    PRACTICUM IN THEATRE ARTS***Prerequisite: (R) or by evaluation. §*

**3 CREDITS** The student will gain practical experience in a specific aspect of the theatre by working with a professional or semi-professional company either as an actor or as part of the production team. Performance will be judged by the professional with whom he or she works. Practicum may include work in the College's theatrical productions as well as off-campus work.

**TA 2203    ACTING II***Prerequisite: (R) (W), TA 1513*

**3 CREDITS** Through intensive study, analysis, and performance of scenes from selected plays, the student will develop skills emphasizing the development of character and actor interaction.

**TA 2233    ACTING FOR THE CAMERA***Prerequisite: (R) (W)*

**3 CREDITS** The student will develop and demonstrate, through listening, interpretation, and response exercises, a personal technique and methodology of acting in the media of film and video.

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**WORLD LANGUAGES**

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**WL 1000    SPECIAL TOPICS IN WORLD LANGUAGES***Prerequisite: (R) (W)*

**1-6 CREDITS** The beginning student will develop listening, speaking, reading, and writing skills in a foreign language (other than French, German, Russian, or Spanish). Credit is variable, and with different content, may be repeated for up to 6 credits.

**WL 2000    SPECIAL TOPICS IN WORLD LANGUAGES I***Prerequisite: (R) (W), WL 1000 or by evaluation. §*

**1-6 CREDITS** The student will develop listening, speaking, reading, and writing skills in a foreign language (other than French, German, Russian, or Spanish). Credit is variable, and with different content, may be repeated for up to 6 credits.