Course Descriptions

Online and Blended Courses

Courses that are offered online or blended will have an * or ^ after the title.

* - indicate online offerings

^ - indicate blended offerings

Accounting

ACCT 2301 - Financial Accounting

3 sem. hrs. Financial accounting concepts and their application in the accounting process for business organizations including financial statement preparation, analysis and communication of financial information. TCCNS Equivalent: ACCT 2301

ACCT 2302 - Managerial Accounting

3 sem. hrs. The use of accounting information as an aid to management decision making, including performance measurement and budgets. Prerequisite: ACCT 2301 TCCNS Equivalent: ACCT 2302

ACCT 3311 - Intermediate Accounting I*

3 sem. hrs. An intensive study of the balance sheet accounts and the related income statement accounts. It exposes the student to the various Accounting Principles Board opinions and Financial Accounting Standards Board statements, and International Financial Reporting standards, as these publications affect the various accounts and transactions. It covers the various working capital accounts and operational assets. Prerequisites: ACCT 2301, ACCT 2302, and Junior standing or above.

ACCT 3312 - Intermediate Accounting II*

3 sem. hrs. A continuation of Intermediate Accounting I involving current and non-current liabilities and owner equity accounts, the Statement of Cash Flows, deferred income tax, financial statement analysis and several special problem areas. Prerequisites: ACCT 3311 and Junior standing or above.

ACCT 3314 - Cost Accounting*

3 sem. hrs. A study of procedures and concepts in allocating the costs of firm inputs to outputs, determination and use of standard costs in the control function, profit planning and control techniques used in management decision-making. Prerequisites: ACCT 2301, ACCT 2302, and Junior standing or above. (MISY 2305 recommended.)

ACCT 3315 - Multinational Entities: Accounting and Consolidations*

3 sem. hrs. A study of the similarities and differences between U.S. and other countries' accounting and reporting procedures. Basic consolidation of international segments will be covered. Use of spreadsheets and web technology required. Prerequisites: ACCT 2302 and Junior standing or above.

ACCT 3316 - Governmental and Not-for-Profit Accounting

3 sem. hrs. A study of fund accounting used in governmental entities and non-profit organizations. Emphasis on budgetary and fund accounts. Prerequisites: ACCT 2301, ACCT 2302, and Junior standing or above.

ACCT 3317 - Oil, Gas, & Energy Accounting*

3 sem. hrs. This course covers the basic principles of oil and gas accounting. Course topics include upstream oil and gas operations, successful efforts accounting, full cost pool accounting, accounting for production, exploration and construction, joint interest accounting, international operations, oil and taxation and analysis of oil and gas financial statements. Prerequisites: ACCT 3311 or equivalent and Junior standing or above.

ACCT 3321 - Federal Income Tax I*

3 sem. hrs. Emphasizes the role of taxation in the business decision-making process. The course introduces the tools to conduct basic tax research and planning. Prerequisites: ACCT 2301, ACCT 2302, and Junior standing or above.

ACCT 3322 - Federal Income Tax II*

3 sem. hrs. Examines additional, more complex topics in business decision-making, tax research, and tax planning. Prerequisites: ACCT 3321 and Junior standing or above.

ACCT 3340 - Fraud Examination*

3 sem. hrs. This course covers the basic principles of fraud examination. Course topics include the behavioral aspects of fraud and common fraud schemes including skimming, larceny, check tampering, register disbursement schemes, billing schemes, payroll and

expense reimbursement, non-cash misappropriations, corruption and bribery, and fraudulent financial statements. Prerequisites: ACCT 2301, ACCT 2302 or equivalent and Junior standing or above.

ACCT 4311 - Auditing Principles and Procedures*

3 sem. hrs. Auditing principles and techniques underlying the audit process; procedures used in conducting external audits, reviews and compilations. Prerequisites: ACCT 3312, and Junior standing or above.

ACCT 4314 - Advanced Accounting Problems*

3 sem. hrs. A study of advanced accounting topics, including leases, pensions, consolidations, asset retirement obligations, accounting for not-for-profit organizations and government entities and other special problem areas. Prerequisites: ACCT 3312 and Junior standing or above.

ACCT 4345 - Ethics for Texas CPA Candidates and Business Executives

3 sem. hrs. This course will cover ethical theory, ethical reasoning, integrity, objectivity, independence and other core values and regulatory requirements associated with the practice of professional accounting and decision making of other executives, with an emphasis on corporate governance in the post-Sarbanes-Oxley regulatory environment. This course satisfies the ethics requirement of the Texas State Board of Public Accountancy (TSBPA); however, it does not count for advanced accounting hours required to sit for the CPA exam. Students who receive credit for ACCT 4345 cannot also receive credit for ACCT 5345. Prerequisite: Junior Standing or above.

ACCT 4355 - Accounting Information Systems*

3 sem. hrs. A study of the role of accounting information systems and related subsystems in both for profit and not-for-profit entities. The relationship of accounting information systems to other systems, including management information systems, is addressed. Concepts are reinforced by the completion of computer-based projects. Prerequisites: ACCT 2301, ACCT 2302, MISY 2305, and Senior standing (no Juniors).

ACCT 4390 - Current Topics in Accounting*

3 sem. hrs. Selected topics for special study related to accounting functions, processes or issues. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

ACCT 4396 - Directed Individual Study

1-3 sem. hrs. Individual supervised study and completion of a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

ACCT 4398 - Accounting Internship

3 sem. hrs. Supervised full-time or part-time, off-campus training in public accounting, industry, or government. Oral and written reports required. Prerequisites: accounting major, and Junior standing or above with a minimum 3.00 accumulated GPA in upper division accounting courses. Student must apply to program and be accepted prior to registration. May not be repeated for credit. May not count as accounting requirement for CPA. State Board of Accountancy may not approve course as an accounting equivalent for CPA.

Anthropology

ANTH 3301 - Cultural Anthropology

3 sem. hrs. Study of the social life of human groups from their earliest appearance to the present. Analyses of cultures include language, kinship, art, religion, economics, and political behavior. Cross-cultural comparisons allow development of generalizations about social patterns, social structure, and cultural practices found in human societies. (Credit may not be given for both this course and SOCI 3301.)

ANTH 3370 - Native Americans in North America

3 sem. hrs. An ethnographic and historical analysis of Native American cultures in what is now called North America from prehistoric times to the present. (Credit may not be given for both this course and SOCI 3370.)

ANTH 3390 - Special Topics in Anthropology

3 sem. hrs. Study of different topics in anthropology including biological, archaeological, cultural, or linguistic subjects. May be repeated when topics vary.

Arabic

ARAB 1311 - Arabic I

3 sem. hrs. This course introduces students to listening, speaking, reading, and writing skills in an Arabic cultural framework. It is designed for students with no previous knowledge of Arabic. The main objective is to communicate in Arabic for understanding. This will be accomplished by learning Modern Standard Arabic as a beginner and by gaining exposure to the instructor's dialect form of Arabic.

ARAB 1312 - Arabic II

3 sem. hrs. This course will continue to reflect the emphasis of Arabic 1311 on Modern Standard Arabic (MSA) and the spoken dialect of the instructor. Students will continue to build on the skills and strategies acquired in Arabic 1311 for all listening, reading, speaking, writing and culture modalities. In addition to increased vocabulary repertoire, a greater emphais will be placed on basic grammatical understanding, to deal with more complex sentence structure, and larger spoken and written exercises.

ARAB 2311 - Arabic III

3 sem. hrs. Continued emphasis on Modern Standard Arabic and the spoken dialect. Students will build on the skills and strategies acquired in beginning Arabic courses, including listening, reading, speaking, writing and culture modalities. In addition to increased vocabulary repertoire, a greater emphasis will be placed on basic grammatical understanding to deal with more complex sentence structure and larger spoken and written exercises. Prerequisite: ARAB 1312 or permission of instructor.

Art

ARTS 1301 - Art and Society

3 sem. hrs. Designated for non-art majors. Establishes a working vocabulary for evaluating works of art in various media. Objects are interpreted in terms of their specific historical contexts and the changing relationships between art and society. This course does not fulfill the art history requirement for art majors. TCCNS Equivalent: ARTS 1301 This course satisfies the university core curriculum requirement in fine arts.

ARTS 1303 - Art History Survey I

3 sem. hrs. An examination of painting, sculpture, architecture, and other arts from the ancient through medieval periods. TCCNS Equivalent: ARTS 1303 This course satisfies the university core curriculum requirement in fine arts.

ARTS 1304 - Art History Survey II

3 sem. hrs. A further examination of painting, sculpture, architecture, and other arts from the Renaissance through Modern periods. This course satisfies the university core curriculum requirement in fine arts. Arts majors encouraged to take ARTS 1303 first. TCCNS Equivalent: ARTS 1304

ARTS 1311 - Design I

3 sem. hrs. A studio course concerning the fundamentals of art with emphasis on two-dimensional concepts. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 1311

ARTS 1312 - Design II

3 sem. hrs.
A studio course concerning the fundamentals of art with emphasis on three-dimensional concepts. This 3D foundations course utilizes creative problem-solving strategies and basic sculpture tools to explore spatial relationships and to create sculptural forms in space. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 1312

ARTS 1316 - Drawing I

3 sem. hrs. A studio course investigating a variety of media techniques, including their descriptive and expressive possibilities. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 1316

ARTS 1317 - Drawing II

3 sem. hrs. A further investigation of media techniques explored in Drawing I, including their descriptive and expressive possibilities. Prerequisite: ARTS 1316 Drawing I. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 1317

ARTS 2311 - Design III: Color

3 sem. hrs. Investigation of the properties of color. Color is studied and applied to studio-oriented design assignments. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 2316 - Painting I

3 sem. hrs. A studio course exploring the potentials of painting media. Prerequisite: ARTS 1316 Drawing I. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 2316

ARTS 2323 - Drawing III

3 sem. hrs. A studio course continuing the investigation of media and techniques explored in Drawing I and Drawing II. Students investigate how formal aspects and selected media along with conceptual choices create specific visual ideas. Prerequisites: ARTS 1317. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 2323

ARTS 2326 - Sculpture I

3 sem. hrs. An introductory studio course exploring sculptural approaches, materials, concepts, and technical processes. Materials include wood, plaster, steel, and plastics. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 2326

ARTS 2333 - Printmaking I

3 sem. hrs. An introductory studio course in basic printmaking processes and techniques. Prerequisite:

ARTS 1311 Design I or ARTS 1316 Drawing I. Co-requisite: SMTE 0097 Art Student Safety Seminar.

TCCNS Equivalent: ARTS 2333

ARTS 2346 - Ceramics I

3 sem. hrs. An introductory studio course in basic ceramic processes. Co-requisite: SMTE 0097 Art Student Safety Seminar. TCCNS Equivalent: ARTS 2346

ARTS 2356 - Photography I

3 sem. hrs. This course is an introduction to digital photography capture, processing, and basic editing software. While focusing on the fundamentals of digital photography and printing techniques, it will introduce students to the theory and practice of photography and assist them in producing a conceptually devised and technically consistent portfolio. TCCNS Equivalent: ARTS 2356

ARTS 2367 - Watercolor

3 sem. hrs. A studio course exploring techniques in water-base media. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3301 - Life Drawing

3 sem. hrs. Drawing from the model using a variety of techniques and media. Prerequisite: ARTS 1317. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3302 - Screen Printing

3 sem. hrs. Traditional printmaking processes will be explored using black and white and color techniques, including but not limited to screenprinting. Prerequisite: ARTS 1311: Design I or ARTS 1316: Drawing I
Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3303 - Intermediate Painting

3 sem. hrs. Explores the issues of content, imagery, application, and influences of master artists. Prerequisite: ARTS 2316 Painting I. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3304 - Fabrication Sculpture

3 sem. hrs. Building upon introductory skills, this course explores construction and fabrication in sculpture focusing on a primary material for the semester and applying advanced techniques and processes for this material. Through this material and techniques, students begin defining and developing their visual vocabulary relative to art history and contemporary sculptural issues. Prerequisite: Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3305 - Mold Making and Casting Sculpture

3 sem. hrs. This course is designed to build upon the fundamental principles of mold making and casting while exploring more complex concepts, materials, and techniques. Creating multi-part molds, flexible molds, and investment molds, the project assignments incorporate the unique versatility of mold making and casting for exchanging media and making a series of multiples. In addition to making casts, students compare methods for assembling cast forms together to create larger sculptural artworks and installations. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3306 - Figurative Sculpture

3 sem. hrs. A study of the human figure from an anatomical and artistic perspective. Examines the skeletal and muscular components of the figure in order to create lifelike and emotive sculptures. Discussion of the figure in both classical and contemporary art. Working with armature and modeling clay. Co-requisite: SMTE 0097 Art Student Safety Seminar

ARTS 3307 - Lithography and Planographic Process

3 sem. hrs. Traditional printmaking processes will be explored using black and white and color techniques, including but not limited to lithography and monoprinting. Prerequisite: ARTS 1311: Design I or ARTS 1316: Drawing I. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3311 - Color Theory

3 sem. hrs. This course develops an understanding of color properties and relationships through formal exercises, research and creative thinking. Students build a vocabulary for analyzing and identifying color and color phenomena. Concepts of color theorists and color use in a variety of fields are examined to understand the application of color theory. Students will investigate the use of color in their own work and in the work of others to understand the conceptual and aesthetic application of color. Prerequisite: Design I.

ARTS 3313 - Figure Painting

3 sem. hrs. This course addresses the structure and anatomy of the human figure using oil paint. Painting techniques and color theory exercises will familiarize students with tradition painting methods. Students will render proportions, balance, form and mass of the human figure. Research and discussions will address the human form throughout history as well as in the contemporary context. Image presentations, critiques and live model sessions will supplement studio work. Prerequisite: Arts 2316 Painting 1. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3316 - Art Activities I

3 sem. hrs. Practical experience with basic design, drawing, painting, and sculpture, along with a study of art history and criticism. Includes a consideration of how these experiences relate to art curricula in the elementary school. Prerequisites: Completion of lower-division art course work in design (6 sem. hrs.), drawing (6 sem. hrs.), and art history (6 sem. hrs.).

ARTS 3322 - Art Activities II

3 sem. hrs. Practical experiences with basic design, drawing, painting, printmaking, sculpture, and crafts, along with a study of art history and criticism. Includes a consideration of how these experiences relate to art curricula in the secondary school. Prerequisites: Completion of lower-division art course work in design (6 .), drawing (6 .), and art history (6 .).

ARTS 3324 - Wheel Throwing

3 sem. hrs. Covers wheel-thrown ceramics (other production techniques may be included), basic glazemaking, and an introduction to kiln firing and loading.

Prerequisite: ARTS 2346 Ceramics I. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3325 - Handbuilt Ceramic Techniques

3 sem. hrs. This course is a continuation of hand-building covered in Ceramics I ARTS 2346. The course will cover more advanced forming techniques such as extrusion, hump, slump, and press molds, and slip-casting. New surface and firing techniques will include more advanced techniques such as underglazes, onglaze techniques such as majolica, fired decal application, raku, and an introduction to low fire glazes and surfaces. Prerequisite: Beginning Ceramics ARTS 2346.

ARTS 3350 - Art of the United States

3 sem. hrs. A survey of the major developments in the art of North America from Pre-Columbian times to the modern era

ARTS 3352 - Modern Art

3 sem. hrs. A survey of the major movements of 20th century art and aesthetics, which developed primarily in Europe. Includes a review of late 19th century modernist antecedents with emphasis placed on the principal movements of the early 20th century: Fauvism, German Expressionism, Cubism, Futurism, Abstract Art, Dada, and Surrealism.

ARTS 3353 - Art Since 1945

3 sem. hrs. An examination of the dispersal of European artists and Modernism, primarily to America, as a result of World War II. Examines the development of Abstract Expressionism in New York in the 1940s and 50s, followed by a survey of recent trends in contemporary art to the present day.

ARTS 3365 - Photography II

3 sem. hrs. An intermediate studio course using digital cameras and image manipulation software. Prior completion of ARTS 2356 is required.

This course will enhance and expand skills developed in Photography I. It is geared toward informing students in the many ways we can make photographs; by seeking them

out, framing them, forming them, extracting them, building them, and finally sequencing and presenting them. Students will engage in the theory and practice of photography, refine their photographic technique, and create a conceptually devised and technically consistent portfolio. Emphasis is placed on the development of a strong conceptual foundation from which to approach the making and understanding of photography as an art form. This knowledge will be achieved through photographic assignments, slide lectures of relevant works, and in-class critiques. It can be repeated twice for credit. Prerequisite: ARTS 2356. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 3366 - Analogue Photography

3 sem. hrs. An introductory studio course in analogue photography using film cameras and the silver gelatin darkroom process. While focusing on the fundamentals of black and white, analogue photography and printing techniques this course will assist students in producing a conceptually devised and technically consistent portfolio. Prior completion of ARTS 2356 is required. Co-req: SMTE 0097.

ARTS 3367 - Digital Design Tools and Applications

3 sem. hrs. This studio course explores the fundamental principles, standard creative processes and basic digital tools utilized in graphic design. The concepts and software learned are employed in projects specifically targeted to serve the professional and promotional needs of studio artists and design enthusiasts.

ARTS 4085 - Senior Capstone

0 sem. hrs. Required for all art students in partial fulfillment of the requirements for the BA in Art, BFA in Art studio track and the BFA with Teacher Certification in Art tracks. This course collects capstone materials for ARTS degrees. The course must be taken in the student's final semester before graduation. Prerequisite: Final Semester of undergraduate study.

ARTS 4301 - Advanced Drawing

3 sem. hrs. Emphasis on the development of content through drawing. Research on contemporary trends and process investigation will aid students in the development of visual ideas and lead to a cohesive body or work. Prerequisite: ARTS 2323. Co-requisite: SMTE 0097 Art Student Safety Seminar. May be taken three times for credit.

ARTS 4302 - Advanced Printmaking

3 sem. hrs. Furthers competencies attained in Printmaking I and Intermediate I & II courses. Prerequisites: ARTS 3302 Screen Printing and ARTS 3307 Lithography and Planographic Process.

Co-requisite: SMTE 0097 Art Student Safety Seminar.

May be taken three times for credit.

ARTS 4303 - Advanced Painting

3 sem. hrs. Assumes competencies attained in ARTS 3303. Co-requisite: SMTE 0097 Art Student Safety Seminar. May be taken three times for credit.

ARTS 4304 - Advanced Sculpture

3 sem. hrs. Assumes competencies attained in ARTS 3304. Co-requisite: SMTE 0097 Art Student Safety Seminar. May be taken three times for credit.

ARTS 4324 - Advanced Ceramics

3 sem. hrs. Assumes competencies attained in ARTS 3324. Co-requisite: SMTE 0097 Art Student Safety Seminar. May be taken three times for credit.

ARTS 4350 - Pre-Columbian Art of Mesoamerica

3 sem. hrs. Explores the history of Pre-Columbian art from Mexico and Central America, from the Olmec through the Aztec cultures. May be taken three times for credit.

ARTS 4352 - Modern Art of Mexico

3 sem. hrs. Explores the history of art during the nineteenth and twentieth centuries in Mexico. May be taken three times for credit.

ARTS 4354 - Global Currents in Contemporary Art

3 sem. hrs. The course will cover key developments in contemporary art from the post-World War II era in the Western context to global currents in the present international arena. From a socio-political perspective, artistic tendencies will be considered as part of a trajectory that saw the center of the art world shift from being Euro- and Anglo-centric in the mid-twentieth century, to one without a discernible center in the early twenty-first century. Analysis of artworks from this decentralized cultural climate will focus on the evolution of conceptualism, the persistence of traditional modes of aesthetic practice, the role of the art market, and notions of environmentalism and sustainability as related to

these "transnational transition." The course will consider works from Eastern Europe, South and Central America, the Caribbean, East/West/South/Southeast Asia, Oceania, and Africa.

ARTS 4356 - Contemporary Art Since 1980

3 sem. hrs. The course will examine the evolution of architecture, sculpture, painting, digital media, installation, and interdisciplinary arts in the global context from 1980 to the present, in light of the historical and intellectual background of the period. Topics covered will include the transition from postmodernism to contemporaneity, considering notions of appropriation, commodification, consumerism, memory, history, and globalization. Lectures will be constructed upon thematic analysis of contemporary, primary sources coupled with secondary source material, and complemented by presentation opportunities and class discussion.

ARTS 4365 - Advanced Photography

3 sem. hrs. Assumes competencies attained in ARTS 3365. Covers content as creative expression in addition to basic photographic skills. Co-requisite: SMTE 0097 Art Student Safety Seminar. May be taken three times for credit.

ARTS 4390 - Topics in Art History

3 sem. hrs. May be repeated when topics vary.

ARTS 4391 - Topics in Studio Art

3 sem. hrs. May be repeated when topics vary. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application. Co-requisite: SMTE 0097 Art Student Safety Seminar.

Astronomy

PHYS 1303 - Introduction to Astronomy: Stars and Galaxies

3 sem. hrs. (2:2) This is one of two courses in the introduction to astronomy sequence which emphasizes the nature of astronomical phenomena over the mathematical analysis of them. This course will focus mostly on the nature of light, the nature and evolution of stars, the material between the stars, the Milky Way Galaxy, external galaxies, and the structure and evolution of the universe as a whole. Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 1303 This course counts toward the natural science component of University Core Curriculum. Offered every Fall.

PHYS 1304 - Introduction to Astronomy: Solar System

3 sem. hrs. (2:2) This is one of two courses in the introduction to astronomy sequence which emphasizes the nature of astronomical phenomena over the mathematical analysis of them. This course introduces astronomical phenomena related to the Solar System such as apparent motion of the Sun, phases of the Moon and apparent and true motion of the planets. Main focus will be on the objects comprising the Solar System: planets, their moons, asteroids, comets and trans-Neptunian bodies. A portion of the course will be dedicated to the formation and development of the Solar System and other, extrasolar planetary systems. The course also will touch the aspects of human exploration of the Solar System and the role of technology in our learning and understanding of the Solar System. This includes the history and the basics of robotic and manned spaceflights. Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 1304 This course counts toward the natural science component of University Core Curriculum. Offered every Spring and Summer.

Atmospheric Science

ATSC 2101 - Weathercasting

1 sem. hrs. (1:0) This course is to practice in preparing and presenting weathercasts for radio and television. The instructors of this course will provide the students with: (1) information in the form of lectures and supplemental readings; (2) opportunities to practice weathercasting on video, and (3) advice, supervision, and guidance. In lecture, students will spend most of the course learning about geography and weathercasting rules. A large portion of the course is to practice the weathercasting and report. Prerequisite ATSC 2403. Offered on sufficient demand.

ATSC 2301 - Weather Observations

3 sem. hrs. (3:0) This course is an introduction of the basic concept of meteorology. The focus is on the measurements of the atmosphere and weather related phenomenon. The principle of the instruments used to measure temperature, pressure, moisture, radiation, precipitation and other weather related properties of the atmosphere will be introduced. The differences among the observations from in-situ, balloon borne, airborne, and satellite borne instruments will be examined and discussed. Prerequisite: ATSC 2403. Offered on sufficient demand.

ATSC 2302 - Introduction of Data Analysis in Atmospheric Sciences

3 sem. hrs. This course will enhance student skills for analyzing atmospheric science-related datasets under various scientific programming environments. The focus is on developing a data analysis and problem-solving skillsets using mostly Python. The course includes: basic concepts of operating systems and high-level programming languages; basics of programming in Python; general data analysis methods and tools; scientific data formats used in remote sensing data and numerical model output; publication-quality scientific graphics; and critical steps of building a large programming project. Examples with IDL and FORTRAN are also included.

ATSC 2403 - Introduction to Meteorology

4 sem. hrs. (3:2) This course is an introduction to meteorology and the dynamics of planetary atmospheres. Emphasis on atmospheric accretion, composition, evolution, structure, and dynamics. Lab exercises cover basic measurement techniques, weather maps, and forecasting. A student cannot receive credit for both this course and ESCI 3403 - Introduction to Meteorology. Corequisite: SMTE 0096 Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Spring (on sufficient demand), Fall.

ATSC 3305 - Physical Meteorology

3 sem. hrs. (3:0) This course will cover the fundamentals of atmospheric physics including the atmospheric composition, kinetic theory of gases, moist processes, aerosol, solar and terrestrial radiation, scattering of electromagnetic radiation and radiative transfer. Prerequisites: ATSC 2403 and PHYS 2426. Offered on sufficient demand.

ATSC 3306 - Atmospheric Thermodynamics

3 sem. hrs. (3:0) This course introduces a foundation in the thermodynamics of the atmosphere. After a brief review of general thermodynamics, the emphasis is given to the basic principles that are useful for the application to atmospheric problems. The course covers a number of atmospheric processes that are basically thermodynamic in nature. The specific topics include aerological diagrams, atmospheric statics, and vertical stability. Prerequisite: ATSC 2403 and PHYS 2425. Offered on sufficient demand.

ATSC 3401 - Synoptic Meteorology

4 sem. hrs. (3:2) This course focuses on introducing middle-latitude synoptic weather phenomenon, including planet waves, frontal systems etc. We will apply principles of Dynamic Meteorology in regards to processes in the atmosphere, weather elements and forecasting. We will examine the structure and dynamics of these systems by integrating weather observations with the current state of dynamic theory, numerical weather prediction models, and the physical principles of atmospheric thermodynamics and cloud and precipitation physics. Prerequisite: ATSC 3306 - Atmospheric Thermodynamics. Corequisite: SMTE 0096 Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

ATSC 3402 - Mesoscale Meteorology

4 sem. hrs. (3:2) This course focuses on introducing mesoscale weather systems including thunderstorms, squall lines and hurricanes, as well as the mechanisms of tornado and lighting. The methods of observing, analyzing, and predicting these severe weather systems with the interpretation of satellite and radar images will also be introduced in this class. Prerequisite: ATSC 3306 - Atmospheric Thermodynamics. Corequisite: SMTE 0096 Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

ATSC 4301 - Dynamic Meteorology I

3 sem. hrs. (3:0) This course focuses on introductory-level atmospheric dynamics. Basic concepts of geophysical fluid dynamics and its application to a variety of atmospheric phenomena are introduced. Specific topics include the equations of motion on rotating earth, vorticity, potential vorticity, divergence, circulation theorem, and planetary wave. Prerequisites: ATSC 3306 and MATH 2414. Offered on sufficient demand.

ATSC 4302 - Dynamic Meteorology II

3 sem. hrs. (3:0) This course is a continuation of ATSC 4301 (Dynamic Meteorology I), which covers the introductory-level atmospheric dynamics. The course introduces more advance materials including equatorial waves, baroclinic and barotropic instability, two-dimensional turbulence, atmospheric teleconnection, El Nino/Southern Oscillation, Madden-Julian Oscillation, global warming, and numerical modeling of atmospheric circulations. Prerequisite: ATSC 4301 . Offered on sufficient demand.

ATSC 4305 - Remote Sensing

3 sem. hrs. (3:0) This course aims to introduce the fundamentals of satellite/airborne remote sensing techniques and demonstrates its application to various aspects of Earth Sciences. Topics include physical principles of remote sensing from ultraviolet to the microwave, radiometry, sensors and sensor technology, calibration, and environmental applications for land, ocean and atmosphere research. Prerequisite: PHYS 2426. Offered on sufficient demand.

ATSC 4335 - Climate and Climate Variability

3 sem. hrs. 3:0 This course intended to guide environmental science undergraduate students in developing a conceptual understanding of Earth's global climate and its variability. Review past climates, present mean state of the climate system, climate variability from seasonal to multi-decadal time scales, and climate change. Special attention will be given to climates of the Gulf of Mexico, Caribbean Sea and surrounding land regions. Plausible climate-change scenarios, as well as mitigation and adaptation strategies will also be discussed. Cross listed with ESCI 4335. Prerequisite: ATSC 2403 or ESCI 3351. Spring.

ATSC 4496 - Directed Independent Study

1-4 sem. hrs. (1-4:0-4) Requires a formal proposal of study to be completed in advance of registration and to be approved by the supervising faculty, the Chairperson, and the Dean of the College. Spring, Summer, Fall.

ATSC 4498 - Internship in Atmospheric Science

1-4 sem. hrs. ATSC 4498 (Internship in Atmospheric Science) gives ATSC undergraduates an opportunity to obtain valuable paid or unpaid work experience related to atmospheric science, to better position them for employment after graduation. Students contract to work a specified number of hours weekly over a full semester with a state or federal agency or private industry related to atmospheric science, in return for college credit as follows: 3-6 hrs./week=1 sem. hr., 6-9 hrs./week =2 sem. hrs., 9-12 hrs./week=3

sem. hrs., 12-15 hrs./week=4 sem. hrs. Students may contract for 1-2 sem. hrs. in a single summer session (5.5 weeks) but may contract for up to 4 sem. hrs. if carrying out internship over a regular long semester or two summer sessions (11 weeks). If interning for the summer, students should increase the number of hours interned weekly to account for the shortened period worked, so total hours interned will be equivalent to those in a regular long semester. A student may intern only twice with a single office or agency. The internships will not apply towards graduate credit. N/A

ATSC 4590 - Selected Topics

1-5 sem. hrs. (1-5:0-4) This course includes special topics with variable content. May be repeated for credit. Offered on sufficient demand. Prerequisite: Consent of the instructor. Offered on sufficient demand.

Bilingual/ESL/Multicultural

BIEM 4344 - The Bilingual Child, Culture, & the Social Studies Curriculum

3 sem. hrs. Studies of the bilingual children, the effect of culture on psychological development, and the challenges of the social studies curriculum.

BIEM 4345 - Language Acquisition and Development

3 sem. hrs. A study of language acquisition and development with special reference to implications for monolingual and bilingual learners.

BIEM 4349 - Linguistics for Bilingual Teachers

3 sem. hrs. A study of the phonological, morphological, syntactical, lexical, and semantic characteristics of contemporary Spanish and English. The course focuses on Spanish-English bilingualism.

BIEM 4351 - The Minority Child

3 sem. hrs. Introduces students to themes and issues associated with the education of the minority child; modes of learning in various curriculum subjects; relation of materials and methods to affective and cognitive aspects of learning; information concerning the learning strengths and needs of children from various minority groups. (May be used to satisfy COE multicultural requirement.)

BIEM 4355 - Language Arts Studies in the Bilingual Curriculum

3 sem. hrs. Basic methodological strategies and assessment skills required to teach language arts in the elementary bilingual classroom are provided. Emphasis is on teaching in Spanish.

BIEM 4356 - Content Area Studies in the Bilingual Curriculum

3 sem. hrs. The concepts and skills required to teach mathematics and science in the elementary bilingual classroom are provided.

BIEM 4357 - Methods of Teaching English as a Second Language

3 sem. hrs. Studies in methodology and techniques available for teaching those whose native language is not English. Testing and assessment of English language learners will be integrated into the course.

BIEM 4360 - Foundations in Bilingualism

3 sem. hrs. The philosophical and legal foundations of bilingual schooling in the United States through a sociohistorical approach. The rationale for bilingual education is examined, as are the basic program models. An overview of bilingual education in Texas is also provided.

BIEM 4393 - Field Studies in Family Literacy

3 sem. hrs. Field experiences designed to develop skills regarding the orientation of the adult population to bilingual/ESL purposes and philosophy, improving parental involvement, and English literacy skills.

BIEM 4696 - Directed Individual Study

3 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies.

Biomedical Science

BIMS 2171 - Medical Terminology

1 sem. hrs. (1:0) This course stresses familiarity with and facility in scientific terminology. Areas of focus include: an introduction to scientific terminology, word analysis, etymologies, spelling and pronunciation. Prerequisites: BIOL 1406 - Biology I and BIOL 1407 - Biology II or BIOL 2401 and BIOL 2402. Offered fall and spring semesters every year.

BIMS 2200 - Professional Skills

2 sem. hrs. (2:0) Presentation and discussion of selected topics relating to the professional skills of practicing scientists including literature searches, reviews, paper presentation, professional opportunities and job requirements. Biomedical Sciences and Biology majors only. Offered fall, spring and summer semesters every year.

BIMS 3100 - Essentials for Applied Forensics Laboratory Sciences

1 sem. hrs. Introduction to general laboratory procedures related to the criminal investigation system and regulations (especially related to Texas), lab safety, quality assurance and quality control, professional ethics, specimen acquisition and maintenance and chain of custody. Prerequisites: BIOL 1407 - Biology II and CHEM 1412 - General Chemistry II.

Corequisites: BIMS 3103 (Essentials Laboratory for Forensic Science); SMTE 0092 (Biomedical Lab Safety Seminar) is required for continued participation in this course.

Cannot be taken for credit by Clinical Laboratory Science students.

BIMS 3103 - Essentials Laboratory for Forensic Science

1 sem. hrs. (0:3) Application of essential practices for forensic science. Prerequisite or Co-requisite: CLSC 3200 - Essentials for Applied Laboratory Sciences. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIMS 3300 - Animal Nutrition

3 sem. hrs. (3:0) Examines the dietary requirements of both companion animals and livestock. Includes the anatomy, physiology and biochemistry of the gastrointestinal system, nutrient procurement and use, feed additives, growth stimulants, metabolic diseases, and diet therapy. Cross listed with BIOL 3300. Prerequisites: BIOL 1407 - Biology II and CHEM 3411 - Organic Chemistry I. Prerequisite or Corequisite CHEM 3412 - Organic Chemistry II. Offered spring semester every year.

BIMS 3301 - Introduction to Animal Science

3 sem. hrs. (3:0) This course is an orientation into animal science as it relates to agriculture and veterinary medicine. Students will also be guided on issues to ensure successful veterinary school matriculation. Offered fall semester every year.

BIMS 3302 - Introduction to Forensic Anthropology

3 sem. hrs. This course introduces the student to the osteological examination of the human skeletal system as practiced by professional forensic anthropologists. It is designed to equip the student with introductory understanding of the anatomy and normal appearance of the human skeleton as well as some of its variations, including pathological conditions, traumatic injury, and postmortem damage.
Prerequisites: Sophomore level standing or permission of instructor or BIOL 2401 Anatomy and Physiology I. Corequisites: SMTE 0092, Biomedical Laboratory Safety Seminar.

BIMS 3320 - Survey of Forensic Science

3 sem. hrs. (2:2) A survey of the methods and materials used to gather and process evidence at potential crime scenes. Students are introduced to the legal rules of evidence and their practical ramifications during scientific criminal investigations. In laboratory, students use commonly available processing items and tools to investigate a simulated crime scene. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIMS 3325 - Professional Practice in Forensic Science

3 sem. hrs. (3:0) An introduction to industry standards and ethics for professional forensic scientists. This course analyzes cognitive processes, scientific methods and quality control/quality assurance issues in forensic investigations. It also stresses maintaining credibility in an adversarial legal system through the development of technical/scientific speaking and writing skills. Prerequisite: BIMS 3320 - Survey of Forensic Science. Offered spring semester every year.

BIMS 3401 - Pathophysiology

4 sem. hrs. (4:0) This course is a study of the biological basis of human disease. It includes an investigation of inflammation, immunity, and neoplasia, as well as the more common presenting dysfunctions of body systems. Offered every fall.Offered fall semester every year. Prerequisites: CHEM 1411 - General Chemistry I* and either BIOL 1407 - Biology II or BIOL 2401 - Anatomy and Physiology I. Offered fall semester every year.

BIMS 3403 - Molecular Biology

4 sem. hrs. (3:3) Principles of molecular biology including advanced concepts of gene structure, expression and regulation, chromatin structure, recombination, and current molecular biology techniques. Laboratory emphasis is on basic skills for nucleic acid analyses, including extraction, PCR amplification, quantification, restriction, and electrophoresis. DNA sequencing-based approaches are covered including bioinformatics for sequence comparisons, polymorphisms, and molecular identification. Cross listed with BIOL 3403. Prerequisites: BIOL 2416 - Genetics and BIOL 2421 - Microbiology. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIMS 4111 - Contemporary Scientific Readings^

1 sem. hrs. (1:0) Students read one non-fiction book per month addressing some aspect of medicine, science or history (four books per semester), then meet once per month to discuss, analyze and defend their perceptions about the book. Only open to students accepted into the Partnership for Primary Care and the Joint Admissions Medical Program (JAMP), those who are seeking admission into JAMP by participating in the pre-JAMP and students in other sponsored programs. This course may be repeated once for full credit in subsequent semesters. Offered on sufficient demand.

BIMS 4128 - Medicolegal Death Investigations Practicum

1 sem. hrs. This practicum course is designed to provide laboratory and practical experience for the investigation of deaths under the jurisdiction of Texas medical Examiners. This course may involve visits to the office of medical examiners and actual sites of deaths. Corequisites: BIMS 4328 - Medicolegal Death Investigations Lecture and SMTE 0092 - Biomedical Laboratory Safety Seminar.

BIMS 4170 - Biomedical Seminar^

1 sem. hrs. (1:0) A series of seminars on current topics of biomedical research. This course may be repeated once for full credit in subsequent semesters. Prerequisite: BIOL 1407 - Biology II. Offered on sufficient demand.

BIMS 4295 - Biomedical Practicum^

2 sem. hrs. Supervised learning experience with a community professional in health care (e.g., physician, dentist, veterinarian, chiropractor, pharmacist, physician assistant or physical therapist). On-campus meetings, oral and written reports are required. (Cannot be taken by Clinical Laboratory Science students in lieu of CLSC 4297 - Professional

Practicum I.) Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. This course may be repeated once for full credit in subsequent semesters. Requires permission of instructor. Offered fall and spring semesters every year.

BIMS 4296 - Clinical Research

2 sem. hrs. Students will actively perform clinical research and learn from and interact with health care professionals such as physicians, nurses, physical therapists, pharmacists, etc. The student will be a functioning member of a research team with specific, measurable responsibilities in clinical studies. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. This course may be repeated once for full credit in subsequent semesters. Requires permission of instructor. Offered spring semester every year.

BIMS 4299 - Directed Independent Research

1-2 sem. hrs. (0:1-2) Independent laboratory- or field-based research project on topic of current interest. Project developed and funded in conjunction with a faculty advisor. Written report required. Prerequisites: Junior class standing, BIOL 1407 - Biology II and CHEM 1412 - General Chemistry II, and consent of instructor. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. May be repeated for a maximum of 4 semester credit hours. Offered any semester upon request by a student and consent of the instructor.

BIMS 4311 - Biology of Cancer^

3 sem. hrs. This course is a study of the profile of a cancer cell, and the various causes of human cancer. Contribution of heredity, environmental factors, and infectious agents to oncogenesis will be studied. Cancer screening, diagnosis, and treatment will be discussed. Various types of cancer will be presented. Prerequisite: BIOL 2416 - Genetics. (BIOL 3410 - Cell Biology is strongly recommended.) Offered fall semester of even-numbered years.

BIMS 4323 - Neurobiology

3 sem. hrs. (3:0) Studies the anatomy and physiology of the nervous system. Includes an examination of evolutionary trends in nervous system development, neural function,

nerve impulse transmission, sensory and motor systems, behavior, emotional states, learning and memory. Particular emphasis is placed on human functioning. Prerequisite: BIOL 2416 - Genetics. Offered spring semester every year.

BIMS 4327 - Introduction to Toxicology

3 sem. hrs. (3:0) Principles of toxicology including absorption and excretion, biotransformation, chemical carcinogenesis, developmental toxicology and toxic agents. Prerequisites: BIOL 1407 - Biology II and CHEM 1412 - General Chemistry II. Offered summer semester every year.

BIMS 4328 - Medicolegal Death Investigations Lecture

3 sem. hrs. This course is designed to provide an introduction to the essential procedures of forensic death investigation. Students are instructed in the process of investigating all aspects of a death case falling under the jurisdiction of medical examiners in Texas. The importance of scene management and documentation, case file management, review of physical and psychological evidence, autopsy procedures, and consultation with other forensic science experts leading to the correct classification of cause and manner of death are emphasized. Corequisites: BIMS 4128 - Medicolegal Death Investigations Practicum and SMTE 0092 - Biomedical Laboratory Safety Seminar. Offered spring semester every year.

BIMS 4330 - Biological Basis of Aging^

3 sem. hrs. (3:0) Molecular aspects of aging and disease, including biological mechanisms and theories involving cells, tissues, and organ systems. Prerequisites: BIOL 1407 - Biology II and CHEM 3411 - Organic Chemistry I. Offered on sufficient demand.

BIMS 4331 - Health Disparities

3 sem. hrs. (3:0) This course will examine the social/societal, physical/environmental, biological, and genetic/epigenetic factors that are fundamental in creating disparities in health in America. This course will also focus on the formulation and implementation of public policy objectives to reduce and ultimately eliminate health disparities. Prerequisite: BIOL 1407 - Biology II. Offered fall and spring semesters every year.

BIMS 4333 - Medical Entomology

3 sem. hrs. (3:0) An introduction to arthropods of medical and veterinary importance with particular emphasis on the critical roles that they play in their host group's health and well-being. Prerequisite: BIOL 1407 - Biology II. Offered on sufficient demand.

BIMS 4334 - Human Genetics

3 sem. hrs. (3:0) Introduction to the genetic aspects of health and disease. Classic Mendelian and chromosomal disorders are examined as well as the relationship of genetic predisposition to the healthy state and to diseases/conditions. Prerequisites: BIOL 2416 - Genetics and CHEM 3412 - Organic Chemistry II. Offered on sufficient demand.

BIMS 4335 - Endocrinology^

3 sem. hrs. (3:0) Basic biochemical and molecular aspects of hormone physiology, basic endocrine function and hormone action, immune-endocrine interactions, and clinical examples of the outcomes of abnormal function in human disease. Prerequisites:UNIV 1101 First-Year Seminar I* & UNIV 1102 First-Year Seminar II* or BIMS 2200 - Professional Skills or BIOL 2416 - Genetics, and CHEM 3412 - Organic Chemistry II. Offered fall semester of odd-numbered years.

BIMS 4340 - Forensic Science in Criminal Law

3 sem. hrs. (3:0) Students will learn legal procedures, rules of evidence, and applications of forensic science in the area of criminal law. Students will also develop skills in report writing and testifying in court. Prerequisite: BIMS 3320 - Survey of Forensic Science. Offered spring semester every year.

BIMS 4374 - Medical Microbiology

3 sem. hrs. (3:0) Study of common human pathogenic organisms. Includes bacterial, parasitic, viral and fungal infections with emphasis on pathogenesis and treatment. Prerequisite: BIOL 2421 - Microbiology. Offered fall semester every year.

BIMS 4375 - Mechanisms of Microbial Pathogenesis^

3 sem. hrs. (3:0) Studies of how microorganisms invade the host and produce pathological symptoms associated with diseases. Emphasis is on the interaction between various host cells and pathogens, especially molecular mechanisms of pathogenesis and host immune responses. Prerequisite: BIOL 2421 - Microbiology. Offered summer semester of even-numbered years.

BIMS 4395 - Forensic Science Internship

3 sem. hrs. This course is designed to bridge the gap between academic instructions and the forensic science industry by providing real world experience in forensic investigations. Students attend lectures on campus, plus spend five hours/week at a crime laboratory. Students will accompany crime scene investigators to actual crime scenes and participate in several hands on forensic exercises involving mock as well as real investigations. Some activities may result in students spending more that five hours of laboratory or practicum time. Prerequisite or Corequisite: BIMS 3320 - Survey of Forensic Science. Corequisite: SMTE 0092 (Biomedical Safety Seminar); successful completion is required for continued participation in the course. Offered fall semester every year.

BIMS 4396 - Directed Independent Study

1-3 sem. hrs. (1-3:0) Research in areas of current interest. Written report required. Prerequisites: BIOL 1407 - Biology II, CHEM 1412 - General Chemistry II, and consent of instructor. May be repeated for a maximum of 6 semester hours credit. Offered any semester upon request by a student and consent of the instructor.

BIMS 4406 - Immunology

4 sem. hrs. (3:3) An overview of immunology with emphasis on current knowledge of the immune system. Detailed examination of the specific cells, cytokines, antibodies, and molecules that comprise the immune system. Laboratory exercises demonstrate the basic principles and techniques used in immunologic studies. Cross listed with BIOL 4406. Prerequisite: BIOL 2421 - Microbiology (BIOL 3345 - Cell Physiology or BIOL 3410 - Cell Biology is recommended). Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIMS 4410 - Histology

4 sem. hrs. (3:3) The study of cells and tissues, especially the manner in which they are organized to form organs and systems. Laboratories involve intensive use of the microscope to identify cells, tissues and organs. Prerequisite: BIOL 2402 - Anatomy and Physiology II or BIOL 3425 - Functional Anatomy. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester of even-numbered years.

BIMS 4590 - Selected Topics^

1-5 sem. hrs. (1:0-3:4) Variable content. May be repeated for credit. Prerequisite: Consent of the instructor. Corequisite: When laboratory hours are included, safety training given in SMTE 0091 - Biological Laboratory Safety Seminar, SMTE 0092 - Biomedical Laboratory Safety Seminar, or SMTE 0093 - Chemistry Laboratory Safety Seminar is required for continued participation in this course. May be offered any semester: students should consult the online course schedule.

Biology

BIMS 4085 - Major Field Test in Biology

0 sem. hrs. (0:0) The Major Field Test (MFT) in Biology is a national examination given in the Fall and Spring semesters only. It is a graduation requirement for all Biology and some Biomedical Sciences students. Students enroll in this course during the semester that they plan to take the MFT. There is no cost to the student for either this course or for the MFT. Admission is limited to students who have completed 90 or more semester credit hours. Offered fall and spring semesters every year.

BIOL 1308 - Science for Life I (Non-Majors Biology)

3 sem. hrs. (2:2) A non-majors science course in which students will learn basic biological principles, identify the relevance of science in everyday life, and will understand the scientific method. Hands-on lab activities will reinforce course concepts. This course does not substitute for BIOL 1406 - Biology I or BIOL 1407 - Biology II for science majors. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 1308 Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Offered fall, spring and summer semesters every year.

BIOL 1406 - Biology I

4 sem. hrs. (3:2) Presentation of basic biological concepts including scientific method, cytology, energetics, nucleic acids and genetics. This course is suitable for all majors.

Placement: Students may place into BIOL 1406 in any one of the following ways: (i) completion of a precalculus or calculus course in high school; or (ii) completion of any of the following courses: MATH 1314, MATH 1316, MATH 2305 or MATH 2413; or (iii) test scores sufficient to be placed into a Level IV or higher course by the Math

Department, see http://sci.tamucc.edu/departments/math-and-statistics/placement.html for details.

Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 1406.

Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Offered fall, spring and summer semesters every year.

BIOL 1407 - Biology II

4 sem. hrs. (3:2) This course is an overview of the major concepts in biological diversity and plant and animal biology. Laboratory work will include individual/team activities as well as technology-related assignments. Prerequisite: BIOL 1406 - Biology I. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 1407 Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Offered fall, spring and summer semesters every year.

BIOL 2300 - Science Communication

3 sem. hrs. This course involves presentation and discussion of selected topics relating to the professional skills of practicing biological scientists, including basic software instruction, a review of library services pertinent to science, the application of scientific literature research skills, hypothesis generation and statistical tests, critical reviews of scientific articles, and an introduction to ethical issues in science. Offered Fall and Spring.

BIOL 2371 - Principles of Evolution

3 sem. hrs. (3:0) An overview of the mechanisms by which heritable information changes, adaptations develop, and species diversify. Provides a foundation for molecular, cellular, and organismal studies in the biological sciences. Prerequisite: BIOL 1407 - Biology II. Corequisite: SMTE 0091 - Biological Laboratory Safety Seminar Offered fall, spring and summer semesters every year.

BIOL 2401 - Anatomy and Physiology I

4 sem. hrs. (3:2) Structure and function of the human body emphasizing biological chemistry, cell biology, tissues, and the integumentary, skeletal, muscular, and nervous systems. Not recommended for majors in the College of Science and Engineering. To count this course toward a major in the Department of Life Sciences, a student must demonstrate that it is required by professional schools in his or her career track and obtain approval for a substitution from his or her faculty mentor. Students may not receive credit for both this course and either BIOL 3425 - Functional Anatomy or BIOL 3430 - Physiology. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 2401 Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Not recommended for Biology or Biomedical Sciences majors. Offered fall, spring and summer semesters every year.

BIOL 2402 - Anatomy and Physiology II

4 sem. hrs. (3:2) Structure and function of the human body emphasizing blood, growth, development, genetics, and the endocrine, digestive, respiratory, cardiovascular, lymphatic, immune and urogenital systems. Not recommended for majors in the College of Science and Engineering. To count this course toward a major in the Department of Life Sciences, a student must demonstrate that is is required by professional schools in his or her career track and obtain approval for a substitution from his or her faculty mentor. Students may not receive credit for both this course and either BIOL 3425 - Functional Anatomy or BIOL 3430 - Physiology. Prerequisite: BIOL 2401 - Anatomy and Physiology I. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 2402 Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Not recommended for Biology or Biomedical Sciences majors. Offered fall, spring and summer semesters every year.

BIOL 2416 - Genetics

4 sem. hrs. (3:0:3) Principles of genetic transmissions and molecular basis of heredity and variation. Weekly recitation periods will involve team assignments, problem solving activities, and seminars. Prerequisites: BIOL 1406 - Biology I with a grade of "C" or above, BIOL 1407 - Biology II, CHEM 1411 - General Chemistry I*, and CHEM 1412 - General Chemistry II. TCCNS Equivalent: BIOL 2416 Offered fall, spring and summer semesters every year.

BIOL 2420 - Principles of Microbiology

4 sem. hrs. (3:2) Introduction to microorganisms with emphasis on those of importance in patient care. Principles of disinfection, sterilization, immunity. This class is intended for nursing majors; it cannot substitute for BIOL 2421 - Microbiology. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 2420 Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.Offered fall and spring semesters every year.

BIOL 2421 - Microbiology

4 sem. hrs. (3:3) An introduction to microorganisms including the bacteria, fungi, and viruses. Laboratory involves microbiological techniques and development of basic laboratory skills. Prerequisites: BIOL 1406 - Biology I with a grade of "C" or above, BIOL 1407 - Biology II, CHEM 1411 - General Chemistry I*, CHEM 1412 - General Chemistry II, or permission of instructor. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. TCCNS Equivalent: BIOL 2421 Offered fall and spring semesters every year.

BIOL 2472 - Principles of Botany^

4 sem. hrs. (3:3) Introduction to the structure, function, diversity and application of plants. Laboratory focus on anatomical features, physiological adaptations, classification, and life cycles. Prerequisites: BIOL 1407 - Biology II and CHEM 1411 - General Chemistry I*, or consent of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester of odd-numbered years.

BIOL 3300 - Animal Nutrition

3 sem. hrs. (3:0) Examines the dietary requirements of both companion animals and livestock. Includes the anatomy, physiology and biochemistry of the gastrointestinal system, nutrient procurement and use, feed additives, growth stimulants, metabolic diseases, and diet therapy. Cross listed with BIMS 3300. Prerequisites: BIOL 1407 - Biology II and CHEM 3411 - Organic Chemistry I. Prerequisite or corequisite: CHEM 3412 - Organic Chemistry II. Offered spring semester every year.

BIOL 3325 - Biostatistics

3 sem. hrs. The application of statistical analyses to biological data. Students will gain an understanding of how to apply statistical analyses to biological data through study of the principles of experimental design including how to frame informative research questions. At a fundamental level, these concepts are linked to the philosophy of science and our understanding of the way the world works. Offered during the spring semester

BIOL 3345 - Cell Physiology

3 sem. hrs. (3:0) Emphasis on cellular functions that underlie physiological processes, transport across membranes, membrane potential and excitability, the cell nucleus, and organelles and their relationship to energy, metabolism, and transport mechanisms within the cell. Offered during Spring semester of odd-numbered years. Prerequisites: BIOL 2421 Microbiology and BIOL 2416 Genetics OR permission of instructor. BIOL 3410 - Cell Biology, CHEM 4401 Biochemistry I, and CHEM 4402 Biochemistry II recommended.

BIOL 3403 - Molecular Biology

4 sem. hrs. (3:3) Principles of molecular biology including advanced concepts of gene structure, expression and regulation, chromatin structure, recombination, and current molecular biology techniques. Laboratory emphasis is on basic skills for nucleic acid analyses, including extraction, PCR amplification, quantification, restriction, and electrophoresis. DNA sequencing-based approaches are covered including bioinformatics for sequence comparisons, polymorphisms, and molecular identification. Cross listed with BIMS 3403. Prerequisites: BIOL 2416 - Genetics and BIOL 2421 - Microbiology. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 3410 - Cell Biology

4 sem. hrs. (3:3) Study of cellular architecture and function. Topics include membranes, transport, organelles, cytoskeleton, and signaling mechanisms. Interrelationships of structure, function, energy and metabolism are explored. Laboratory will emphasize basic techniques of cell biology. Prerequisites: BIOL 2416 - Genetics and CHEM 3411 - Organic Chemistry I. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 3413 - Invertebrate Zoology

4 sem. hrs. (3:3) Structure, life history, and evolution of the invertebrates with special emphasis on the phylogeny and ecological relationships of the major phyla. Laboratory will involve field trips and survey collections. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 3414 - Vertebrate Zoology

4 sem. hrs. (3:3) Structure, life history, and evolution of the vertebrates with special emphasis on the phylogeny and ecological relationships of the classes. Laboratory will involve field trips and survey collections. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 3425 - Functional Anatomy

4 sem. hrs. (3:3) General trends in morphological development and adaptation as demonstrated by the anatomy and embryology of living and extinct chordates. Students may not receive credit for both this course and either BIOL 2401 - Anatomy and Physiology I or BIOL 2402 - Anatomy and Physiology II. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 3428 - Principles of Ecology

4 sem. hrs. (3:3) Introduction to the interrelationships of organisms and their environment. Population structure, community classification and regulation, and energy flow in ecosystems will also be covered. Laboratory sections will focus on experimental design and field techniques in ecology. Prerequisites: BIOL 1407 - Biology II; and BIOL 2200 - Professional Skills or BIMS 2200 - Professional Skills, or UNIV 1101 - First-Year Seminar I* and UNIV 1102 - First-Year Seminar II*; and CHEM 1411 - General Chemistry I*. Prerequisite or Corequisite: MATH 2413 - Calculus I. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall and spring semesters every year.

BIOL 3430 - Physiology

4 sem. hrs. (3:3) The study of physiological processes that are the product of complex interactions between tissues, organs and organ systems, with emphasis on the circulatory, respiratory, endocrine, muscular, digestive, and urogenital systems. Particular focus on homeostasis, and the role of the environment and evolution on organ systems. Students may not receive credit for both this course and either BIOL 2401 - Anatomy and Physiology I, or BIOL 2402 - Anatomy and Physiology II. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 3455 - Plant form and Function

4 sem. hrs. (3:2) Anatomy of vegetative and reproductive organs of plants, unique cellular features, development and differentiation of cell and tissue types. Emphasis on physiological mechanisms of response and adaptation to the environment. Prerequisite: BIOL 1407 - Biology II, or consent of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester of even-numbered years.

BIOL 3479 - Plant Ecology

4 sem. hrs. (3:3) Structure, physiology, life cycles, and economic impact of plants. Factors influencing diversity, succession and ecological distribution of plants. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester of odd-numbered years.

BIOL 4100 - Research Ethics and Professionalism

1 sem. hrs. (1:0) A course designed to enhance the professionalism of undergraduate researchers. This course discusses the codified aspects of research ethics, including fabrication, falsification and plagiarism of data; assigning authorship, submitting manuscripts to more than one journal and management of lab teams. It also addresses careers in science, resume writing, producing the successful application and interviewing skills. Permission of instructor required. Offered on sufficient demand.

BIOL 4301 - Embryology

3 sem. hrs. (3:0) Studies the events that occur just prior to and during gestation. Includes gametogenesis, chromosomal and single gene aberrations, teratology, and the

development of the body systems. Prerequisite: BIOL 2416 - Genetics. Offered fall semester every year.

BIOL 4302 - Coral Reef Conservation

3 sem. hrs. 3:0 Survey of challenges and threats facing coral reef ecosystems in the 21st century and discussion of conservation and management strategies. Topics include biology and ecology of reef ecosystems, climate change impacts, coaral bleaching, over-fishing and the effectivness and design of marine protected areas. Prerequisite: BIOL 3428 - Principles of Ecology. Offered fall semester every year.

BIOL 4304 - Biology of Viruses

3 sem. hrs. (3:0) Introduction to the study of viruses, including viral life cycles, replication schemes and Baltimore classification of representative bacteriophages, plant and animal viruses. Emphasis on analysis and review of primary literature on viruses. Prerequisites: BIOL 2416 - Genetics, BIOL 2421 - Microbiology and CHEM 1411 - General Chemistry I*. Offered spring semester of odd-numbered years.

BIOL 4308 - Biogeography

3 sem. hrs. This course offers an overview of the theories, methods, and current directions in modern biogeography, emphasizing marine and terrestrial plant and animal species and communities. Juniors or Seniors only, or consent of instructor. Offered spring semester of odd-numbered years.

BIOL 4311 - Biological Bases of Behavior

3 sem. hrs. (3:0) This lecture-based course examines the processes by which neuronal circuits generate behaviors and the mechanisms by which experience modulates the activity of these circuits. Prerequisite: BIMS 4323 - Neurobiology, or permission of the instructor. Offered fall semester every year.

BIOL 4312 - Mariculture Techniques

3 sem. hrs. The study and hands-on application of biological, mechanical, and other concepts required to develop the skills and techniques necessary for efficient operation and management of public and private aquaculture facilities. Offered in Fall of odd-numbered years. Prerequisite: Juniors or Seniors only. BIOL 4370 Mariculture recommended.

BIOL 4319 - Biology of Marine Mammals

3 sem. hrs. (3:0) Introduction to marine mammals, with a focus on their interactions with their biotic and abiotic environment Prerequisites: BIOL 2401 and BIOL 2402 OR BIOL 3425; BIOL 3425, BIOL 3428, or consent of instructor. Offered fall semester every year.

BIOL 4323 - Global Change Ecology

3 sem. hrs. (3:0) An introduction to the effects of climatic and anthropogenic change on terrestrial and aquatic structure and function. Includes readings from the current literature and discussion of controversial articles. Prerequisite: BIOL 3428 - Principles of Ecology. Offered spring semester every year.

BIOL 4328 - Fisheries

3 sem. hrs. (3:0) A study of theory and techniques in fisheries science, including practical fisheries sampling designs and techniques, behavior of fisheries populations and application to resource management with emphasis in tide-influenced waters. Includes readings in the current literature. Prerequisite: BIOL 1407 - Biology II. Offered spring semester every year.

BIOL 4329 - Fisheries Techniques

3 sem. hrs. This class is designed to provide practical experience in the theory and application of traditional and modern fisheries sampling and analytical techniques used in Fisheries Science and Management. This is a hands-on field- and laboratory-based course that will develop skills that are most commonly used by fisheries biologists and technicians. Offered in Fall of even-numbered years. Prerequisite: Juniors or Seniors only; BIOL 4328 Fisheries recommended.

BIOL 4334 - Biology and Ecology of Coral Reefs

3 sem. hrs. This course will introduce the biology of corals, describe the abiotic and biotic interactions among coral reef ecosystem inhabitants, identify the threats of climate change, and discuss the conservation and management of reefs for the future. Offered every spring. Prerequisite: BIOL 3428 Principles of Ecology.

BIOL 4335 - Conservation Biology

3 sem. hrs. Principles and theories relating to the conservation of biological diversity, including patterns and processes creating biological diversity, estimates of extinction rates, consequences of losses of biodiversity and causes of diversity loss. Prerequisite: BIOL 3428 - Principles of Ecology. Offered fall semester every year

BIOL 4336 - Marine Ecology

3 sem. hrs. (3:3) Habitats and community structure in marine environments; biotic and abiotic factors governing the distribution of marine organisms. Prerequisite: BIOL 3428 - Principles of Ecology. Offered spring semester every year.

BIOL 4340 - Genomics, Proteomics and Bioinformatics

3 sem. hrs. (3:0) An introduction to integrative biological study using genome-wide approaches and bioinformatics. The "-omics" technologies (Genomics, Proteomics, Metabolomics, etc.) will be surveyed for current and potential contributions to understanding biological function at molecular, cellular, organismal and ecosystem levels. Prerequisites: BIOL 2416 - Genetics and either BIOL 3410 - Cell Biology or CHEM 4401 - Biochemistry I. Offered fall semester every year.

BIOL 4343 - Oceans and Human Health

3 sem. hrs. Healthy oceans are essential to the habitability of our planet – for humans and all other forms of life. Students will explore links between oceans, pollution, human well-being, ecosystem services, resource management, and the science and legislation governing the enforcement of water quality standards. Juniors or Seniors only. Offered in fall of odd-numbered years.

BIOL 4350 - Research and Design

3 sem. hrs. (3:0) Course will include experimental design, literature review of a research topic and laboratory work on the research topic. Prerequisite: Consent of instructor. Offered on sufficient demand.

BIOL 4353 - Down the River: Biology of Gulf Coast Fishes

3 sem. hrs. This course covers aspects of ecology and biogeography of riverine and estuarine fishes while exposing students to field sampling techniques and museum preparation of specimens. This will be a unique opportunity for students to gain an in-depth understanding of the biological complexity of Texas Gulf Coast river systems while gaining hands-on experience in field and museum ichthyological techniques that are employed by state, federal and academic researchers alike. Consent of instructor is required to take the course. Students who wish to take the course should have a strong background in zoology. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered during Maymester every year.

BIOL 4355 - Public Aquarium and Animal Care Operations

3 sem. hrs. This course examines the unique requirements needed for public aquariums and zoos to balance animal care and health with public display for general education and conservation research. Juniors or Seniors only or permission of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course even though no laboratory is scheduled because students will interact with systems containing live animals. Classes will be held at off-campus animal care facilities. Offered during summer every year.

BIOL 4370 - Mariculture

3 sem. hrs. (3:0) Survey of the physiological, behavioral, environmental, and economic parameters governing the culture of selected aquatic species. Included are techniques employed worldwide to produce aquatic products. Prerequisite: BIOL 1407 - Biology II, or consent of instructor. Offered fall semester every year.

BIOL 4371 - Population Genetics

3 sem. hrs. (3:0) An introduction to evolutionary processes and their genetic basis, this course focuses on theoretical and experimental approaches to the study of population genetics, quantitative genetics, evolutionary ecology, and molecular evolution. Prerequisites: BIOL 2416 - Genetics and MATH 2413 - Calculus I, or permission of instructor. Offered fall semester of even-numbered years.

BIOL 4396 - Directed Independent Study

1-3 sem. hrs. (1-3:0) Research in areas of current interest. Written report required. May be repeated for a maximum of 6 semester hours. Prerequisites: BIOL 1407 - Biology II, and CHEM 1412 - General Chemistry II, and consent of instructor. Offered any semester upon request by a student and consent of the instructor.

BIOL 4399 - Directed Independent Research

3-6 sem. hrs. Independent laboratory- or field-based research project on topic of current interest. Project developed in conjunction with a faculty advisor. Written report required. May be repeated once for a total of 6 semester credit hours Prerequisites: Juniors or Seniors only and consent of faculty advisor Offered any semester upon request by a student and consent of the faculty advisor

BIOL 4405 - Limnology

4 sem. hrs. (3:3) The study of the functional relationships and productivity of aquatic communities as they are affected by their physical, chemical, and biotic environment. The influence of man's activities on these systems will be the focus of the course. Prerequisite: BIOL 3428 - Principles of Ecology. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of odd-numbered years.

BIOL 4406 - Immunology

4 sem. hrs. (3:3) An overview of immunology with emphasis on current knowledge of the immune system. Detailed examination of the specific cells, cytokines, antibodies, and molecules that comprise the immune system. Laboratory exercises demonstrate the basic principles and techniques used in immunologic studies. Cross listed with BIMS 4406. Prerequisite: BIOL 2421 - Microbiology. (BIOL 3410 - Cell Biology or BIOL 3345 - Cell Physiology recommended.) Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 4408 - Microbial Diversity and Ecology

4 sem. hrs. (3:3) Biodiversity and roles of microorganisms in natural environments. Interactions with other micro- and macro-organisms (humans, animals and plants) and with abiotic factors. Unique abilities of microorganisms such as nitrogen fixation and adaptation to extreme environments. Prerequisite: BIOL 2421 - Microbiology. Prerequisite or Corequisite: BIOL 4328 or consent of instructor. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 4410 - Mammalogy

4 sem. hrs. (3:3) Systematics and ecology of mammals. Prerequisite: BIOL 1407 - Biology II; (BIOL 3414 - Vertebrate Zoology is also recommended). Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of even-numbered years.

BIOL 4411 - Animal Behavior

4 sem. hrs. (3:3) An understanding of why animals behave in the manner they do, through examination of both invertebrate and vertebrate species. Prerequisite: BIOL 1407 Biology II, and Junior standing. Corequisite: Safety training given in SMTE 0091

Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 4413 - Entomology

4 sem. hrs. (3:3) A broad overview of the natural history, classification, phylogeny, ecology, behavior, development and physiology of insects and their kin. The lab will involve field work, collection and curation. Prerequisite: BIOL 3413 Invertebrate Zoology or consent of instructor. Corequisite: Safety training given in SMTE 0091 Biological Laboratory Safety Seminar is required for continued participation in this course. Offered on sufficient demand.

BIOL 4417 - Field Biology

4 sem. hrs. (1:6) Field Biology is a hands-on course designed to teach students key concepts by immersing them in nature. Topics include adaptations of plants and animals in different habitats, food web interactions, and how biotic and abiotic forces interact to structure natural communities including spatial and temporal variation in communities. Prerequisite: BIOL 3428 - Principles of Ecology. Corequisite: Safety training given in SMTE 0091 Biological Laboratory Safety Seminar is required for continued participation in this course. Offered summer semester (Maymester) every year.

BIOL 4422 - Plant Taxonomy

4 sem. hrs. (3:3) Principles and practice in the classification of flowering plants. Field trips are required. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 4425 - Ornithology

4 sem. hrs. (3:3) Systematics, anatomy, physiology, ecology, behavior, and field identification of birds. Prerequisite: BIOL 1407 - Biology II; (BIOL 3414 - Vertebrate Zoology is also recommended). Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of odd-numbered years.

BIOL 4429 - Marine Botany

4 sem. hrs. (3:3) The ecology of marine plants with emphasis on identification, life histories, and environmental factors of distribution. Prerequisite: BIOL 1407 - Biology II. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety

Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 4430 - Marine Plankton

4 sem. hrs. In this class we will investigate the systematics, distribution, and ecology of major marine plankton groups and introduce major concepts in biological oceanography. Offered in Spring of odd-numbered years.

BIOL 4432 - Ichthyology

4 sem. hrs. (3:3) Systematics, evolution, biology, and ecology of fishes. Laboratory identification of marine and freshwater fishes collected during field excursions. Prerequisite: BIOL 1407 - Biology II; (BIOL 3414 - Vertebrate Zoology is also recommended). Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

BIOL 4433 - Parasitology

4 sem. hrs. (3:3) An introduction to parasitology with emphasis on internal parasites and appropriate references to human endoparasites and parasites of veterinary importance. Prerequisite: BIOL 2421 - Microbiology, or consent of instructor. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 4435 - Biological Microtechniques

4 sem. hrs. (2:4) Theory and techniques of processing specimens for histochemistry and microscopic examination. Laboratory includes preparation of tissues and small specimens for analysis and display. Prerequisites: BIOL 1407 - Biology II and CHEM 3411 - Organic Chemistry I. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered summer semester of even-numbered years.

BIOL 4442 - Herpetology

4 sem. hrs. (3:3) Systematics, ecology, and behavior of amphibians and reptiles. Prerequisite: BIOL 1407 - Biology II; (BIOL 3414 - Vertebrate Zoology is also recommended). Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course.

BIOL 4444 - Estuarine Organisms

4 sem. hrs. (3:3) Systematics, distribution, and ecology of estuarine macrofauna and macroflora. Weekend field trips and individual study required. Prerequisite: BIOL 3413 - Invertebrate Zoology. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

BIOL 4446 - Tropical Ecosystems & Conservation

4 sem. hrs. (3:3) Survey of the ecology and conservation issues of the major ecosystems in the tropics and field techniques used to study tropical forest ecology. Prerequisite: BIOL 3428 - Principles of Ecology or permission of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of even-numbered years.

BIOL 4452 - Ecology and Evolution of Fishes

4 sem. hrs. This course covers aspects of fish ecology from individual, population, community, and ecosystem levels. We discuss the role of the environment on fish physiology and behavior, food-web dynamics, community assembly and diversity, ecosystem interactions, and anthropogenic impacts on fishes with a focus on conservation. Prerequisite: BIOL 4432 - Ichthyology or consent of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Field trips and laboratory studies required. Offered every spring semester

BIOL 4547 - Marine Science Field Camp

5 sem. hrs. Students learn techniques required to properly conduct marine science field research. Practical, hands-on experience is gained in a variety of topics including biotic and abiotic sample collection and processing, quantitative analysis of field data, evaluation of environmental factors, survival and distribution of living organisms, and the structure of biotic communities. Juniors or seniors only. Consent of the instructor is required to register for the course. Offered during Maymester every year.

BIOL 4590 - Selected Topics^

1-5 sem. hrs. (1:0-3:4) Variable content. May be repeated for credit. Prerequisite: Consent of the instructor. Corequisite: When laboratory hours are included, safety training given in SMTE 0091 - Biological Laboratory Safety Seminar, SMTE 0092 - Biomedical Laboratory Safety Seminar, or SMTE 0093 - Chemistry Laboratory Safety

Seminar is required for continued participation in this course. May be offered any semester: students should consult the online course schedule.

BIOL 4598 - Biology Internship

2-6 sem. hrs. Two to six semester credit hours may be earned by working in an internship position in a governmental agency, private industry, or other appropriate venue. Juniors or Seniors only; requires consent of faculty member who will oversee/administer the internship.

BIOL 4609 - Field and Sampling Techniques

6 sem. hrs. (3:9) The study of techniques required for proper field work in the biological sciences. The course includes ecological sampling methods, safety, logistics, equipment operation and maintenance and travel concerns. Prerequisite: consent of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered summer semester every year.

Business Law

BLAW 3310 - Legal Environment of Business*

3 sem. hrs. An introduction to the legal systems of government, business and society. Includes coverage of ethics, the judicial process, basics of contracts law, constitutional issues, business torts and crimes, creditor/debtor relationships, business organizations, international law, environmental law, and various aspects of regulation of business. Prerequisite: BUSI 0011.

BLAW 3320 - Law for Personal Business

3 sem. hrs. A study of the laws that influence each individual in the conduct of personal life and business affairs. Includes such topics as the court and legal system, family law, torts, property law, insurance, wills and trusts, contracts, and other areas of current interest. Prerequisite: Junior standing or above.

BLAW 4342 - Law for Professional Certification

3 sem. hrs. Designed as a second course in business law for students who desire a more in-depth knowledge. Individuals planning to take professional certification exams that contain a business law component are encouraged to enroll in this course. Prerequisites: BLAW 3310 (or permission of instructor) and Junior standing or above.

BLAW 4350 - Human Resource Law

3 sem. hrs. A study of the laws relating to human resource management in today's business environment. Covers discrimination, labor law, retirement regulations, safety issues and employee/management topics. Emphasis on current issues, cases and legislation. May be used as a management major elective or business elective. Prerequisite: Junior standing or above.

BLAW 4390 - Current Topics in Business Law

1-3 sem. hrs. Selected topics for special study related to laws impacting business, organizations and human resources. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

BLAW 4396 - Directed Individual Study

1-3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

Business Administration

BUSI 0011 - COB Student Code of Ethics and Plagiarism*

0 sem. hrs. The emphasis of this non-credit, web-based course is educational. It covers the provisions in the COB Student Code of Ethics and covers information related to the issue of plagiarism. It prepares business majors to successfully complete an online test to meet a requirement for graduation. Prerequisites: students must have officially declared a major offered by the College of Business. BUSI 0011 is CR/NC.

BUSI 0088 - Graduation Requirements Review

0 sem. hrs. The purpose of this non-credit, web-based course is educational. This no cost course provides important information to prepare students for a successful progression toward graduation. Co-requisite: MGMT 3310. BUSI 0088 is a CR/NC.

BUSI 1310 - Introduction to the Business Environment

3 sem. hrs. An overview of the nature of business and its environment. Emphasizes the dynamic role of business in everyday life and its importance to society.

Not open to Juniors or Seniors majoring in business. TCCNS Equivalent: BUSI 1301

BUSI 4310 - International Business

3 sem. hrs. An understanding of international business including its importance in today's world, the evolution of international institutions and the monetary system, the differences and similarities among nations and cultures, and the special characteristics of the business functions in a global setting. Prerequisite: Junior standing or above.

Chemistry

CHEM 1305 - Introductory Chemistry*

3 sem. hrs. (3:0) A one-semester principles course for students in non-science related majors covering the major concepts of chemistry (atomic structure, bonding, stoichiometry, elementary thermodynamics) and the role of chemistry in contemporary society (polymers, energy, pollution, etc.). Will not substitute for CHEM 1411. TCCNS Equivalent: CHEM 1305 This course counts toward the natural science component of the University Core Curriculum. Either CHEM 1305 or CHEM 1411, but not both, may be applied towards the core requirement. This course is offered in Fall, Spring and both Summer sessions. In addition, it is offered as a regular in-person course and an online course.

CHEM 1411 - General Chemistry I*

4 sem. hrs. (3:3) The foundation course in chemistry. Stoichiometry, chemical equilibria, atomic structure, chemical bonding, periodic properties, thermodynamics, chemical kinetics, and descriptive chemistry of the elements. Laboratory involves development of basic skills. This course counts toward the natural science component of the University Core Curriculum. Either CHEM 1305 - Introductory Chemistry or CHEM 1411, but not both, may be applied towards the core requirement. This course is offered in Fall, Spring and typically during both Summer sessions. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also not that since lecture and lab are linked you can not drop the lab without dropping the lecture as well. TCCNS Equivalent: CHEM 1411

CHEM 1412 - General Chemistry II

4 sem. hrs. (3:3) The continuation of CHEM 1411 - General Chemistry I*, the foundation course in chemistry with emphasis on quantitative aspects. Laboratory involves development of basic skills. This course counts toward the natural science component of the University Core Curriculum. Prerequisite: CHEM 1411 - General Chemistry I* and MATH 1314 - College Algebra or equivalent math competency. This course is offered in Fall, Spring and typically both Summer sessions. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well. TCCNS Equivalent: CHEM 1412

CHEM 2490 - Special Topics

1-4 sem. hrs. May be repeated for credit. Subject materials variable. Offered on sufficient demand.

CHEM 3411 - Organic Chemistry I

4 sem. hrs. (3:3) The structure, nomenclature, synthesis, reactions, and reaction mechanisms of the principal classes of organic compounds. Stereochemistry and spectroscopy of organic compounds. Laboratory involves separation and synthetic techniques and development of basic skills. This course is offered in Fall, Spring and typically during the Summer I session. Prerequisite: CHEM 1411 . NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well. This course is offered in Fall, Spring and typically during the Summer I session.

CHEM 3412 - Organic Chemistry II

4 sem. hrs. (3:3) A continuation of CHEM 3411 . The course concludes with a survey of the structures of biomolecules. Laboratory involves spectroscopy and qualitative analysis techniques. This course is offered in Fall, Spring and typically during the Summer II session. Prerequisite: CHEM 3411 NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 3417 - Quantitative Analysis

4 sem. hrs. (3:3) A course in quantitative analysis, which includes chemical statistics and the use of acid-base, complexation, precipitation, and redox reactions to perform analyses and separations. Laboratory includes standard volumetric and gravimetric methods and development of basic quantitative techniques. This course is typically offered in Spring. Prerequisite: CHEM 1412 . NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 3418 - Instrumental Analysis

4 sem. hrs. (3:3) An introduction to instrumental methods of analysis: spectroscopy, chromatography, and electrochemical methods. Laboratory involves use of instrumentation in chemical analysis. This course is typically offered in Fall and Spring. Prerequisite: CHEM 1412. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4085 - Major Field Test in Chemistry

0 sem. hrs. (0:0) The Major Field Test (MFT) in Chemistry is a national examination given in the Fall and Spring semesters only. It is a graduation requirement for all Chemistry students. Students enroll in this course during the semester that they plan to take the MFT. There is no cost to the student for either this course or for the MFT. Admission is limited to students who have completed 90 or more semester credit hours. This course is typically offered in Fall and Spring.

CHEM 4292 - Senior Chemistry Seminar

2 sem. hrs. (2:0) Presentation and discussion of selected topics in chemistry. Includes literature searches and reviews, paper presentations, survey of professional opportunities and requirements, career guidance and job searching skills. Prerequisite: senior standing or consent of instructor. This course is typically offered in Fall and Spring.

CHEM 4309 - Advanced Instrumental Analysis

3 sem. hrs. (3:0) An advanced course in analytical chemistry covering the underlying theories of instrumental methods. This course is typically offered on an irregular basis. Prerequisites: CHEM 3411, CHEM 3412, and CHEM 3418.

CHEM 4320 - Drugs, Toxins and Natural Products Chemistry

3 sem. hrs. (3:0) The chemistry and biological activity of pharmaceuticals, toxins and selected natural products. Examines how chemical structure relates to biological activity. Also examines action of antibiotics, chemotherapy agents, analgesics, steroids, and compounds targeting the central and peripheral nervous system. This course is typically offered in Fall and Spring. Prerequisite: CHEM 4401.

CHEM 4344 - Chemical Oceanography

3 sem. hrs. (3:0) The study of the oceans and seas as a chemical system, including interactions with both the biota and the solid earth. This course is typically offered in Spring. Prerequisite: CHEM 1412.

CHEM 4350 - Polymer Chemistry

3 sem. hrs. (3:0) An advanced lecture course in organic chemistry. Characterization of polymers. Polymerization mechanisms. Current research directions such as biomedical applications and electroactive polymers. This course is offered on an irregular basis. Prerequisite: CHEM 3412.

CHEM 4401 - Biochemistry I

4 sem. hrs. (3:3) The structure and function of carbohydrates, lipids, proteins, and nucleic acids. An introduction to enzyme kinetics, cell membrane structure and biochemical signaling. Laboratory exercises demonstrate the basic principles and techniques used in Biochemistry. This course is typically offered in Fall, Spring and Summer. Prerequisites: CHEM 3412 and one year of Biology. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4402 - Biochemistry II

4 sem. hrs. (3:3) A continuation of CHEM 4401 . Biochemical energetics, including glycolysis, fatty acid oxidation, amino acid oxidation, citric acid cycle, oxidative phosphorylation, photophosphorylation and photosynthesis. Carbohydrate, fatty acid and

amino acid biosynthesis. Laboratory is a continuation of biochemical techniques. This course is typically offered in Fall and Spring. Prerequisite: CHEM 4401 . NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4407 - Advanced Inorganic Chemistry

4 sem. hrs. (3:3) A survey of inorganic chemistry. Theories of atomic structure, covalent bonding, ionic solids, metallic solids, and coordination compounds. Modern acid-base concepts. Laboratory involves the synthesis of inorganic compounds. Prerequisite: CHEM 1412 . Safety training given during a laboratory meeting early in the semester is equired for continued participaiton in this course.

CHEM 4420 - Physical Biochemistry

4 sem. hrs. (3:3) A fundamental approach to the study of physical and chemical phenomena, including the study of thermodynamics, gases and phase equilibria. This course is typically offered on an irregular basis. Prerequisites: CHEM 1412 , PHYS 1402 or PHYS 2426 , MATH 2414 . NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4423 - Physical Chemistry I

4 sem. hrs. (3:3) A fundamental approach to the study of physical and chemical phenomena, including the study of thermodynamics, gases and phase equilibria. This course is typically offered in Fall. Prerequisites: CHEM 1412 ,PHYS 1402 or PHYS 2426 , MATH 2414. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4424 - Physical Chemistry II

4 sem. hrs. (3:3) A continuation of CHEM 4423 , including the study of chemical kinetics, electrochemistry, molecular structure, and quantum mechanics. This course is typically offered in Spring. Prerequisite: CHEM 4423. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4443 - Environmental Chemistry

4 sem. hrs. (3:3) A study of the impact of chemistry on the environment, including topics of air pollution, water pollution, and beneficial chemical modifications of the environment. Laboratory devoted to field techniques of sampling, sample preservation, and analytical techniques applied to the environment. This course is typically offered in Spring. Prerequisite: CHEM 1412 , CHEM 3411. NOTE: All students registering for this course must also register for SMTE 0093. This is an online Chemistry Lab Safety course that must be completed before the end of the second week of the semester in order to be able to continue attending the lab section of the course. Also note that since lecture and lab are linked you cannot drop the lab without dropping the lecture as well.

CHEM 4490 - Special Topics

1-4 sem. hrs. May be repeated for credit. Subject materials variable. Offered on sufficient demand.

CHEM 4696 - Directed Independent Study

1-6 sem. hrs. Requires a formal proposal of study to be completed in advance of registration, to be approved by the supervising faculty, the chairperson and the dean of the College.

Chinese

CHIN 1311 - Chinese I

3 sem. hrs. Introduction to listening, speaking, reading and writing skills within a Chinese cultural framework. For students without previous knowledge of Mandarin Chinese. (Language Laboratory required. One hour per week.) A lab fee is required for this course. TCCNS Equivalent: CHIN 1311

CHIN 1312 - Chinese II

3 sem. hrs. Continued practice in listening, speaking, reading and writing skills within a Chinese cultural framework. For students without previous knowledge of Mandarin Chinese. CHIN 1311 - Chinese I or equivalent is required. (Language Laboratory required. One hour per week.) A lab fee is required for this course. TCCNS Equivalent: CHIN 1312

Civil Engineering

CEEN 2315 - Geomatics and Surveying Engineering

3 sem. hrs.
(3:0) Concepts, principles, and applications of surveying methods and technology for planar measurement, geo-positioning and mapping, and civil engineering project design and management are introduced. Topics include: land surveying methods for field measurement; principles of distances, elevation and angles; geodetic datums and coordinate systems; topographic mapping; basic error theory in measurement and computational adjustments; traverse calculations; introduction to Global Positioning System (GPS). Computational exercises to process, analyze, and adjust survey data will provide practical experience in civil survey design and assessment. Prerequisites: MATH 1316 – Trigonometry or MATH 2413 – Calculus I. Offered Fall.

CEEN 3320 - Geotechnical Engineering I

3 sem. hrs.
(3:0) Geotechnical engineering focuses on how soil supports and affects the performance of structures built on or below the earth's surface. This course will introduce the terminology used in geotechnical engineering and provide a basic understanding of important geotechnical principles and analytic methods. The topics to be covered in this class includes: index soil properties and soil classification; soil permeability and pore water movement; soil stresses; soil compressibility, consolidation and settlement; shear strength of soil; engineering soil properties and measurement. Prerequisites: ENGR 3315 – Fluid Mechanics and ENGR 3320 – Strength of Materials. Offered Spring.

CEEN 3330 - GIS for Civil and Environmental Engineering

3 sem. hrs. (3:0) Introductory design principles presented on the use of geographic information system (GIS) technology for modeling and analysis of civil and environmental engineering systems. Introduction to the integration of geospatial data and

analysis for decision making and management for site selection, mitigation, change analysis, modeling and assessment. Topics covered include map projections and georeferencing, vector and raster data models, acquisition and manipulation of data, cartography, current topics, data quality, and basic spatial analysis. The course integrates commercial GIS software (ESRI ArcGIS) for performing engineering analysis and problem solving. Students will participate in both individual software labs and team projects. Prerequisites: COSC 1330 – Programming for Scientists, Engineers and Mathematicians and CEEN 2315 Geomatics and Surveying Engineering (or equivalent). Offered Spring.

CEEN 4302 - Remote Sensing

3 sem. hrs. (3:0) Provides the foundations to interpret, process, and apply remotely sensed data acquired by satellites and sub-orbital platforms (aircraft, UAVs) for mapping and analysis of our natural and built environment. Principles of electromagnetic energy-matter interaction, remote sensing systems and data characteristics, digital image processing, and information extraction methods will be covered. Included is treatment of: aerial photogrammetry; multispectral, thermal, and hyperspectral sensing; earth observation satellites; radar and lidar; emergent topics. Emphasis will be on their use for geospatial and environmental applications. Offered Fall. Prerequisites: PHYS 2425 - University Physics I and GISC 3300 - Geospatial Mathematical Techniques (or equivalent).

CEEN 4304 - Civil and Construction Materials

3 sem. hrs. (3:0) The course provides instruction on civil and construction engineering materials used in the construction of highway structures such as pavements, bridges, retaining walls, box culverts, etc. In particular, the course concentrates on the engineering properties of aggregates, metals, portland cement concrete (PCC) and hot-mix asphalt (HMA) as well as the mixture design of PCC and HMA. The course targets those interested in civil engineering or construction engineering and management. Prerequisites: ENGR 3320 Strength of Materials. Offered Fall.

CEEN 4306 - Transportation Engineering

3 sem. hrs. (3:0) This course will give an introduction to the basic concepts, theory, and practice of transportation engineering as related to planning, design, and operations of the transportation system. The topics to be covered in this class includes: fundamental principles in planning, design and operation of transportation systems; issues and challenges in transportation; driver and vehicle performance capabilities; highway

geometric and pavement design principles; traffic analysis and transportation planning. Prerequisites: CEEN 2315 – Geomatics and Surveying Engineering. Offered Fall.

CEEN 4310 - Water Resources Engineering

3 sem. hrs. (3:0) This course will give an overview of the basic concepts, analysis methods, and design procedure. The topics to be covered includes: hydraulic processes, hydrological cycle, streamflow prediction, uncertainty analysis, water demands, water distribution systems, reservoir and dams, urban stormwater drainage, and water resources planning and management. Prerequisites: ENGR 3315 – Fluid Mechanics. Offered Spring.

CEEN 4312 - Principles of Hydraulics and Hydrology

3 sem. hrs. (3:0) This course will give an introduction to the basic concepts, theory, and analytic methods of hydraulics and hydrology. The topics to be covered in this class includes: water flow through pipes and pumping systems, water flow through open channels and hydraulic structures, watershed hydrology, and urban sewer systems. Prerequisites: ENGR 3315 – Fluid Mechanics. Offered Fall.

CEEN 4322 - Geotechnical Engineering II – Coastal Environment

3 sem. hrs.
(3:0) This course introduces key concepts and basic analysis and design techniques in geotechnical engineering for coastal environments. Emphasis is on the interaction between oceanic dynamic processes (waves, currents, tides, and sediment transport) and coastal regions (harbors, structures, beaches and estuaries) and on the engineering approaches necessary to prevent adverse effects caused by this interaction. Geotechnical aspects of coastal engineering projects will include design of traditional structures and exposure to softer coastal engineering techniques. Prerequisites: CEEN 3320 – Geotechnical Engineering I. Offered Fall.

CEEN 4324 - Structural Engineering

3 sem. hrs. (3:0) This class will provide students with a solid background on principles of structural engineering. Students will be exposed to the theories and concepts of both concrete and steel design and analysis both at the element and system levels. Hands-on design experience and skills will be gained and learned through problem sets and a comprehensive design project. An understanding of real-world open-ended design issues will be developed. Prerequisites: ENGR 3320 – Strength of Materials and MATH 3315 – Differential Equations. Offered Spring.

CEEN 4330 - Introduction to Bridge and Pavement Engineering

3 sem. hrs. (3:0) This course focuses on the materials, technology and procedures used to design and manage road pavements, with reference to the National Roads Authority (NRA) Design Manual for roads and bridges, and guidelines issued by the Department of Transport, Tourism and Sport (DTTS). Prerequisites: CEEN 4304 – Civil and Construction Materials. Offered Spring.

CEEN 4332 - Traffic Engineering

3 sem. hrs. (3:0) The purpose of this course is to introduce fundamentals of traffic engineering including data collection, analysis, and design. Emphasis is on the safe and efficient operations of roadway intersections. Traffic engineering studies traffic control devices, capacity and level of service analysis of freeways and urban roads. Applications of traffic operations include computer simulation models to the design of isolated intersection and coordinated traffic signal control systems. Prerequisites: CEEN 4306 – Transportation Engineering. Offered Spring.

CEEN 4342 - Construction Management

3 sem. hrs. The course focuses on management techniques to solve the unique problems associated with a construction project. Study of Construction Management functions including Project Management, Cost Management, Time Management, Quality Management, Contract Administration, and Safety Management will be covered. Emphasis is put on the application of each function throughout the project phases. Prerequisite: CEEN 4304 Civil and Construction Materials. Offered Spring.

CEEN 4396 - Directed Independent Study

1-3 sem. hrs. (1-3) Requires a formal proposal of study to be completed in advance of registration, approval of supervising faculty and department chairperson. Prerequisites: Varies. Offered Fall, Spring, and Summer.

Clinical Laboratory Science

CLSC 3102 - Essentials Laboratory for Clinical Laboratory Science

1 sem. hrs. (0:3) Application of essential practices for clinical laboratory science. Prerequisite or Co-requisite: CLSC 3200 - Essentials for Applied Laboratory Sciences. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety

Seminar is required for continued participation in this course. Offered fall semester every year.

CLSC 3200 - Essentials for Applied Laboratory Sciences

2 sem. hrs. (1:0) Introduction to general laboratory procedures, laboratory safety and regulations, quality assurance, professional ethics, specimen acquisition, sample maintenance and microscopy. Includes an introduction to the health care, public health and criminal investigation system. Prerequisites: BIOL 1407 - Biology II and CHEM 1412 - General Chemistry II. Offered fall semester every year.

CLSC 4120 - Hemostasis

1 sem. hrs. Studies of blood coagulation with an emphasis on the interaction of blood vessels, platelets, and certain plasma proteins. Disorders of hemostasis will be discussed along with diagnostic testing. Prerequisite: CLSC 4420 Hematology

CLSC 4182 - Seminar – Clinical Correlations

1 sem. hrs. (1:0) Informal lectures covering the newest developments in laboratory medicine. Includes discussion of the patient's clinical laboratory results, selection and interpretation of laboratory tests, and presentation of research. Requires permission of instructor and application. Offered summer semester (summer II only) every year.

CLSC 4200 - Professional Skills for Clinical Laboratory Scientists

2 sem. hrs. (2:0) Study of the role of the medical laboratory professional in the health care system. Includes professional ethics, legal responsibility, medical laboratory management, instructional methods, evaluation of clinical laboratory methods, medical laboratory instrument selection, clinical research and current professional topics. Requires permission of instructor and application. Offered summer semester (summer I only) every year.

CLSC 4280 - Introduction to the Clinical Laboratory Profession

2 sem. hrs. (2:0) Studies of the latest instrumentation, instrument selection, basic research, quality assurance and statistics used in the clinical laboratory. Permission of instructor and application required. Prerequisites: CLSC 3200 - Essentials for Applied Laboratory Sciences, CHEM 4401 - Biochemistry I, and MATH 1442 - Statistics for Life*^. Offered spring semester every year.

CLSC 4297 - Professional Practicum I

2 sem. hrs. Supervised learning experience in selected departments of the clinical laboratories. Clinical Laboratory Science students only. Requires permission of instructor and application. Offered spring semester every year.

CLSC 4325 - Clinical Chemistry I

3 sem. hrs. (2:3) Principles and practice of procedures found in general clinical chemistry. Includes the methodology of diagnostic tests and normal and abnormal human physiology as applied to diagnosis of pathological conditions. Prerequisite: CHEM 4401 - Biochemistry I. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

CLSC 4326 - Clinical Chemistry II

3 sem. hrs. (3:0) Continuation of CLSC 4325 - Clinical Chemistry I. Emphasis on advanced clinical chemistry topics and procedures. Prerequisite: CLSC 4325 - Clinical Chemistry I. Offered spring semester every year.

CLSC 4370 - Clinical Microbiology I

3 sem. hrs. (2:3) Lecture and laboratory studies of common pathogenic bacteria. Emphasis is on staining, cultural, and differential biochemical characteristics, methods of isolation from body fluids and susceptibility to therapeutic agents. Prerequisite or Co-requisite: BIOL 2421 - Microbiology. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

CLSC 4371 - Clinical Microbiology II

3 sem. hrs. (2:3) Lecture and laboratory studies of parasitic, viral, mycological and unusual bacterial human pathogens. Emphasis on methods of isolation from body fluids, identification methods and correlation with pathology. Prerequisite: CLSC 4370 - Clinical Microbiology I. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

CLSC 4382 - Advanced Medical Laboratory Procedures

3 sem. hrs. (2:3) Lecture and laboratory studies of the newest development in laboratory diagnostic medicine. Includes advanced clinical chemistry, immunology and molecular diagnostic procedures. Permission of instructor and application required. Prerequisites:

CLSC 4325 - Clinical Chemistry I, BIMS 4406 - Immunology or BIOL 4406 - Immunology, and CHEM 4401 - Biochemistry I. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

CLSC 4420 - Hematology

4 sem. hrs. (3:3) Studies of the formation, function and identifying characteristics of the cellular elements of human blood and other body fluids in health and diseased states and laboratory studies on blood coagulation. Lecture and laboratory emphasize the enumeration, morphology and staining characteristics of normal and abnormal cells and hemostasis. Prerequisites: BIOL 2416 - Genetics and CHEM 4401 - Biochemistry I . Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

CLSC 4430 - Clinical Immunology

4 sem. hrs. (3:3) Theoretical aspects of the immune response and its relationship to the diagnosis of disease and clinical immunohematology. Lecture and laboratory stress the detection, identification and characterization of antibodies, blood grouping and typing, compatibility testing, blood component therapy, HLA testing and diagnosis of pathological conditions. Prerequisite: BIMS 4406 - Immunology or BIOL 4406 - Immunology. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

CLSC 4598 - Professional Practicum II

5 sem. hrs. Continuation of CLSC 4297 - Professional Practicum I. Supervised learning experience in selected departments of the clinical laboratories. Prerequisite: CLSC 4297 - Professional Practicum I. Clinical Laboratory Science students only. Requires permission of instructor and application. Offered summer semester (summer I only) every year.

CLSC 4599 - Professional Practicum III

5 sem. hrs. Continuation of CLSC 4598 - Professional Practicum II. Supervised learning experience in selected departments of the clinical laboratories. Prerequisite: CLSC 4598 - Professional Practicum II. Clinical Laboratory Science students only. Requires

permission of instructor and application. Offered summer semester (summer II only) every year.

Communication

COMM 1311 - Foundation of Communication*

3 sem. hrs. This course examines a breadth of topics fundamental to the study of communication and works to improve students' communication skills in three primary contexts: interpersonal relationships, group/teamwork, and presentational speaking. TCCNS Equivalent: SPCH 1311

COMM 1315 - Public Speaking

3 sem. hrs. Research, composition, organization, and delivery of speeches for various purposes and occasions, with emphasis on listener analysis and on informative and persuasive techniques. TCCNS Equivalent: SPCH 1315

COMM 1318 - Interpersonal Communication*^

3 sem. hrs. Predominant issues related to verbal and nonverbal communication with a focus on interpersonal relationships. TCCNS Equivalent: SPCH 1318

COMM 1321 - Business and Professional Communication

3 sem. hrs. Introduces students to basic skills, principles, and contexts of communication in business and professional settings by combining public speaking with aspects of communication ethics and organizational, small group, and interpersonal communication. Students will learn practical skills via presentations, research, resumes, interviews, meetings, and professional writing grounded in communication theory. TCCNS Equivalent: COMM 1321 (or SPCH 1321) Face-to-Face 1-24%

COMM 1342 - Voice and Diction

3 sem. hrs. Basic voice training, including techniques for vocal production, manipulation, and control. Practical application of the vocal apparatus will be emphasized, including techniques of enunciation, projection, articulation, and the use of dialects. (Credit may not be given for both this course and THEA 1342.) TCCNS Equivalent: SPCH 1342

COMM 2330 - Introduction to Public Relations

3 sem. hrs. An exploration of the history and development of public relations including the theory and process of public relations, and the various publics and careers associated with the public relations industry.

COMM 2333 - Small Group Communication

3 sem. hrs. Application of small group theories and techniques as they relate to group process and interaction. TCCNS Equivalent: SPCH 2333

COMM 2335 - Presentational Communication

3 sem. hrs. Advanced study of the principles and methods of formal presentations for various purposes and audiences to further develop students into effective communicators. Course assignments will include various special occasion speeches, dynamic instructional speeches, extemporaneous speaking, creation of effective visual aids, and a group community action presentation.

COMM 3310 - Communication Theory

3 sem. hrs. The foundations, processes, and effects of human communication. A survey of contemporary theory and research, including language theory, nonverbal and small group communication, persuasion, and mass communication.

COMM 3311 - Nonverbal Communication

3 sem. hrs. The study of body movement, touch, paralanguage, space, environment, and other nonverbal factors in the communication process.

COMM 3325 - Relational Communication

3 sem. hrs. Lecture This course is an advanced interpersonal communication course that focuses on communication within relationships, such as family, romantic, friendship, and workplace relationships. Prerequisite: COMM 1318

COMM 3326 - Research Methods

3 sem. hrs. The purpose of this course is to increase student's knowledge of the research process used in the Communication Studies discipline. Specifically, the course will allow students the opportunity to learn the goals of communication research and scrutinize various techniques for creating academic research and assessing academic knowledge.

COMM 3330 - Persuasion

3 sem. hrs. Various theories and forms of rhetorical persuasion. Topics include practical reasoning skills, psychological theories of persuasion, and critical responses to persuasive messages.

COMM 3331 - Public Relations Writing and Design

3 sem. hrs. This course will introduce students to the basic principles and formatting requirements for public relations writing. Students will gain theoretical and practical experience in developing content for specific audiences.

COMM 3335 - UIL Debate and Speech

3 sem. hrs. Understanding the University Interscholastic League debate and speech events. Students explore approaches to analytical reasoning, research delivery, and the conceptual basis for debate and gain practical experience in understanding and judging UIL in the high school setting.

COMM 3350 - Leadership

3 sem. hrs. Leadership focuses on the communication of influence that takes place to achieve goals or encourage change. Specific attention will be devoted to a variety of approaches, processes, and theories that will provide students general knowledge of leadership.

COMM 4314 - Gender Communication

3 sem. hrs. Examination of communication about women and men, as well as communication between them. Special course emphasis on explanations of gender, sexist language, media depiction of the sexes, and gender communication in the formation of social and work relationships.

COMM 4315 - Communication and Sexuality

3 sem. hrs. This course will focus on communication and sexuality, specifically exploring sex and gender identity development and expression, intersections of race/ethnicity and sex/gender, how communication impacts various types of relationships, the role of communication in sexual activity, and power abuses related to sexual activity, with specific focus on consent and sexual safety.

COMM 4331 - Public Relations Campaigns

3 sem. hrs. An application of the public relations process (including primary and secondary research, goals and objective development, the selection of proper strategies and tactics for implementation, and an evaluation of campaign effectiveness) through the production and presentation of a public relations campaign for a local organization. Prerequisites: COMM 2330 and COMM 3331

COMM 4335 - Crisis Communication

3 sem. hrs. lecture An application of crisis communication (including organizational research, risk and vulnerability assessment, strategic communication, and performance and damage evalutation) through the development and presentation of a crisis communication plan for a local organization.

COMM 4345 - Intercultural Communication

3 sem. hrs. An investigation of the process by which persons and groups of different cultural backgrounds create understanding. Types of knowledge, skills, and sensitivity necessary for intercultural communication are developed.

COMM 4350 - Organizational Communication

3 sem. hrs. Examination and exploration of realistic applications of communication theories within the framework of an organization. Particular attention will be given to techniques for diagnosing communication problems, as well as strategies for effecting change in communication.

COMM 4360 - International Leadership

3 sem. hrs. Study of international leadership in the context of communication and in multi-cultural and diverse settings. Influence of global economy, politics, social values in international leadership.

COMM 4380 - Senior Seminar in Communication Studies

3 sem. hrs. This course serves as the capstone for the Communication Studies degree. It offers students opportunities to synthesize information learned in other Communication courses and demonstrate abilities to think critically, conduct independent research linked to appropriate communication theories, create individual and collaborative projects that demonstrate effective use of communication strategies, and present written and oral work at an advanced level. Prerequisite: COMM 2335, COMM 3310, COMM 3326, and Senior rank.

COMM 4390 - Topics in Communication Studies

3 sem. hrs. Study of specialized topics and themes in communication studies. May be repeated when topics vary.

COMM 4394 - Professional PR Portfolio

3 sem. hrs. Students prepare documents, explore strategies for enhancing their marketability, and assemble a professional portfolio of public relations work. Prerequisites: COMM 2330 , COMM 3331, and COMM 4335 .

COMM 4396 - Directed Individual Study

1-3 sem. hrs. See College description. By application. Only 3 semester hours of Directed Individual Study credit may be counted toward the major. Prerequisite: Approval of Instructor.

COMM 4399 - Communication Internship

3 sem. hrs. Practical experience in the field through placement in a communication internship position. Students interested in applying for the internship course must have a minimum cumulative GPA of 3.0; have at least junior standing at the university; be a communication studies major or minor, or public relations minor; have completed at least 12 hours of coursework in the major or minor at TAMU-CC. Preferred applicants will have a minimum communication or public relations GPA of 3.25. All applicants must solicit a recommendation from from a Department of Communication and Media faculty member. Course may be taken three times for credit; however only 3 semester hours of internship credit may be counted toward the major. A second internship may apply to the communication studies minor or public relations minor; a third internship may be used as a free elective. Authorization to repeat the internship course is contingent on the students' successful completion of the previous internship experience. This course is graded Credit/No Credit. Prerequisite: Approval of Internship Coordinator for the Department of Communication and Media.

MEDA 1305 - Film and Culture*^

3 sem. hrs. Introduction to film aesthetics, history, and criticism for non-communication majors. Establishes a vocabulary for examining films and their roles in American culture. Satisfies the university core curriculum requirement in fine arts.

MEDA 1307 - Media and Society

3 sem. hrs. History and development of mass media in the United States as well as the organizational, institutional, and cultural dynamics of today's major commercial media. Included are substantial components on print media, radio, television, cinema, and computer Internet communication systems. Course themes include media production and consumption, globalization, cultural imperialism, race, class, gender in media and popular culture. TCCNS Equivalent: COMM 1307)

MEDA 1315 - Editing

3 sem. hrs. Intensive instruction in postproduction software, postproduction workflows, and editing techniques for moving images.

Online classification: Face-to-Face 1-24%.

MEDA 1380 - Introduction to Media Production

3 sem. hrs. Overview of tools and skills necessary to produce digital media content such as editing, cinematography, sound recording, producing and directing for film, television and new media.

MEDA 2311 - Media Writing

3 sem. hrs. This course is designed to teach the fundamentals of writing for the mass media. It includes instruction in professional methods and techniques for gathering, processing and delivering content.

MEDA 2313 - Intermediate Production: Documentary

3 sem. hrs. Principles and techniques of media production with a focus on non-fiction filmmaking. Prerequisites: MEDA 1315 and MEDA 1380. Online Classification: Face-to-Face 1-24%.

MEDA 2315 - News Reporting

3 sem. hrs. This course focuses on advanced news-gathering and writing skills. It concentrates on the three-part process of producing news and features, which include discovering the news, reporting the news and writing news in different formats. This course will incorporate all forms of news writing, including: press release, print news, web news and TV and radio broadcast news. Prerequisite: MEDA 2311 Media Writing.

MEDA 2316 - Intermediate Production: Narrative

3 sem. hrs. Principles and techniques of media production with a focus on fictional narrative filmmaking. Prerequisite: MEDA 1315 and MEDA 1380. Online Classification: Face-to-Face 1-24%.

MEDA 2350 - Media Performance

3 sem. hrs. This course is designed to teach students articulation, pronunciation, effective writing and on-air performance techniques for all kinds of media environments with videotaped and audio taped presentations.

MEDA 2366 - Media Forms

3 sem. hrs. Examination of the formal elements of media texts, including cinematography/videography, sound, and editing, across a variety of media platforms and styles. Includes instruction in writing formal analysis. TCCNS Equivalent: DRAM 2366

MEDA 2367 - Media Industries

3 sem. hrs.

Examination of the media industries, including how they have evolved and now operate, as well as broader theoretical and practical implications of changing media organizations and practices. Includes instruction in researching contemporary and historical modes of media production, distribution, and exhibition.

MEDA 3301 - Television Criticism

3 sem. hrs. Exploration of how TV communicates through the study of programming content, production practices, and audiences. Includes a laboratory for screening assigned programs. Prerequisite: MEDA 1307

MEDA 3302 - Film Criticism

3 sem. hrs. Exploration of the critical approaches to the study of film from a variety of historical and theoretical perspectives, with an emphasis on narrative film and some consideration of experimental cinema. Includes a laboratory for screening assigned films. Prerequisite: MEDA 1307.

MEDA 3303 - Documentary Studies

3 sem. hrs. Historical and critical study of the non-fictional film with attention to changing technologies, to varying uses and styles of documentary, and to contemporary critical and theoretical issues. MEDA 1307

MEDA 3310 - Media Theory and Research

3 sem. hrs. This course is intended to immerse students in the leading theoretical and methodological approaches employed within the field of media studies to gain understating of media texts, popular culture, and audiences. Closely affiliated with cultural studies, qualitative research methods will be a primary focus. Readings and case studies will offer students insight into the way these methods are being used in the field, including their limitations and strengths. A series of assignments will allow them to propose, design, and conduct multiple sample research projects and analyze data in ways that engage with a variety of theories.

MEDA 3314 - Television Production

3 sem. hrs. Fundamentals of studio television production. Field-based course, transportation required.

MEDA 3317 - Advanced Postproduction

3 sem. hrs. Intensive instruction in advanced postproduction software, postproduction workflows and editing techniques for moving images. Prerequisite: MEDA 3315 Editing

MEDA 3318 - Editing & Layout

3 sem. hrs. This course will teach the principles of copy editing, with an emphasis on accuracy and fairness, as well as the principles of layout and design for print and web publications. Prerequisite: MEDA 2311 Media Writing

MEDA 3340 - Photojournalism

3 sem. hrs. This course will instruct on photojournalism skills and methods for use in visual communication. It will examine ethical and legal limitations to photography and in editing. Student work in this class will be eligible for possible publication in the student newspaper or its accompanying website.

MEDA 3351 - Screen Comedy

3 sem. hrs. Examination of the varieties of screen comedy, from silent comedy to contemporary forms, with some attention to the history and theory of comic performance. Prerequisite: MEDA 1307.

MEDA 3360 - Screenplay Writing

3 sem. hrs. Writing and analysis of the screenplay for narrative fictional films. Writing projects include problem-solving exercises and work on an original screenplay. Course can be repeated for credit.

MEDA 3361 - Sports Writing

3 sem. hrs. This course will teach the elements of sports writing and reporting to include interviewing and writing to cover different aspects of sports coverage. This course will address content for print, Internet, radio and television. Campus-related sports assignments will be eligible for publication in the student newspaper and its accompanying website.

MEDA 3380 - New Media and Communication*^

3 sem. hrs. Examines how new media technologies impact society and change communication practices. Particular emphasis placed on different modes of cultural expression and social interaction made possible through digital media and the Internet.

MEDA 4305 - Interpreting and Making the Visual Culture of Hollywood

3 sem. hrs. This course examines the visual culture of Hollywood media production in a focused context, such as during a particular decade, or in relation to a particular genre, star, or cultural topic. The visual culture studied will include not just primary media texts such as films or television programs, but also posters, trailers, and other promotional materials, as well as visual culture not produced directly by the media industries, such as contemporary art. Students will learn and utilize basic design techniques to create their own artwork related to these materials, including movie posters, album covers, and sequential art. As resources and equipment availability allow, these designs will be produced using techniques including print-making.

MEDA 4308 - Advanced Production: Commercial

3 sem. hrs. Advanced techniques in the creation of client based commercial media content with a focus on conceptualization, production, and delivery of a commercial, PSA, or corporate video project. Prerequisite: MEDA 2313, MEDA 1315, and MEDA 2316.

MEDA 4310 - Advanced Production: Documentary

3 sem. hrs. Advanced techniques in the creation of documentary media content with a focus on conceptualization, production, and distribution of a short documentary film. Course can be repeated once for credit. This course serves as a capstone for the Media Production Track. Prerequisites: MEDA 2313

MEDA 4312 - Advanced Production: Narrative

3 sem. hrs. Advanced techniques in the creation of narrative media content with a focus on scripting, production, and distribution of a short narrative film. Course can be repeated once for credit. This course serves as a capstone for the Media Production Track. Prerequisites: MEDA 2316.

MEDA 4317 - After Effects

3 sem. hrs. Conceptualization and execution of digital media projects using visual effects, motion graphics and composition through the creation of video, animation, special effects and more using Adobe's After Effects postproduction software. Prerequisite: MEDA 1315 (formerly MEDA 3315) TCCNS Equivalent: None

MEDA 4340 - Advertising Criticism

3 sem. hrs. The examination of advertising history through critical and cultural approaches. Prerequisite: MEDA 1307.

MEDA 4341 - First Amendment and Ethical Issues in the Media

3 sem. hrs. Study of legal and ethical issues in mediated communication, including the First Amendment and free speech, control, and regulation of broadcasting, obscenity in the media. Prerequisite: MEDA 1307. Non-majors may be admitted with permission by the instructor. Non-majors may be admitted with permission by the instructor.

MEDA 4342 - Global Media and International Communication

3 sem. hrs. Examines global media in the context of international communication, diversity of media and cultural production, styles of media practices abroad, including differences between U.S. news values and ethical and moral dimensions across differing societies of the world.

MEDA 4343 - News Publication

3 sem. hrs. This course will be a hands-on newsroom experience with the student newspaper the Island Waves and its accompanying website. Individual assignments will be assigned by editors of the student media. Assignments may include writing, advertising, photography, cartooning and video production and editing. Students are required to work on the staff of the official college publication during prescribed hours under faculty supervision. Prerequisite: MEDA 2311 Media Writing. It is also strongly recommended that students successfully complete MEDA 2315 News Reporting and MEDA 3318 Editing & Layout.

MEDA 4370 - Advanced New Media Project

3 sem. hrs. lecture As the capstone course for the New Media Arts Certificate, this course guides students through the planning, development, and execution of new media-based project. Prerequisite: MEDA 2313, MEDA 1315 and ARTS 2356,

MEDA 4381 - Senior Seminar in Media Studies

3 sem. hrs. lecture The capstone course for seniors in the Media Studies offers opportunities to synthesize information learned in other Media Studies courses through in-depth study of a particular topic. Students will demonstrate their abilities to think and write critically, and to conduct independent research or produce media projects at an advanced level. Topics vary by instructor. Prerequisite: MEDA 1307, MEDA 3310, and Senior rank.

MEDA 4390 - Topics in Media Arts

3 sem. hrs. Study of specialized topics and themes in media arts. May be repeated when topics vary.

MEDA 4396 - Directed Individual Study

1-3 sem. hrs. See College description. By application. Only 3 semester hours of Directed Individual Study credit may be counted toward the major. Prerequisite: Approval of Instructor.

MEDA 4399 - Media Arts Internship

3 sem. hrs. Practical experience in the field through placement in a media internship position. Students interested in applying for the internship course must have a minimum cumulative GPA of 3.0; have at least junior standing at the university; be a media arts (media studies or media production emphasis) major or digital journalism minor; have completed at least 12 hours of coursework in the major or minor at TAMU-CC. Preferred

applicants will have a minimum media arts or digital journalism GPA of 3.25. All applicants must solicit a recommendation form from a Department of Communication and Media faculty member. Course may be taken three times for credit; however only 3 semester hours of internship credit may be counted toward the major. A second internship may apply to the digital journalism minor; a third internship may be used as a free elective. Authorization to repeat the internship course is contingent on the students' successful completion of the previous internship experience.This course is graded Credit/No Credit. Prerequisite: Approval of Internship Coordinator for the Department of Communication and Media.

Computer Science

COSC 1315 - Computer Literacy

3 sem. hrs. (3:0) A balanced introduction to the use and application of computers in modern society involving both descriptive information and hands-on laboratory participation. Includes a discussion of the general principles of operation of a computer and a brief history of the development of computing. The use of a personal computer operating system, common application software, and simple computer programming concepts are introduced. Satisfies university computer literacy requirement. Prerequisite: None. TCCNS Equivalent: COSC 1301 On demand

COSC 1320 - C Programming

3 sem. hrs. Introduces the fundamental concepts of structured programming in the C language. Topics include data types; control structures; functions, structures, arrays, pointers, pointer arithmetic, unions, and files; the mechanics of running, testing, and debugging programs; introduction to programming; and introduction to the historical and social context of computing. Prerequisite: MATH 1314 or higher.

COSC 1330 - Programming for Scientists, Engineers, and Mathematicians

3 sem. hrs. 3:0 Introduction to computer programming for solving discipline specific problems using computers. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, data and file structures, input/output devices, and disks/files. TCCNS Equivalent: ENGR 2304 Fall, Spring

COSC 1435 - Introduction to Problem Solving with Computers I

4 sem. hrs. (3:2) This course introduces the fundamental concepts of problem solving and algorithms. A brief introduction to computers and the programming life cycle is covered. The C++ programming language is used to develop basic computer programs demonstrating data types, fundamental control structures, functions, and arrays. Prerequisites: MATH 1314 - College Algebra or placement beyond MATH 1314 - College Algebra. TCCNS Equivalent: COSC 1436 Fall, Spring, Summer

COSC 1436 - Introduction to Problem Solving with Computers II

4 sem. hrs. (3:2) This course is a continuation of COSC 1435. An introduction to abstract data types and object-oriented programming is covered. Topics include basic searching and sorting algorithms, dynamic allocation, linked lists, inheritance, polymorphism, and recursion. Prerequisite: COSC 1435 - Introduction to Problem Solving with Computers I with a grade of C or better. TCCNS Equivalent: COSC 1437 Fall, Spring, Summer

COSC 2325 - Game Design

3 sem. hrs. (2:2) This course will teach students the techniques for computer game design and how to work as part of a game development team from initial conception through release, including the game design process, game concepts, how and why we play games, character development, storytelling, user experience, game play, and core mechanics of games. Prerequisite: None. Spring

COSC 2334 - Computer Architecture

3 sem. hrs. (3:0) A concentrated study of internal computer concepts. Computer organization, machine and assembly language are emphasized. Prerequisites: COSC 1435 - Introduction to Problem Solving with Computers I, MATH 2305 - Discrete Mathematics I. Fall, Spring

COSC 2348 - Introduction to Scripting

3 sem. hrs. This course introduces students to Windows and Unix/Linux shell scripting. The course covers basic scripting concepts including decision statements, control statements, functions and files manipulation. Advanced scripting tools such as grep, awk and sed are covered in this course. Prerequisite: COSC 1435. Spring

COSC 2390 - Selected Topics I

3 sem. hrs. (2:2) Variable content. May be repeated for credit depending on topic. Offered on sufficient demand. Does not count toward total hours required for BS in Computer Science. Prerequisite: None.

COSC 2391 - Selected Topics II

3 sem. hrs. (3:0) This is a selected topics course with no lab component. Variable content. May be repeated for credit depending on topic. Offered on sufficient demand. Does not count toward total hours required for BS in Computer Science. Prerequisite: None.

COSC 2437 - Data Structures

4 sem. hrs. (3:2) This course provides a thorough study of standard structures used in the storing and retrieving of data and the processes by which these structures are created and manipulated. Topics include: object oriented design, linked lists, classes, trees, graphs, hashing, stacks, queues, sorting, searching, and recursion. A grade of C or better is required in the course to receive credit towards the Computer Science BS program. Prerequisite: COSC 1436 - Introduction to Problem Solving with Computers II with a grade of C or better. Prerequisite or Corequisite: MATH 2305 - Discrete Mathematics I . TCCNS Equivalent: COSC 2436 Fall, Spring

COSC 2465 - Linux Systems

4 sem. hrs. (3:2) This course focuses on providing students with essential knowledge and skills to implement, administer, and troubleshoot servers in a networked environment. Operating system concepts, such as installing a standalone system, file systems authentication, and user support services are explored. Topics will include security issues, user and group administration, active directory services, DHCP, DNS, SSH, backup and restoration strategies and techniques, integrated mass storage technologies and alternative client technologies. Prerequisite: COSC 2348 - Introduction to Scripting. Fall

COSC 2466 - Network Systems

4 sem. hrs. (3:2) This course focuses on the standards and technologies used to establish inter-network structures that will support a TCP/IP data stream for higher-level services to operate over. This course introduces local area networks (LAN) and wide area networks (WAN). Topics include the TCP/IP and open system interconnection (OSI) models, cabling, switches, routers, protocols, subnetting, and networking hardware and software. Initial switch and router configuration will be examined and evaluated. Prerequisite: COSC 2348 - Introduction to Scripting. Spring

COSC 2470 - COBOL Programming

4 sem. hrs. (3:2) A concentrated study of the COBOL language as applied to fundamental business computing problems and other data management applications. Prerequisite: COSC 1435 - Introduction to Problem Solving with Computers I. Fall

COSC 3100 - Skills for Computing Professionals I

1 sem. hrs. (0:2) This course focuses on beginning to develop professional skills that computer scientists will need to be successful in their careers and lives. Communication skills will include writing and giving oral presentations. Ethical issues will be explored. This is a class for computing professionals. As such, professional decorum will be required at all times. Prerequisites: None. Corequisites: This is a corequisite for computer science majors in COSC 1435. Fall, Spring

COSC 3301 - Cyber Security

3 sem. hrs. This course introduces students to cyber security. A broad range of cyber security issues will be covered, including social engineering attacks, secure coding, computer security, Internet of Things (IoT) security, mobile security, data security, network security, physical security and forensics. This course will cover the concepts of prevention, detection, and response to cyber security threats. COSC 1435. Fall, Spring

COSC 3324 - Object-oriented Programming

3 sem. hrs. (3:0) A study of concepts, terminology, and methodologies used in object-oriented systems, languages, and applications. Students will design and implement software systems using object-oriented analysis and design techniques. Prerequisite: COSC 2437 - Data Structures. Fall, Spring

COSC 3325 - Game Programming

3 sem. hrs. (2:2) This course will introduce the student to techniques and tools used for all aspects of programming games. Topics will include game graphics, game physics, game AI, and sound. The course will contain lectures and hands-on labs. Students will work independently and in teams. Prerequisite: COSC 2437 - Data Structures. Spring, even years

COSC 3335 - Programming for Unmanned Aircraft Systems

3 sem. hrs. (3:0) This course introduces software development for Unmanned Systems (US). Students will be introduced to a variety of relevant topics including the different US platforms, design and implementation of algorithms for US, user interface for US, and state-of-the-art US applications, challenges & solutions. Prerequisites: COSC 1330

Programming for Scientists, Engineers, and Mathematicians OR COSC 1435 Introduction to Problem Solving with Computers I, MEEN 4335 - Introduction to Aircraft Aerodynamics and Performance On demand

COSC 3336 - Introduction to Database Systems

3 sem. hrs. (3:0) A study of contemporary database management system concepts, terminology, and methodology for use and implementation. Commercially available systems are discussed and used with emphasis upon the relational model. Prerequisite: COSC 2437 - Data Structures. Fall, Spring

COSC 3346 - Operating Systems

3 sem. hrs. (3:0) Introduction to operating systems concepts, principles, and design. Topics include: processes and threads, CPU scheduling, mutual exclusion and synchronization, deadlock, memory management, file systems, security and protection, networking, and distributed systems. Selected existing operating systems are discussed, compared, and contrasted. Prerequisites: COSC 2437 - Data Structures and COSC 2334 - Computer Architecture. Fall, Spring

COSC 3351 - Internet Programming

3 sem. hrs. (3:0) Study of prominent web technologies with a focus on creating interactive web applications. Both client-side and server-side programming will be covered. Students will design and implement a web based project using technologies covered in class. Prerequisite or Corequisite: COSC 3336 - Introduction to Database Systems. Fall, Spring

COSC 3352 - Mobile Programming

3 sem. hrs. (3:0) This course introduces software development for mobile platforms. Students will learn skills for creating and deploying mobile applications. Includes software engineering topics as related to mobile programming, primarily in how software design differs on mobile platforms. Prerequisite: COSC 2437 - Data Structures. Spring

COSC 3353 - Survey of Programming Languages

3 sem. hrs. (3:0) A study of selected programming languages for students familiar with programming. Students will write programs in a variety of languages. Prerequisite: COSC 2437 - Data Structures. Spring

COSC 3360 - Human-computer Interaction

3 sem. hrs. (3:0) This course introduces concepts and techniques for Human Computer Interaction. Particular emphasis will be placed on vision, audio, and language solutions for use in human-computer interactive systems. In addition, the students will learn how to apply the methods to solve simple HCI problems. Prerequisite: COSC 1436 - Introduction to Problem Solving with Computers II. Fall, even years

COSC 3370 - Software Engineering

3 sem. hrs. (3:0) This course introduces students to software engineering principles for the development and maintenance of high quality large software systems. Topics include: software life cycle, delivering on time and within budget, and the development and application of processes and tools for managing the complexities inherent in creating these systems. Prerequisite: COSC 2437 - Data Structures. Fall, Spring

COSC 3371 - Computer Information Systems Economics

3 sem. hrs. (3:0) An introduction to concepts in information technology and software engineering with a focus on economics and managerial issues. Topics include cost benefit analysis, software and effort estimation, feasibility analysis, information systems proposals, software team coordination, and project management. May not be used as a CS elective for CS majors. On demand

COSC 3372 - Network Security

3 sem. hrs. This course provides an introduction to the fundamentals of computer and network security and security laws and ethics, topics include, identification of vulnerabilities, forms of attack, appropriate countermeasures, and the detection and defense of the same. Techniques for the securing of hardware, software and data, including physical security are covered. Prerequisites: COSC 2465 - Linux System and COSC 2466 - Network Systems.

COSC 3373 - Software Project Management

3 sem. hrs. This course introduces students to the principles for software project management for small and medium-size projects. Many aspects of software project management, including management process, scope definition, time and cost estimation, quality control, human resources, communication, risks and project procurement management will be discussed. A number of applications and tools will be used to implement a class project. COSC 3370. Spring

COSC 3380 - Undergraduate Research Experience

3 sem. hrs. (3:0) This course provides undergraduate students with a range of practical experiences in conducting real-world research. Students will communicate their ideas in oral and written forms. Students will interact with other students and professionals in ongoing research projects. Experience will be gained in all stages of research: proposing a project, designing an approach, and reporting results. Prerequisite or Corequisite: COSC 2437 - Data Structures. On demand

COSC 3385 - Numerical Methods

3 sem. hrs. (3:0) This course introduces concepts for solving problems numerically using computers. Students will learn about number systems, errors of finite representation, and iteration. A survey of basic numerical methods including: solutions to nonlinear equations, solutions to linear systems, approximation, interpolation, zeros of functions, numerical differentiation and integration, and Monte-Carlo methods.
Prerequisites: MATH 2413 - Calculus I, COSC 1330 - Programming for Scientists, Engineers, and Mathematicians or COSC 1435 - Introduction to Problem Solving with Computers I. MATH 2414 - Calculus II and MATH 3311 - Linear Algebra are recommended. Fall

COSC 3400 - Skills for Computing Professionals

4 sem. hrs. (3:2) This course focuses on the professional skills that computer scientists will need to be successful in their careers. There are two key areas of study, communication skills needed by computer scientists and their ethical responsibilities. Communication skills will include: technical writing from a computer science perspective, presentation skills, client interviewing, and reading technical articles. Ethical issues will be explored from a computer science perspective. Prerequisite: ENGL 1302 - Writing and Rhetoric*. On demand

COSC 3474 - Cyber Defense I

4 sem. hrs. This course covers cryptographic tools, cryptographic algorithms, types of malicious software, forms of attacks and software security. Strengths and weaknesses of cryptographic systems are covered as well as the types of attacks on cryptographic systems. Malicious activity signatures, analysis as well as detection will be covered. This course will also cover secure coding principles and types of software issues.
Prerequisites: COSC 3372 - Network Security.

COSC 4100 - Skills for Computing Professionals II

1 sem. hrs. (0:2) This course focuses on technical writing, workplace scenarios and professional skills that computer scientists will need to be successful in their careers and lives. This is a class for computing professionals. As such, professional decorum will be required at all times. Prerequisites: COSC 3100 and ENGL 3310. Fall, Spring

COSC 4310 - Digital Forensics

3 sem. hrs. (3:0) This course will introduce undergraduate students to the fundamentals of computer forensics and cyber-crime scene analysis. The various laws and regulations dealing with computer forensic analysis will be discussed. Students will be introduced to the emerging international standards for computer forensic analysis, as well as a formal methodology for conducting computer forensic investigations. Several Forensics tools such as Encase and FTK will be used to conduct digital forensics investigations. Prerequisite: COSC 3474 - Cyber Defense I and COSC 4365 - Windows Security. Fall, odd years

COSC 4324 - Image Processing

3 sem. hrs. (3:0) This course introduces concepts and techniques for image processing. The objective of this course is to introduce the fundamental techniques and algorithms used for processing and extracting useful information from digital images. The students will learn how to apply the image processing methods to solve real-world problems. Prerequisites: COSC 2437 - Data Structures. Fall, odd years

COSC 4325 - Advanced Game Programming

3 sem. hrs. (3:0) This course will introduce advanced concepts for game programming to the student. Topics will include game physics, game AI, advanced shaders, 3D techniques, multiplayer techniques, and networking. The course will contain lectures and hands-on labs. Prerequisite: COSC 3325 - Game Programming. Spring, odd years

COSC 4328 - Computer Graphics

3 sem. hrs. (3:0) Basic principles and techniques for computer graphics on modern graphics hardware. Students will gain experience in interactive computer graphics using the OpenGL API. Topics include: 2D viewing, 3D viewing, perspective, lighting, and geometry. Prerequisite: COSC 2437 - Data Structures, MATH 2413 - Calculus I. MATH 3311 - Linear Algebra is recommended. Fall, odd years

COSC 4330 - Introduction to Artificial Intelligence

3 sem. hrs. (3:0) Foundations, directions, and applications of artificial intelligence including search algorithms, knowledge acquisition, representation, and processing. Students will gain practical experience by implementing many of the basic algorithms. Prerequisite: COSC 2437 - Data Structures Fall, even years

COSC 4342 - Computer Networks

3 sem. hrs. (3:0) Computer-based communication systems. Topics include: advanced computer network architectures, protocols, and programming. Prerequisites: COSC 2437 - Data Structures, MATH 2413 - Calculus I. Fall, Spring

COSC 4343 - Algorithms

3 sem. hrs. (3:0) Advanced programming techniques for algorithmic and heuristic solutions of problems. Topics include: analysis and design of algorithms, testing of algorithms, optimum and exhaustive solutions, and recursion. Prerequisites: COSC 2437 - Data Structures, MATH 2413 - Calculus I. Fall

COSC 4345 - Introduction to Machine Learning

3 sem. hrs. This course gives a broad introduction to machine learning with more emphasis on intelligent system design. Topics to be covered include linear and logistic regression, neural networks, clustering, classification, decision tree, evolutionary computation, feature selection, and reinforcement learning. The courses will explore various applications of machine learning to computer science, process modeling, pattern and speech recognition, data mining, and bioinformatics.

COSC 4348 - Systems Programming

3 sem. hrs. (3:0) The design and implementation of system software such as device drivers, application support libraries, and interprocess communication. Students will study and use systems programming tools. Prerequisites: COSC 3346 - Operating Systems, and either COSC 3353 - Survey of Programming Languages or COSC 3324 - Object-oriented Programming. Spring

COSC 4353 - Compiler Construction

3 sem. hrs. (3:0) This course introduces the basic concepts and mechanisms traditionally employed in language translators, with emphasis on compilers. Topics include: strategies for syntactic and semantic analysis, techniques of code optimization and approaches toward code generation. Prerequisites: COSC 3353 - Survey of Programming Languages. Spring, even years

COSC 4354 - Senior Capstone Project

3 sem. hrs. (3:0) Teamwork and formal methods of systems analysis and design are emphasized. Students will complete a large team project. Prerequisites: COSC 3370 - Software Engineering, COSC 3336 - Introduction to Database Systems, and ENGL 3310. Fall, Spring

COSC 4360 - Theory of Programming Languages

3 sem. hrs. (3:0) The study of programming language design including syntax, semantics, behavior, and implementation issues in imperative, functional, logic, and object-oriented languages. Other topics include type theory, concurrency, data dependency, and nondeterminism. Prerequisite: COSC 2437 - Data Structures. Fall, odd years

COSC 4365 - Windows Security

3 sem. hrs. (3:0) This course focuses on advanced system administration topics. An in depth understanding of various concepts such as operating systems, servers, file systems authentication, and user support services are explored. Topics include security issues, user and group administration, server and work-station integration, central repositories for updates, Active directory, DMZ, web servers, email servers, electronic system update and maintenance, backup and restoration strategies and techniques, integrated mass storage technologies and alternative client technologies. Prerequisite: COSC 2466 - Network Systems Spring

COSC 4367 - Firewall and Intrusion Detection Systems

3 sem. hrs. (3:0) This is an applied course which focuses on the standards and technologies used to establish inter-network structures that will support a TCP/IP data stream for higher-level services to operate over. This course introduces firewalls, Intrusion Prevention Systems (IPS), and Intrusion Detection Systems (IDS) technology. Topics include Windows, Linux, Check Point and Cisco firewalls, TCP/IP and open system interconnection (OSI) models, attack traffic analysis, and network based and host based hardware and software. Device configuration will be examined and evaluated with appropriate exercises. Prerequisites: COSC 3372 - Network Security, COSC 4365 - Windows Security. Fall

COSC 4368 - Penetration Testing

3 sem. hrs. (3:0) This course focuses to increase the students understanding of how to recognize a potential cyber attacker and identify vulnerabilities through the use of vulnerability analysis tools. Students will audit, monitor, and revise system security to

ensure appropriate levels of protection are achieved. Incident response and handling, security log analysis, attacker identification, system recovery and postmortem procedures will be addressed. Prerequisites: COSC 3474 - Cyber Defense I and COSC 4365 - Windows Security. Fall

COSC 4369 - Incident Response

3 sem. hrs. (3:0) This course focuses on the standards and technologies used to establish organization structures that will support information technology incident response, business continuity and disaster recovery efforts. This course introduces incident response, business continuity and disaster recovery planning concepts as well as tools and techniques. Topics include the development and implementation of incident response, business continuity and disaster recovery plans, attack traffic analysis, and network-based and host-based hardware and software. Concepts will be examined and evaluated with appropriate exercises. Prerequisites: COSC 3372 - Network Security. Spring

COSC 4370 - Models of Computation

3 sem. hrs. (3:0) A study of formal languages, grammars, and associated abstract machine models. Topics include regular and context-free languages and grammars, finite state automata, Turing machines, and the Chomsky hierarchy. Prerequisite: MATH 2305 - Discrete Mathematics I. Spring, odd years

COSC 4396 - Directed Independent Study

3 sem. hrs. (3:0) See College description. Offered on sufficient demand.

COSC 4590 - Selected Topics

1-5 sem. hrs. Variable content. May be repeated for credit depending on topic. Offered on sufficient demand.

COSC 4690 - Contracted Field Experience in Computer Science

1-6 sem. hrs. Individual contract agreement involving student, faculty, and cooperating agency to gain practical experience in off-campus setting. Prerequisite: Approval by Department.

Criminal Justice

CRIJ 1301 - Introduction to Criminal Justice

3 sem. hrs. History and philosophy of criminal justice. Overview of criminal justice system: police, prosecution and defense, courts, trial process, and corrections as they affect the individual, as well as their impact on society. The definition, nature, and impact of crime. The functions of criminal justice agencies will be examined in relation to common analytical themes such as ethics and discretion. TCCNS Equivalent: CRIJ 1301

CRIJ 1306 - Court Systems and Processes

3 sem. hrs. Examination of the civil and criminal legal systems and the roles played by political, social and economic factors in the administration of justice. Consideration of the roles and interests of litigants, defendants, police, attorneys, and the judiciary in the process. TCCNS Equivalent: CRIJ 1306

CRIJ 1310 - Fundamentals of Criminal Law

3 sem. hrs. The course will introduce students to the study of criminal law. Major topics include the sources of criminal law, the operation of the criminal courts, constitutional limitations on criminal law, the elements of criminal liability, and the classification of and punishments for different types of criminal offenses. Defenses to criminal liability will also be explored. TCCNS Equivalent: CRIJ 1310

CRIJ 2313 - Correctional Systems & Practices

3 sem. hrs. This course is a survey of institutional and non-institutional corrections. Emphasis will be placed on the organization and operation of correctional systems; treatment and rehabilitation; populations served; Constitutional issues; and current and future issues. TCCNS Equivalent: CRIJ 2313

CRIJ 2328 - Police Systems and Practices

3 sem. hrs. The history and development of police in America. Topics examined include: the police profession, organization of law enforcement systems, the policing role, police discretion, ethics, police-community interaction, current and future issues, and research findings. TCCNS Equivalent: CRIJ 2328

CRIJ 3302 - Police and Society

3 sem. hrs. Examination of policing in a democratic society. A critical review of various professional and community influences on police behavior, together with a consideration of social problems created by such forces, and potential remedial actions.

CRIJ 3313 - The Juvenile Justice System

3 sem. hrs. The administration of the juvenile justice process. Historical and philosophical origins of the juvenile justice system. A systematic analysis of problems and procedures at each stage of the process.

CRIJ 3315 - Crime Prevention

3 sem. hrs. Examination of traditional and innovative crime-prevention strategies. Consideration of the citizen's role in crime prevention. Analysis of factors related to the incidence and distribution of crime in relation to prevention tactics.

CRIJ 3320 - Issues in Corrections

3 sem. hrs. Analysis of contemporary developments, controversies and management concerns in the field of corrections. Includes examination of theoretical foundations of correctional policy.

CRIJ 3325 - Community-Based Corrections

3 sem. hrs. Examination of the correctional strategies and facilities available in community settings including diversion programs, probation, parole, half-way houses, boot camps, and restitution centers.

CRIJ 3340 - Comparative Criminal Justice

3 sem. hrs. Comparison of the police in selected countries with the U.S. criminal justice system. Particular emphasis on social, political, and economic factors in the development and change in law enforcement.

CRIJ 3341 - Terrorism

3 sem. hrs. Lecture An examination of political violence from criminological, legal, and political perspectives. Application to contemporary events is emphasized. The sociology, psychology, and organization of terrorist groups are also explored as well as counter-terrorism strategies, methods, and dilemmas.

CRIJ 3360 - Organized Crime

3 sem. hrs. The course analyzes and discusses how criminal organizations carry out their illegal activities while laundering money through legal enterprises. It discusses why people belong to organized crime syndicates despite the risks of death and imprisonment. The linkages of poverty, lack of education, social and economic inequalities, and the glorification of capitalist ideology by the phenomenon of organized crime are examined.

CRIJ 3361 - Drugs, the Drug War, and Criminal Justice

3 sem. hrs. This course is an analysis and discussion of drugs, the war on drugs, and how these two phenomena impact the criminal justice system in American society. There is a review of the common assumptions about drugs and its social implications. An examination of the sociocultural interconnections of the nature of drugs, drug use, drug trafficking, and drug policy from a justice perspective is presented.

CRIJ 3365 - Sex Crimes

3 sem. hrs. This course analyzes the nature, etiology, and theories related to sex offenses and sex offenders. It explores the history and current practices employed by the criminal justice systems to deal with sex offending. The course also examines multiple types of sexual offenses, perpetrators and victims, as well as the legal consequences of sexual offenses and its sociolcultural ramifications to grasp the complexity of these crimes.

CRIJ 3370 - Crime in the Media

3 sem. hrs. This course will cover the portrayal of crime, criminals, the criminal justice system, and criminal justice practitioners in the media. Specifically, the course will address the goals of the media and how those affect their coverage of crime and the CJ system.

CRIJ 3375 - Applied Statistics in Criminal Justice

3 sem. hrs. This course will teach students the step-by-step process for using statistical techniques that are most applicable in the field of criminal justice. It will teach them when, where, and why each statistical analysis is necessary and/or useful, and it will help students learn those skills by applying them to an actual project.

CRIJ 3380 - Victimology

3 sem. hrs. Victimology is the scientific study of crime victims and focuses on the physical, emotional, and financial harm victims suffer due to crime. The purpose of this course is to examine victim-offender relationships, the interactions between victims and the criminal justice system, and the connections between victims and other institutions (such as the media, advocacy groups, and government). In exploring these connections, students will address the theory, research, legislation, and policy implications related to victimization. Prerequisite: CRIJ 1301.

CRIJ 4085 - Major Field Test

0 sem. hrs. The Major Field Test (MFT) in Criminal Justice is a national examination given in the Fall and Spring semesters only. It is a graduation requirement for all Criminal Justice majors. Students enroll in this course during the semester that they plan to take the MFT. This should be the semester of graduation or the Spring semester for those planning a summer graduation. There is no cost to the student for either this course of for the MFT. Admission is limited to students who have completed 90 or more semester credit hours. Graded: CR/NC

CRIJ 4310 - Constitutional Law

3 sem. hrs. A case study of American constitutional law based on the leading decisions of the U.S. Supreme Court. Examination of the evolution of judicial review and the development of due process and the protection of individual rights.

CRIJ 4312 - Law and Evidence

3 sem. hrs. A detailed examination of the use, admissibility, and presentation of evidence. Issues and problems dealing with the rules of evidence and the theories on which those rules are based.

CRIJ 4313 - Criminal Procedure

3 sem. hrs. A detailed examination of the legal constraints on investigation and prosecution of criminal offenses. Analysis of the Texas Code of Criminal Procedure and of Search and Seizure Law under the Fourth Amendment, as well as other due process issues arising under the Fifth and Sixth Amendments.

CRIJ 4320 - Offender Rehabilitation

3 sem. hrs. Theories of rehabilitation, treatment, and correction of criminal offenders. Includes analysis of the historical development of the rehabilitative ideal and contemporary controversies surrounding it, and a survey of therapeutic models and methods.

CRIJ 4321 - American Prisons and Prisoners

3 sem. hrs. Analysis of the history, philosophy, and function of prisons. Examination of control and treatment of offenders in institutional settings. Focus is upon current developments, controversies and management problems.

CRIJ 4322 - Crime and Punishment in Literature

3 sem. hrs. A study of selected literary classics that treat of crime and punishment. The works of literary artists from various cultures which describe experience with crime and the criminal justice system will be placed in historical and theoretical perspective.

CRIJ 4324 - Women and Criminal Justice

3 sem. hrs. An historical and ideological analysis of the role of women in the criminal justice system as offenders, reformers, and professionals.

CRIJ 4325 - Diversity in Criminal Justice

3 sem. hrs. This course is an investigation into the impact of social diversity (race, ethnicity, gender, sexual orientation, disability, and more) on crime and the criminal justice system. Students will examine the impact of these factors on both offenders and criminal justice system employees, and will discuss and critically examine historical trends, contemporary events, and criminal justice system policies and laws.

CRIJ 4330 - Understanding Criminal Behavior

3 sem. hrs. This course examines various aspects of human behavior from a criminal justice perspective and is designed to give students a basic understanding of criminal behavior and psychological disorders which are encountered by criminal justice professionals.

CRIJ 4331 - Juvenile Delinquency

3 sem. hrs. Examination of the nature and extent of juvenile crime today. Analysis of the history and theory of delinquency and society's response to it. (Credit may not be given for both this course and SOCI 4331.) Cross listed with SOCI 4331.

CRIJ 4335 - Criminology

3 sem. hrs. An examination of the major sociological explanations for crime, criminal behavior, and the social responses to crime. (Credit may not be given for both this course and SOCI 4335.) Cross listed with SOCI 4335.

CRIJ 4340 - Criminal Investigation

3 sem. hrs. Critical examination of investigation methods and comparison of these to research methods. Advanced examination of investigative procedures, theory, supervision, and evaluative research. Some practical applications.

CRIJ 4345 - Research Methods in Criminal Justice

3 sem. hrs. This course is designed to help students gain a working understanding of the research process with direct application to criminal justice research. Attention will focus on various aspects of the research process including quantitative and qualitative methods. Students will complete literature reviews, create research proposals, conduct observations/interviews, and construct surveys in addition to various assignments and activities. Prerequisite: CRIJ 1301 or CRIJ 1313.

CRIJ 4351 - Police Supervision and Management

3 sem. hrs. Study of contemporary theories of management and supervision as they relate to law enforcement. Management concerns considered include planning, motivation, organizational communication, discipline, productivity, ethics, conflict, and job stress.

CRIJ 4360 - Intimate Relationship Violence

3 sem. hrs. Violence involving acquaintance, spouse, child, and elder abuse is examined within a theoretical construct relating violence to social responses. Alternative causal theories, prevention, counseling, administration, innovative programs, and inter-agency coordination are addressed.

CRIJ 4365 - White Collar Crime^

3 sem. hrs. Critical examination of widespread forms of offending and offenders typically omitted from traditional criminology and criminal justice courses. Critical exploration of white collar, corporate, environmental and governmental crimes/criminals.

CRIJ 4390 - Topics in Criminal Justice

3 sem. hrs. May be repeated for credit when topics vary.

CRIJ 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

CRIJ 4398 - Applied Experience^

3 sem. hrs. See College description. Offered on application.

Dance

DANC 1141 - Ballet I

1 sem. hrs. A beginning ballet dance course aligned with the Theatre, Dance, and Musical Theatre disciplines. The student will learn fundamentals of classical ballet; terminology, alignment, barre and floor technique, as well as genres of the contemporary styles.

DANC 1147 - Jazz Dance I

1 sem. hrs. A beginning jazz dance course aligned with the Theatre, Dance, and Musical Theatre disciplines. Students will be introduced to genres of the jazz dance from primitive ritual through contemporary musical theatre compositions.

DANC 1148 - Modern Dance I

1 sem. hrs. A beginning modern dance course aligned with the Theatre, Dance, and Musical Theatre disciplines. Students will be introduced to the fundamentals of Modern Dance using a variety of modern dance styles, including technique, progressive movement and dance performance.

DANC 1304 - Dance in Performance

3 sem. hrs. Students will be introduced to the fundamentals of choreography using a variety of dance styles and, using those skills, create dance intended for public performance. May be repeated for credit. TCCNS Equivalent: DANC 1304

DANC 2141 - Ballet II

1 sem. hrs. This course focuses on further development of classical ballet as an art form with an emphasis on intermediate to advanced level technique, musicality and performance.

DANC 2147 - Jazz Dance II

1 sem. hrs. This course is for the student with previous jazz dance training. Jazz Dance II emphasizes technique and terminology. The course will focus on improving quality of movement and developing complex rhythms and patterns through the understanding and flexibility of the variety of jazz styles taught.

DANC 2148 - Modern Dance II

1 sem. hrs. This course is geared toward the student with previous modern dance training. The student will continue to develop physical, conceptual and aesthetic skills and explore the principles of movement and language common with variety of modern dance techniques.

DANC 3141 - Ballet III

1 sem. hrs. This course focuses on further development of classical ballet, based on previous training in Ballet I and II, as an art form with an emphasis on intermediate/advanced level technique, musicality and performance. Prerequisites: DANC 1141 and DANC 2141.

DANC 3147 - Jazz Dance III

1 sem. hrs. This course focuses on the student who has taken Jazz I and II and executes the movement at an intermediate/advanced level. The course will focus on improving artistic expression within the quality of movement and developing complex technique and style through the understanding on rhythms and patterns of a variety of jazz styles. Prerequisites: DANC 1147 and DANC 2147.

DANC 3148 - Modern Dance III

1 sem. hrs. This course focuses on the student who has taken Modern Dance I and II. The student will continue to develop physical, conceptual and aesthetic skills and explore principles of movement and language common with the variety of modern dance techniques. Prerequisites: DANC 1148 and DANC 2148.

DANC 3303 - World Dance and Culture

3 sem. hrs. Offers a cross cultural and historical view of a variety of theatrical, vernacular and sacred dance forms and investigates ways that dance functions across societies. No background in dance is necessary to successfully complete this course.

TCCNS Equivalent: DANC 3303

DANC 3306 - Dance Choreography I

3 sem. hrs. Introduction to techniques and principles of the craft and art of choreography. Solo and group choreography is expected. May be repeated for credit.

DANC 3310 - History of Dance*

3 sem. hrs. In this course, the student will explore the history of dance from an interactive arts approach, examining and investigating dance from ancient civilization throughout the world to the emerging times of dance in the U.S.

DANC 4141 - Ballet IV

1 sem. hrs. This course focuses on further development of classical ballet, based on previous training in Ballet I, II and III as an art form with an emphasis on advanced level technique, musicality and performance. Can be repeated for credit. Prerequisites: DANC 1141, DANC 2141, and DANC 3141.

DANC 4147 - Jazz Dance IV

1 sem. hrs. This course focuses on the student who has taken Jazz Dance I, II and III and executes the movement at an advanced level. The course will focus on improving artistic expression within the quality of movement from Jazz Dance III and developing complex technique and jazz styles. Can be repeated for credit. Prerequisites: DANC 1147, DANC 2147, and DANC 3147.

DANC 4148 - Modern Dance IV

1 sem. hrs. This course focuses on the student who has taken Modern Dance I, II and III. The student will continue to develop physical, conceptual and aesthetic skills and explore the principles of movement and language common with a variety of modern and contemporary modern dance techniques. Can be repeated for credit. Prerequisites: DANC 1148, DANC 2148, and DANC 3148.

DANC 4306 - Dance Choreography II

3 sem. hrs. Demonstrate choreographic tools in the dance making process as it relates to group work; explore and create movement studies in groups as it pertains to art. May be repeated for credit. Prerequisite: DANC 3306 Dance Choreography I. TCCNS Equivalent: DANC 4306

DANC 4310 - Dance Instruction

3 sem. hrs. In this course, the student will research and explore the various modern philosophies of instruction and learn to apply those that are congruous with instructing dance as art in a variety of settings and to different age levels. Observation and instruction, combined with research satisfies the practical application portion of the course, while critiques from professionals in the field will serve as encouragement and confidence building for the future instructor in dance. May be repeated for credit.

DANC 4390 - Topics in Dance

3 sem. hrs. 3:0 This course will explore aspects of various dance techniques (ballet, jazz, contemporary, and hip hop infused) at the intermediate/advanced level, as well as repertory and yoga for dancers. Time allowing, we will delve into basic elements of choreographic composition.

DANC 4396 - Directed Individual Study (DIS)

1-3 sem. hrs. See college description. Course is available by application. Approval of Instructor

DANC 4398 - Applied Experience

3 sem. hrs. See college description. Course is available by application. Approval of Instructor

Early Childhood Education

ECED 3380 - Developmentally Appropriate Practice in Early Childhood Education

3 sem. hrs. An intensive study of developmentally appropriate practice in early childhood education. Students will learn the components of lesson plans and create several lesson plans. Emphasis will be placed on selecting, defining, developing strategies and techniques, and assessing practices which support developmentally appropriate practices. Prerequisite: ECED 2310 or ECED 3324.

ECED 4310 - Socialization of the Young Child

3 sem. hrs. An intensive study of the social development, the agents of socialization, and the socialization process in early childhood. Prerequisite: ECED 2310 or ECED 3324.

ECED 4320 - The Young Child, Family and Community Resources

3 sem. hrs. A study of current family structures, their relationship to the young child, society, and the community. Emphasis will be placed on an inclusive model which addresses the needs of the global community as it relates to the young child. Prerequisite: ECED 2310 or ECED 3324.

ECED 4330 - Health, Nutrition and Locomotor Concepts for the Young Child

3 sem. hrs. The relationship between health, nutrition, and locomotor development in the young child is investigated.

ECED 4340 - Communication and Aesthetics

3 sem. hrs. A study of language development; early literacy, language arts, and aesthetics. Students will develop an integrated thematic unit plan. Strategies and curriculum materials that are developmentally appropriate for young children will be emphasized to support the Texas Essential Knowledge and Skills (TEKS). Prerequisites: Junior standing and completion of ECED 3311 and ECED 3324.

Economics

ECON 1301 - Introduction to Economics*

3 sem. hrs.
Non-technical introduction to the structure and functioning of the aggregate economy and selected specific markets. Basic concepts regarding how markets function, regulation, monetary and fiscal policy in a macroeconomic context and some special topics of contemporary relevance are studied. Students are introduced to the basic concepts used in the social and behavioral sciences for measuring and interpreting economic and business conditions. This course cannot be taken to fulfill the Business Core or any Business Major requirements. It is recommended that students who might be interested in majoring in business or economics, take either ECON 2301 or ECON 2302 instead. TCCNS Equivalent: ECON 1301

ECON 2301 - Macroeconomics Principles*

3 sem. hrs. An overview of how the economy of the United States is organized and functions in a market price system. Market processes are used to show how resources and incomes are allocated by households and businesses. Determination of national income, employment, price level, interest rates, and growth are the focus of simple analysis techniques. Monetary and fiscal policies are examined including their international dimensions. Satisfies the social and behavioral sciences component of the University core curriculum. A student taking remedial courses in Basic English (ENGL 0399) and/or Mathematics (MATH 0300) is not recommended to take this course concurrently. TCCNS Equivalent: ECON 2301 Satisfies the economics component of the University core curriculum.

ECON 2302 - Microeconomics Principles*

3 sem. hrs. Demand and supply, consumer behavior, elasticity, production costs, perfect and imperfect market structures and models of the modern market price system are analyzed. Emphasis is on use of marginal analysis to determine prices, output, income and economic welfare in a market price system. Satisfies the social and behaviorial sciences component of the university core curriculum. A student taking remedial courses in Basic English (ENGL 0399) and/or Mathematics (MATH 0300) is not recommended to take this course concurrently. TCCNS Equivalent: ECON 2302 Satisfies the economics component of the University core curriculum.

ECON 2302.H01 - Microeconomics Principles

3 sem. hrs. Demand and supply, consumer behavior, elasticity, production costs, perfect and imperfect market structures and models of the modern market price system are analyzed. Emphasis is on use of marginal analysis to determine prices, output, income and economic welfare in a market price system. Satisfies the social and behaviorial sciences component of the university core curriculum. Prerequisite: A student taking remedial courses in Basic English (ENGL 0399) and/or Mathematics (MATH 0300) is not recommended to take this course concurrently. TCCNS Equivalent: ECON 2301

ECON 3310 - Intermediate Macroeconomics

3 sem. hrs. Theory of the determination of aggregate income, employment and prices is examined. Focus is on the microeconomic foundations of aggregate demand: consumption, investment, foreign trade, and government. Macroeconomic models from the basic through the complete model are examined for the U.S. and global economies. Prerequisites: ECON 2301, ECON 2302, and Junior standing or above.

ECON 3311 - Intermediate Microeconomics

3 sem. hrs. Examines supply and demand analysis, consumption theory, production theory, structure and performance of firms, efficiency of markets, and determination of general welfare in a market price system. Prerequisites: ECON 2301, ECON 2302, and Junior standing or above.

ECON 3312 - Money and Banking

3 sem. hrs. Description of the operations of banking and other financial institutions, examination of the basic tenets of monetary theory, analysis of monetary policy and its contribution to economic policy. Prerequisites: ECON 2301, ECON 2302 and Junior standing or above.

ECON 3315 - International Economic Issues

3 sem. hrs. Evaluates and analyzes various contemporary issues in international economics, using elementary economic theory and recent economic and financial data. The course includes issues such as economic integration, regionalization and globalization, international trade issues, the structure and role of international economic organizations, the foreign exchange market, and economic issues in developing countries. Prerequisites: ECON 2301 and Junior standing or above.

ECON 3316 - Environmental Economics

3 sem. hrs. Uses economic analysis to examine the underlying causes of environmental and natural resource problems, as well as alternative policy issues. The choice of environmental protection goals and the means of achieving them are analyzed and applied to the cases of air pollution (local and global), water pollution, and toxic pollution. The environmental policies of various countries are compared and studied from an economic perspective. Prerequisites: ECON 2301 or ECON 2302, and Junior standing or above.

ECON 3320 - Public Finance

3 sem. hrs. This course examines the role that government plays in the economy. The course discusses the conditions for economic efficiency to be achieved and circumstances where a market fails. It also presents the concepts of public goods and the aggregation of individual preferences into collective priorities as expressed by the general public through the political process. Topics include taxation, welfare economics, environmental and health externalities, cost-benefit analysis, and government budget. Prerequisites: ECON 2301, or ECON 2302, and Junior standing or above.

ECON 3322 - Managerial Economics

3 sem. hrs. Emphasis is on the use of economic principles to make sound business decisions. Students will use economic analysis, knowledge of markets and organizations to address real-world problems. The course emphasizes the role of the business economist as a member of the management team trying to find ways to improve the use of resources available to an organization. Prerequisites: ECON 2302, and Junior standing or above.

ECON 3335 - Labor Economics

3 sem. hrs. The study of labor theory and labor market processes to explain how household labor decisions are made and how household incomes are determined. The effects of labor market imperfections, and the effects of business decisions and labor

unions on labor market outcomes are also evaluated. Provides an overview of the U.S. labor movement, including its impact on federal legislation; labor theory; and contemporary labor issues. The effects of federal legislation are examined, including those on the competitiveness of U.S. labor in a global economy. Prerequisites: ECON 2301, ECON 2302, AND Junior standing or above.

ECON 3340 - Healthcare Economics

3 sem. hrs. The supply and demand for health services. Markets for health professionals and healthcare provider firms. Discusses the roles of insurance, managed care and HMO's, professional licensure, for-profit and not-for-profit provider firms, and information problems in health care markets; regulation, government financing of health care and health care reform issues in the U.S. Course Prerequisites: ECON2301 and ECON2302

ECON 4085 - Economics Exit Exam*

0 sem. hrs. 0:0 The Economics Exit Exam (EEE) is an exam given in the Fall and Spring semesters only. It is a graduation requirement for all students with a BBA degree in Economics. Students enroll in this course during the semester that they plan to take the EEE. Admission is limited to students who have completed 90 or more semester credit hours.

ECON 4310 - Introduction to Econometrics

3 sem. hrs. A study of the analysis of quantitative data, with special emphasis on the application of statistical methods to economic problems. The course covers the theory and practice of ordinary least squares regression, application to economics and finance, and selected special topics. Topics include heteroskedasticity, multicollinearity and autocorrelation, qualitative independent and dependent variables, and simple time-series analysis. Prerequisites: ECON 2301, ECON 2302, ORMS 3310 (or MATH 1324 or equivalent) and Junior standing or above.

ECON 4325 - Economics of European Integration

3 sem. hrs. An introduction to the economics of Western Europe, and by implication, the economic functions of the institutions of the European Union (EU). Students are introduced to economic policy issues which are currently of concern in the European Union, and the analysis of economic problems which are of particular relevance to European Union member states. These include (but are not limited to) the theory of customs unions, optimal currency area theory, the single market, competition policy, and

the external trade and development policies of the EU. Prerequisites: ECON 2301, ECON 2302, and Junior standing or above.

ECON 4340 - Topics in Health Economics and Healthcare Policy

3 sem. hrs. Examines some aspects of U.S. healthcare decision making and delivery system from an applied and behavioral economics perspective. Topics selected will show students how to apply the principles of economics to analyze healthcare outcomes and institutional effectiveness, as well as government decision making in healthcare. The scope of this course may include analysis of current trends and topics in the U.S. healthcare industry; the utilization and application quantitative skills required to understand and evaluate performance of healthcare organizations, health outcomes, and current healthcare issues. Course Prerequisites: ECON 3340, Health Care Economics

ECON 4388 - History of Economic Thought*

3 sem. hrs. A consideration of the philosophical basis, historical context, and development of economic thinking. Focuses on pre-20th-century economists-the Mercantilists, the Physiocrats, Adam Smith, David Ricardo, Karl Marx, and early neoclassical economists. Attention is also given to later economists and schools of thought as continuations and modifications of earlier ideas in economics. Prerequisites: ECON 3310, ECON 3311 and Junior standing or above.

ECON 4390 - Current Topics in Economics

1-3 sem. hrs. Selected topics for special study related to economics, the functioning of the economy or economic issues. May be repeated for credit when topics vary. Prerequisites: ECON 2301 or equivalent, and others depending on topic, and Junior standing or above. Contact the Dean's office for information.

ECON 4396 - Directed Individual Study*

1-3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

ECON 4398 - Internship in Economics

3 sem. hrs. Supervised full-time or part-time, off-campus training in a service, manufacturing, or public sector position. Oral and written reports required. Prerequisites: Completion of at least 12 semester credit hours toward a Minor in Economics, and Junior

standing or above. Students must apply to program and be accepted prior to registration. May not be repeated for credit.

Educational Curriculum and Instruction

EDCI 3350 - Investigating Student Learning in Middle Level Mathematics (3)

3 sem. hrs. This course is designed to investigate how students learn mathematics in the context of the middle level mathematics curriculum to include a survey of technologies and educational software to develop mathematical thinking.

EDCI 4350 - Assessment in Middle Level Mathematics

3 sem. hrs. This course is designed to help students identify and explore some of the key issues in assessing middle level mathematics. Students will develop assessment practices and a greater awareness of the implications of assessment practice on mathematics learning.

EDUC 2307 - Schooling in a Democracy*

3 sem. hrs. A course to enable citizens, parents, and prospective professional educators to synthesize their general education experiences/courses with current issues and practices related to teaching and learning in the United States. Career opportunities and personal commitments to the teaching profession will be explored. The systematic process of admission to the teacher education program will be initiated. Field observations in communities and schools will be required. TCCNS Equivalent: EDUC 1301

EDUC 3311 - School and Society^

3 sem. hrs. The characteristics, organization, and management of the American School System including: The history of the development of American schools, legal and ethical issues, teaching as a profession, influence of cultural background on instruction of students, characteristics and needs of special populations, and adapting curriculum and instruction for students from special populations. A student interview with Department of Teacher Education faculty will be required. Field experiences required.

EDUC 4312 - Classroom Management: Grades 7-12

3 sem. hrs. A study of classroom organization and management as related to basic principles of human development and learning. Preventative discipline techniques utilizing both group and individual processes are emphasized. This course is to be taken

concurrently with Planning, Teaching, Assessment and Technology for Grades 8-12 Teachers.

EDUC 4313 - Classroom Management: Grades 4-8

3 sem. hrs. A study of classroom organization and management as related to basic principles of human development and learning. Preventative discipline techniques utilizing both group and individual processes are emphasized. This course is to be taken concurrently with Planning, Teaching, Assessment and Technology for Grades 4-8 Teachers.

EDUC 4314 - Classroom Management: Grades EC-6

3 sem. hrs. A study of classroom organization and management as related to basic principles of human development and learning. Preventative discipline techniques utilizing both group and individual processes are emphasized. This course is to be taken concurrently with Planning, Teaching, Assessment and Technology for Grades EC-6 Teachers.

EDUC 4321 - Instructional Design for Special Populations

3 sem. hrs. A study of the characteristics and needs of special student populations in a culturally diverse society. Special populations emphasized will include special education, gifted and talented, at-risk, and bilingual. Instructional strategies, differentiating curriculum, and diversifying assessment will be examined in relation to special populations. This course is to be taken concurrently with clinical teaching.

EDUC 4322 - Instructional Design for Special Populations: Grades 7-12*^

3 sem. hrs. A study of the characteristics and needs of special student populations in a culturally diverse society. Special populations emphasized will include special education, gifted and talented, at-risk, and bilingual. Instructional strategies, differentiating curriculum, and diversifying assessment will be examined in relation to special populations. This course is to be taken concurrently with student teaching.

EDUC 4323 - Instructional Design for Special Populations: Grades 4-8*^

3 sem. hrs. A study of the characteristics and needs of special student populations in a culturally diverse society. Special populations emphasized will include special education, gifted and talented, at-risk, and bilingual. Instructional strategies, differentiating curriculum, and diversifying assessment will be examined in relation to special populations. This course is to be taken concurrently with student teaching.

EDUC 4324 - Instructional Design for Special Populations: Grades EC-6*^

3 sem. hrs. A study of the characteristics and needs of special student populations in a culturally diverse society. Special populations emphasized will include special education, gifted and talented, at-risk, and bilingual. Instructional strategies, differentiating curriculum, and diversifying assessment will be examined in relation to special populations. This course is to be taken concurrently with student teaching.

EDUC 4390 - Special Topics

1-3 sem. hrs. Topics in Curriculum and Pedagogy will be explored at the request of participants or faculty with the approval of the Department Chair, Dean, and Curriculum Coordinating Committee (CCC).

EDUC 4605 - Planning, Teaching, Assessment and Technology

6 sem. hrs. A study of planning, teaching, assessment and technology as they relate to teaching. Lesson planning, teaching, reflection, observation, and collaboration with site professors and cooperating teachers in the field are integral parts of the course. Admission to teacher education. Successful completion of all core curriculum requirements and special permission of chair.

EDUC 4606 - Planning, Teaching, Assessment and Technology for Grades 7-12 Teachers

6 sem. hrs. A study of planning, teaching, assessment and technology as they relate to teaching in grades 7-12. Planning will include general curriculum issues, the lesson cycle, multiple intelligences, learning styles and resources. Teaching will include methods and strategies for delivery of instruction and classroom environment. Assessment will focus on traditional and authentic alternative assessment. Technology will cover media and techniques from transparencies to computer technology, and will incorporate the skills and knowledge for using the microcomputer to plan and develop presentations, instructional materials, and learning activities in the public school curriculum. Observation and collaboration with professional teachers in the field, as well as journal writing, will be integral parts of the course. Two full days per week are required at a partner school site. A student may enroll in this course for a maximum of 2 times only; and it must be completed during the Fall or Spring semesters in order to successfully complete all requirements. Prerequisites: Admission to teacher education. Successful completion of thirty-nine (39) hours of general education requirements. This course will provide at least 6 hrs. of TExES preparation.

EDUC 4607 - Planning, Teaching, Assessment and Technology for Grades 4-8 Teachers

6 sem. hrs. A study of planning, teaching, assessment and technology as they relate to teaching in grades 4-8. Planning will include general curriculum issues, the lesson cycle, multiple intelligences, learning styles and resources. Teaching will include methods and strategies for delivery of instruction and classroom environment. Assessment will focus on traditional and authentic alternative assessment. Technology will cover media and techniques from transparencies to computer technology, and will incorporate the skills and knowledge for using the microcomputer to plan and develop presentations, instructional materials, and learning activities in the public school curriculum. Observation and collaboration with professional teachers in the field, as well as journal writing, will be integral parts of the course. Two full days per week are required at a partner school site. A student may enroll in this course for a maximum of 2 times only; and it must be completed during the Fall or Spring semesters in order to successfully complete all requirements. Prerequisite: Admission to teacher education. Successful completion of SMTE 1350 and READ 3321. Successful completion of SMTE 3315 or SMTE 3316. Successful completion of thirty-nine (39) hours of general education requirements. This course will provide at least 6 hrs. of TExES preparation.

EDUC 4608 - Planning, Teaching, Assessment and Technology for Grades EC-6 Teachers

6 sem. hrs. A study of planning, teaching, assessment and technology as they relate to teaching in grades EC-6. Planning will include general curriculum issues, the lesson cycle, multiple intelligences, learning styles and resources. Teaching will include methods and strategies for delivery of instruction and classroom environment. Assessment will focus on traditional and authentic alternative assessment. Technology will cover media and techniques from transparencies to computer technology, and will incorporate the skills and knowledge for using the microcomputer to plan and develop presentations, instructional materials, and learning activities in the public school curriculum. Observation and collaboration with professional teachers in the field, as well as journal writing, will be integral parts of the course. Two full days per week are required at a partner school site. A student may enroll in this course for a maximum of 2 times only; and it must be completed during the Fall or Spring semesters in order to successfully complete all requirements. Prerequisites: Admission to teacher education. Successful completion of SMTE 1350 and READ 3320. Successful completion of SMTE 3315 or SMTE 3316. Successful completion of thirty-nine (39) hours of general education requirements. This course will provide at least 6 hrs. of TExES preparation.

Education/Student Teaching

EDUC 4311 - Classroom Management

3 sem. hrs. A study of classroom organization and management as related to basic principles of human development and learning. Preventative discipline techniques utilizing both group and individual processes are emphasized. This course is to be taken concurrently with Planning, Teaching, Assessment, and Technology.

EDUC 4392 - Student Teaching: EC-Grade 6

3 sem. hrs. Laboratory experiences and directed teaching in grades EC-Grade 6. Prerequisite: Admission to Student Teaching. Must be taken with EDUC 4693 Student Teaching: Grades 7-12

EDUC 4393 - Student Teaching: Grades 7-12

3 sem. hrs. Laboratory experiences and directed teaching in grades 7-12. Prerequisite: Admission to Student Teaching. Must be taken with EDUC 4692 Student Teaching: EC-Grade

EDUC 4394 - Student Teaching: EC-Grade 6

3 sem. hrs. Laboratory experiences and directed teaching in grades EC-Grade 6. Prerequisite: Admission to Student Teaching. Must be taken with EDUC 4693 Student Teaching: Grades 7-12

EDUC 4693 - Student Teaching: Grades 7-12

6 sem. hrs. Laboratory experiences and directed teaching in grades 7-12 in the student's teaching field(s). Prerequisite: Admission to Student Teaching.

EDUC 4694 - Student Teaching: EC-Grade 6

6 sem. hrs. Laboratory experiences and directed teaching in grades EC-Grade 6. Prerequisite: Admission to Student Teaching. Must be taken with EDUC 4393 Student Teaching: Grades 7-12.

EDUC 4696 - Directed Individual Study

1-6 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies.

EDUC 4699 - Teaching Internship

6 sem. hrs. An internship designed for inservice teachers seeking certification under the post baccalaureate program. Grade assigned will be "credit" (CR) or "no credit" (NC). Prerequisite: Admission to Student Teaching.

EDUC 4992 - Student Teaching: Grades 4-8

9 sem. hrs. Laboratory experiences and directed teaching in grades 4-8 in the student's teaching field(s). Prerequisite: Admission to Student Teaching.

EDUC 4993 - Student Teaching: Grades 7-12

9 sem. hrs. Laboratory experiences and directed teaching in grades 7-12. Prerequisite: Admission to Student Teaching.

EDUC 4994 - Student Teaching: EC-grade 6

9 sem. hrs. Laboratory experiences and directed teaching in an EC-Grade 6 classroom. Prerequisite: Admission to Student Teaching.

EDUC 4995 - Clinical Teaching

9 sem. hrs. Laboratory experiences and directed teaching in student's certification area(s). Prerequisites: Admission to Clinical Teaching and special permission of chair.

Electrical Engineering

EEEN 4334 - Control Systems II

3 sem. hrs. Model identification and parameter estimation (least-square identification of an auto-regressive model; nonparametric identification in the time domain; and nonparametric identification in the frequency domain); Robust Control (Nyquist-plots, small-gain, and passivity); Optimal control (LQR/LQG for state-space systems and time-optimal controller for the positioning of a mass using force actuation); Nonlinear control (Lyapunov's stability method; feedback linearization controller for a fully actuated 2nd order mechanical system; backstepping for triangular nonlinear systems; actuator limitations); writing and presenting reports and analysis. Prerequisite: EEEN 3330 - Control Systems I or ENTC 4446 - Control Systems I or approval of instructor.

EEEN 4345 - Sensors and Systems

3 sem. hrs. (3:0) This course introduces sensors and sensing systems, and the acquisition, processing, and interpretation of signals obtained with selected sensors and systems. The

course will also cover sensing modalities, signal transmission and reception. Measurement and uncertainty in sensors and systems will be discussed as applied to signal noise and interference. Filtering and estimation will be introduced. Sensing systems for vision, monitoring, and control applications will be surveyed. Sensor interfacing, signal conditioning and transforms will be applied. Other topics include multidimensional signal and image processing, object tracking, multisensor data fusion, applications in environmental monitoring, remote sensing and surveillance. Prerequisites: MATH 2414 Calculus II and ENGR 2460 Circuit Analysis (or equivalent); offered in alternating Fall semesters

EEEN 4396 - Directed Independent Study

1-3 sem. hrs. (1-3) Requires a formal proposal of study to be completed in advance of registration, approval of supervising faculty and department chairperson. Prerequisites: Varies. Offered Fall, Spring, and Summer.

Elementary Education

ECED 3324 - Child Development

3 sem. hrs. Provides the student with an overview of the physical, social, emotional, and psychological development of children from infancy through early childhood.

ECED 4345 - EC-6 Assessment and Evaluation

3 sem. hrs. A study of assessment for children EC-6 utilizing both formal and informal instruments will be addressed. A knowledge of choosing, administering, and reporting developmental assessment will be explored with an emphasis on assessment tools that can be used by teachers of young children. Principles of designing and using assessment and evaluation techniques that are culturally fair, intellectually sound, reliable, and content-valid for young children. Differentiation among criterion-referenced, norm-referenced, individual, informal, authentic, and group assessments will be emphasized. Students will review strategies for using assessment data to design instruction, and match assessment techniques to individual children and learning situations

ECED 4350 - EC-6 Social Studies Curriculum

3 sem. hrs. This course will expose students to skills and concepts taught in the Social Studies curriculum in the elementary school. Developmentally appropriate strategies, concepts, and curricular materials used in teaching the Social Studies will be emphasized.

Prerequisites: Completion of ECED 3324, EDCI 3311 (or EDCI 5305 for MAC students) with the grade of "C" or better and completion or concurrent enrollment in ECED 3380.

ELEM 3324 - Child Development and Appropriate Practices

3 sem. hrs. Provides the student with an overview of the physical, social, emotional, and psychological development of children from infancy through early childhood.

ELEM 4345 - EC-6 Assessment and Evaluation

3 sem. hrs. A study of assessment for children EC-6 utilizing both formal and informal instruments will be addressed. A knowledge of choosing, administering, and reporting developmental assessment will be explored with an emphasis on assessment tools that can be used by teachers of young children. Principles of designing and using assessment and evaluation techniques that are culturally fair, intellectually sound, reliable, and content-valid for young children. Differentiation among criterion-referenced, norm-referenced, individual, informal, authentic, and group assessments will be emphasized. Students will review strategies for using assessment data to design instruction, and match assessment techniques to individual children and learning situations

ELEM 4350 - Social Studies

3 sem. hrs. This course will expose students to skills and concepts taught in the Social Studies curriculum in the elementary school. Developmentally appropriate strategies, concepts, and curricular materials used in teaching the Social Studies will be emphasized. Prerequisites: Completion of ECED 3324, EDCI 3311 (or EDCI 5305 for MAC students) with the grade of "C" or better and completion or concurrent enrollment in ECED 3380.

ELEM 4696 - Directed Individual Study

1-6 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies.

English

ENGL 0001 - Grammar I

0 sem. hrs. Grammatical structures that enable students to better comprehend and use academic English are the focus of the course. Students will learn to appreciate the relevance of acquiring and applying grammatical knowledge to express themselves

confidently and appropriately in different academic situations, as well as social situations relevant to the American college context.

ENGL 0002 - Listening and Speaking I

0 sem. hrs. This course provides short and focused activities to help students improve their English listening and speaking skills. It includes practice in both mastering the larger message and key words, phrases and specific sounds to assist students in developing better speaking and comprehension skills. Students will practice giving academic presentations as well as practice speaking in small groups and individually.

ENGL 0003 - Reading I

0 sem. hrs. In this course, students will develop the reading skills essential for academic learning and inquiry in the context of authentic academic reading tasks. Students will work to build fluency, comprehension, and vocabulary skills through extensive and intensive reading tasks of increasing complexity. Contemporary academic and literary texts will be used to develop students' critical reading and vocabulary, writing, listening, and speaking skills.

ENGL 0004 - Writing I

0 sem. hrs. In this course, students will learn and apply the writing skills essential for academic success including sentence, paragraph, and basic essay writing. This course is aimed at students planning to study, or are already studying, at university level in English.

ENGL 0005 - Recitation I

0 sem. hrs. This course provides students with a structured, scheduled academic environment providing the opportunity to complete assignments and work closely with their language instructor. Instructors utilize materials from student courses to facilitate activities and discussions that will increase comprehension of academic material and further students' abilities to work independently in academic settings. Each week, the course will focus on the language skills and vocabulary needed for the students' courses. Additionally, there will be a focus on study skills and time management needed for success in academic settings. Students will leave the course better equipped for university level academic course work and a thorough understanding of time management and appropriate study habits for the university.

ENGL 0011 - Grammar II

0 sem. hrs. This course will focus on high-intermediate grammatical structures that enable students to better comprehend and use academic English. Students will learn to appreciate the relevance of acquiring and applying grammatical knowledge to express themselves confidently and appropriately in different academic situations, as well as social situation relevant to the American college context.

ENGL 0012 - Listening and Speaking II

0 sem. hrs. In this course, students will learn and apply the listening, note-taking, and presentation skills essential for academic learning, inquiry, and communication in the context of authentic academic listening and speaking tasks. Students will work to build fluency, comprehension, and vocabulary skills through extensive and intensive listening tasks of increasing complexity. Contemporary academic lectures and seminars will be sued to develop students' critical thinking skills.

ENGL 0013 - Reading II

0 sem. hrs. In this course, students will study texts across several different academic disciplines in order to deepen their understanding of the rhetorical styles and conventions used and applied within the English language. Students will practice identifying audience, purpose, theme, main ideas, and details within several different genres of writing.

Students will also develop a variety of strategies to improve their reading comprehension and efficiency, including annotation, vocabulary-building, and discussions regarding written materials.

Online Classification: Face-to-Face 1-24%

ENGL 0014 - Writing II

3 sem. hrs. In this course, students will develop a foundation in the writing skills critical to academic success. Students will apply knowledge of audience, purpose, voice, arrangement, and style in varied writing tasks by writing across several different genres. Genres practiced in this course may include, but are not limited to: emails, newsletters, personal narratives, fiction, academic essays, and magazine/news articles. Students will learn grammar and vocabulary conventions as they apply to different genres and apply these skills in writing tasks of increasing complexity throughout the semester. Online Classification: Face-to-Face 1-24%

ENGL 0022 - Listening and Speaking III

0 sem. hrs. In this course students will learn and apply listening, note-taking, and presentation skills essential for academic learning, inquiry, and discourse in the context of authentic academic listening and speaking tasks. Students will work to build fluency, comprehension, and vocabulary skills through extensive and intensive listening tasks of increasing complexity. Contemporary academic lectures and seminar will be used to develop students' critical thinking skills.

ENGL 0023 - Reading and Writing III

0 sem. hrs. In this course students will improve upon and apply the reading skills essential for academic learning, inquiry, and discourse in the context of authentic academic reading tasks. Students will build vocabulary through extensive and intensive reading tasks of increasing complexity.

Contemporary academic tests about writing will be used to develop students' critical reading, academic vocabulary, and complex writing skills. There will e a number of in-class written tasks and prompts that will stimulate free writing practice and introduce students to various styles of writing. Students will also use these written tasks to develop editing skills through the writing process. The final project will be a collection of these written tasks in the form of a portfolio.

ENGL 0036 - US Culture

0 sem. hrs. This course will offer English Language Learners a means for analyzing and evaluating the complex social and moral issues that are specific to the social and moral landscape of the United States. As students examine their own cultures and compare them with others, culture shock and cultural conflict may be lessened and appreciation for cultural differences may be strengthened. Students will engage in interactive tasks, including researching and case analysis of topics and social, academic and professional issues, especially those suggested by the extensive reading component of this course. Through the process of reading, discussion, analysis and writing students in this class will enrich their understanding of today's global society while at the same time they are sharpening their academic English skills.

ENGL 0037 - Critical Thinking

0 sem. hrs. The purpose of this course is to develop the critical thinking skills needed to interpret and assess arguments and information. This course will highlight the language skills essential for critically analyzing and discussing the quality of the information and opinions presented in authentic texts and listening selections. The course will concentrate on detecting errors of reasoning in short and long passages, evaluating evidence in written and verbal arguments, detecting logical inconsistencies, removing vagueness and

ambiguity through word choice and phrasing, and identifying the point or purpose of someone's remarks. Through examining these topics, students will be able to thoughtfully respond to others' opinions in a clear, logical, and informed way. Students will leave the course better prepared to collect, synthesize, and evaluate information and feel more confident in presenting their perspectives in an academic setting.

ENGL 0099 - Integrated Reading and Writing Non-Course Based Development

0-5 sem. hrs. (0:0) ENGL 0099 is designed to develop student's critical reading and academic writing skills on an individualized basis through tutoring. The course fulfills TSI requirements for reading and writing. TSI compliance staff will approve each student for this course. Approval is based on test score and/or by academic standing.

ENGL 0399 - Integrated Reading and Writing

3 sem. hrs. A portfolio-based course with required tutoring (lab) time focused on the writing and reading processes, including strategies for invention, revision, and editing, and techniques of active reading, such as analysis, inference, summary, and evaluating texts. Students will enter ENGL 0399 through Texas Success Initiative (TSI) mandated remediation. (Not counted toward graduation) (Co-Requisite: ENGL 1301)

ENGL 1301 - Composition I

3 sem. hrs. Principles, techniques, and processes of written composition, textual analysis, and critical thinking. TCCNS Equivalent: ENGL 1301 Satisfies the university core curriculum requirement in composition

ENGL 1302 - Writing and Rhetoric*

3 sem. hrs. Introduces students to writing studies, rhetoric, and academic research (information literacy). Students will read, apply, and reflect on the current research and scholarship in writing studies, especially threshold concepts, kinds of knowledge about writing, and rhetoric. Students will learn how to transfer, deepen, and extend their ability to use writing in various contexts. TCCNS Equivalent: ENGL 1302 Satisfies the university core curriculum requirement in composition

ENGL 2303 - Introduction to Writing Studies

3 sem. hrs. This course will review current scholarship on writing studies, including threshold concepts, activity theory, and genre studies. It will consider various perspectives on the uses of writing to provide students with an intellectual and practical understanding of writing. This course provides a starting point for the more specific

studies of writing that occur in other writing studies courses. Prerequisites: Core Communication Component Area complete or permission from instructor.

ENGL 2316 - Literature and Culture*

3 sem. hrs. Introduction to literatures that raise aesthetic, cultural, social, and/or political issues that affect and reflect the human condition across regions, cultures, and nations. Sample topics: Crossing Borders, The City in Literature, Islands and Islanders, Science and Fiction. Pre-requisite: ENGL 1301. TCCNS Equivalent: ENGL 2331 May be used to satisfy the university core requirement in Language, Philosophy, and Culture.

ENGL 2332 - Literature of the Western World: From the Classics to the Renaissance*

3 sem. hrs. Study of important literary texts from the Ancient World to the Renaissance. Pre-requisite: ENGL 1301. TCCNS Equivalent: ENGL 2332 May be used to satisfy the university core curriculum requirement in literature.

ENGL 2333 - Literature of the Western World: From the Enlightenment to the Present*

3 sem. hrs. Study of important literary texts from the Enlightenment to the present. Pre-requisite: ENGL 1301. TCCNS Equivalent: ENGL 2333 May be used to satisfy the university core curriculum requirement in literature.

ENGL 2370 - Introduction to Literary Studies

3 sem. hrs. An introduction to literary analysis and scholarship for the intermediate writer. Emphasis placed on genres of literature, literary research, and expository and analytical composition. Familiarizes students with the various disciplines and related conversations within English Studies. Should be taken by sophomore-level English majors in the Literary Studies emphasis, and by Literary Studies and Creative Writing minors. Prerequisites: ENGL 1302.

ENGL 2371 - Exploring Social Media

3 sem. hrs. In this course we will examine and discuss current issues related to social media within a rhetorical framework. We will use different social media platforms to share and discuss in order to provide hands-on experience in these environments. Social media will be explored at the micro level as students will review their online social media presence to better understand how readers view them online. From the macro level we will identify current topics that affect the design and use of social media platforms and applications.

ENGL 3167 - English as a Second/Foreign Language Tutoring

1 sem. hrs. Students pursuing the Advanced TESOL Certificate will supplement ENGL 3367 (TESOL Seminar: Methods) with practical experience tutoring English learners. Students will write reflectively about those experiences. As needed, students will undergo site-specific training. ENGL 3367 (co-req)

ENGL 3301 - Technical and Professional Writing

3 sem. hrs. A course designed to help students gain practical experience in finding and interpreting information and writing reports and documents for specialized audiences in the technical and professional world. ENGL 3301 will be held in a computer-assisted classroom. Prerequisites: Core Communication Component Area complete or permission from instructor.

ENGL 3302 - Techniques of Creative Writing

3 sem. hrs. Introduces students to the theoretical knowledge and practical experience used in creative writing. Focuses on poetry, creative nonfiction, and short fiction. For all majors. Prerequisites: Core Communication Component Area complete or permission from instructor.

ENGL 3310 - Technical and Professional Writing for Computer Science

3 sem. hrs. Designed specifically for computer science majors, this course focuses on developing students ability to (1) use writing to communicate effectively with a range of audiences about technology; (2) identify, analyze, and appropriately integrate relevant information in their writing; (3) make informed judgments about their uses of writing based on ACM's and IEEE's code of ethics; and (4) develop their ability to function effectively individually and as members of a team to establish goals, plan tasks, meet deadlines, manage risk, and produce deliverables.

ENGL 3321 - Film and Literature

3 sem. hrs. Studies the connections between the formal elements of literature and of film, with emphasis on theme, narrative style, and genre. By viewing films based on literary sources, students will analyze how literature is adapted into film as well as identify strategies to view and read critically. For all majors. Prerequisites: ENGL 2316, 2332, and 2333.

ENGL 3323 - Young Adult Fiction

3 sem. hrs. Literary study of young adult literature through analysis, discussion, and interpretation. The course emphasizes literary issues connected with society, culture, history, and genre.

ENGL 3325 - Interdisciplinary Approaches to Literature

3 sem. hrs. In recent decades, it has become common to study literature in light of other disciplinary perspectives-and to study other disciplines as they are depicted in literature. From these interdisciplinary approaches has emerged a distinct mode of analysis that examines texts within their broader social and cultural milieu. In this course students will earn to use cross-disciplinary methods to interpret literature and culture. Topics will vary, but may include Religion, Medicine, and American Literature, Disability Narratives in the Eighteenth Century, Trauma and the City in Twentieth-Century Literature.

ENGL 3330 - Current Events and Literature

3 sem. hrs. This course examines literature in the context of current issues and events. Students will place literature in conversation with social, political, and cultural trends as a means of engaging with and understanding these trends and the debates associated with them. Using reading, writing, and discussion as modes of critical inquiry, students will discover the critical role that literature plays in representing, responding to, and shaping current events.

ENGL 3339 - Introduction to Linguistics

3 sem. hrs. Introductory survey course covering phonetics, morphology, syntax, semantics, sociolinguistics, neurolinguistics, and language acquisition.

ENGL 3340 - Grammar

3 sem. hrs. Presents a general descriptive overview of English grammar and provides a structural framework for analyzing English sentences.

ENGL 3341 - British Literature before 1800

3 sem. hrs. Study of significant works of poetry, drama, and prose before 1800 with emphasis on historical context and the exploration of literary and cultural values through written texts. Prerequisite or corequisite: ENGL 2370, or ENGL 2303, or instructor approval.

ENGL 3345 - British Literature since 1800

3 sem. hrs. Study of significant works of British poetry, drama, and prose since 1800 with emphasis on historical context and the exploration of literary and cultural values through written texts. Prerequisite or corequisite: ENGL 2370, or ENGL 2303, or instructor approval.

ENGL 3348 - Drama

3 sem. hrs. A genre-oriented study of dramatic literature, using a wide range of texts. Variable content.

ENGL 3349 - Poetry

3 sem. hrs. A genre-oriented study of poetry using a wide range of texts. Variable content.

ENGL 3354 - American Literatures before 1900

3 sem. hrs. Study of significant works of American poetry, drama, and prose from the country's pre-European beginnings to 1900 with emphasis on historical context and the exploration of literary and cultural values through written texts. Prerequisite or corequisite: ENGL 2370, or ENGL 2303, or instructor approval.

ENGL 3355 - American Literatures since 1900

3 sem. hrs. Study of significant works of American poetry, drama, and prose from 1900 to the present with emphaisis on historical context and the exploration of literary and cultural values through written texts. Prerequisite or corequisite: ENGL 2370, or ENGL 2303, or instructor approval.

ENGL 3360 - Current Approaches to Composition and Literature

3 sem. hrs. Prepares prospective teachers to create developmentally appropriate learning environments and tasks that enable student success in writing and the study of literature in Language Arts and English courses. Prepares students to meet the increased writing and reading expectations in all subject areas, including their own writing. Prerequisite: One Reading Course.

ENGL 3361 - Strategies and Genres of Advanced Writing

3 sem. hrs. Students will practice-writing in situated contexts (such as their majors, careers, and/or other professional interests) and across genres to develop more advanced and reflective writing strategies. By studying theories of writing; engaging in writing as a

craft; and drafting, revising, and editing texts; students will refine and become more reflective in their writing processes.

ENGL 3362 - Creative Writing Workshop: Survey and Practice of Genres

3 sem. hrs. Develops students' skills as critics and writers of fiction, poetry, and creative nonfiction in a workshop setting. For all majors. Prerequisite: Core Communication Component Area complete or permission of instructor.

ENGL 3363 - Foundations of Rhetoric

3 sem. hrs. This course will study the historical and theoretical development of rhetoric through the works of principal thinkers. Students will analyze rhetorical concepts in their relation to civic, cultural, political, and pedagogical developments and the construction of knowledge and will use rhetorical concepts to produce logical, ethical, and moral arguments. Prerequisites: Core Communication Component Area complete or permission from instructor.

ENGL 3363.H01 - Honors Rhetoric

3 sem. hrs.

A study of the historical and theoretical development of rhetoric within the works of principal thinkers in the classical period, the Enlightenment, and the contemporary period. The analysis of rhetorical concepts in their relation to civic, cultural, political, and pedagogical developments and the construction of knowledge.

ENGL 3364 - Strategies of Writing Creative Nonfiction

3 sem. hrs. Explores the uses of creative nonfiction through reading and writing about published works of experienced writers and scholars in the field and practicing a variety of creative nonfiction techniques and genres (e.g. literary journalism, memoir, and the personal narrative). Prerequisite: Core Communication Component Area complete or permission of instructor. For all Majors.

ENGL 3365 - Second Language Acquisition

3 sem. hrs. This course is an introduction to second language acquisition. The course is designed to be accessible to students from a wide variety of backgrounds and no basic knowledge of the linguistic structure of English will be assumed. This course will address issues related to how second language is learned by both children and adults.

ENGL 3366 - Language in Society

3 sem. hrs. An introduction to the study of language as a function of several societal variables. Introduces basic concepts of language such as linguistic varieties, dialect, speech communities, and linguistic attitudes.

ENGL 3367 - TESOL Seminar

3 sem. hrs. This course presents an introduction to and a critique of current and traditional methodologies of teaching English to speakers of other languages, with emphasis on aural comprehension; speaking, reading, and writing skills; testing and assessment; and linguistic-cultural differences. This course is open to all majors, but is required for students seeking the Certificate in TESOL. ENGL 3365 Second Language Acquisition or Approval of Instructor

ENGL 3369 - Topics in Linguistics

3 sem. hrs. Exploration of topics such as second language acquisition, language assessment, history of English, and contrastive analysis. May be repeated when topics vary.

ENGL 3378 - Document Design and Publishing

3 sem. hrs. Focuses on the integration of text and visual rhetoric, such as graphics, for all kinds of professional publications including technical documents, media, public relations pieces, and advertisements.

ENGL 3379 - Writing for the Web

3 sem. hrs. Emphasizes practical concepts related to writing and communication on the internet and the World Wide Web. Attention is given to finding and analyzing information; analyzing and designing WWW sites and other digital, hypertextual environments; and analyzing and composing hypertext-hypermedia materials for digital, networked environments. For all majors.

ENGL 3380 - Visual Rhetoric

3 sem. hrs. Focuses on the analysis, design, and production of visual representations and multi-modal texts that integrate visual elements.

ENGL 4123 - Nonprofit Writing Project

1 sem. hrs. Students will gain practical experience with a nonprofit agency by developing a significant project that meets an agency identified need. Students should take this course in the last semester of their nonprofit certificate program in conjunction with one of the following: ENGL 3378, ENGL 3379, ENGL 4322, or ENGL 4321. The students' professor in the regular course will be the instructor of record for a the projects course.

ENGL 4300 - Technologies and Cultures of the Book

3 sem. hrs. Working with a range of print media, students will learn to analyze the interplay between the text's content and its formal features. Students will build the skills to think and write analytically about the materiality of texts.

ENGL 4305 - Major Authors

3 sem. hrs. This course studies the significant works of a major literary author. Texts are viewed through a variety of critical perspectives and placed in the context of the writer's life and of the society, culture, and history of the times. May be repeated once for credit when authors vary.

ENGL 4320 - Professional Writing Workshop

3 sem. hrs. This course is tailored for individual students' writing and publishing projects in their disciplines.

ENGL 4321 - Grants and Proposals

3 sem. hrs. This course will teach students the grant proposal writing process, including identifying sources of funding, conducting research to support funding applications, and tailoring each proposal to a specific funding agency. Students will receive experience writing actual proposals on behalf of local organizations and agencies.

ENGL 4322 - Writing in the Nonprofit Agencies

3 sem. hrs. Focuses on the specific kinds writing of professionals in the nonprofit world do, including internal communication in an agency, writing for the public, document creation, fund raising, board relations, and other relevant topics.

ENGL 4324 - Editing & Style

3 sem. hrs. Practice in methods, tools, and principles of editing for nonfiction and technical publications. Emphasis on a rhetorical understanding of levels of editing, managing the editorial process, and grammar and style.

ENGL 4325 - Writing Across Cultures and Contexts

3 sem. hrs. Through writing, students will study how groups perceive, understand, and communicate with and about each other. The course may focus on a specific type of writing (cross cultural expository writing, travel writing, cross cultural writing in industry), or on the linguistic and rhetorical practices of a cross-cultural community (latino/a rhetoric, African-American rhetorics, etc).

ENGL 4335 - Creative Writing Studio: Development of Craft

3 sem. hrs. Develops students' skills as critics and writers of fiction, poetry, and creative nonfiction in a studio setting. Guides students to focus on a major project in one genre with sustained practice of techniques and revision. Open to students of all levels, from the novice to the advanced. For all majors. Prerequisites: Core Communication Component Area complete or permission of instructor.

ENGL 4340 - The Novel

3 sem. hrs. A genre-oriented study of long-form prose fictions, using a wide range of texts. Variable content.

ENGL 4345 - Rhetorics, Literacies, and Writing

3 sem. hrs. This course examines the history and major theories of rhetoric, literacy, and composition, and explores how they influence contemporary cultural productions.

ENGL 4350 - Studies in Poetics: Theory, Form, and Practice

3 sem. hrs. Develops students' theoretical knowledge of poetics and practical experience of writing in traditional forms, from the Anglo-American tradition to the culturally diverse movements and innovation of form. Focusing on works written by poets about poetry and poetics primarily from the 19th to the 21st centuries. For all majors. Prerequisite: Core Communication Component Area complete or permission from instructor.

ENGL 4351 - Senior Capstone: Literature and Writing

3 sem. hrs. A study of literature in English for graduating seniors in the Literary Studies Emphasis. Emphasis is placed on genre, research, and analytical expository writing. Prerequisite: ENGL 2370 or ENGL 2303. This course should be taken during the student's final year of academic study.

ENGL 4352 - Capstone in Writing Studies

3 sem. hrs. This course is the culminating experience for the Writing Studies emphasis in English. Students review, reflect on, integrate, and apply their learning from previous courses and experiences. Students create digital portfolios for career and publishing opportunities, emphasizing selection, revision, reflection, and presentation. In addition, students identify, evaluate, and annotate texts and resources to include in a curated digital collection/publication that will be available for students in future Writing Studies courses.

ENGL 4360 - Gender, Sexuality and Literature

3 sem. hrs. This course introduces students to literature that explores issues of gender and sexuality. It focuses on relevant literary periods and conventions, as well as on the historical, social, and cultural contexts of artistic productions. Sample topics: women's literature, queer literature, literature and masculinity.

ENGL 4361 - Race and Ethnicity in Literature

3 sem. hrs. Topics focus on a variety of cross-cultural issues in historical and/or contemporary texts by Caribbean, British Indian, Native American, African American, Chicano/a, and/or other underrepresented authors.

ENGL 4362 - Texts and Contexts

3 sem. hrs. Study of literary and cultural texts that raise issues of community and social relations, diversity, multiculturalism, and/or globalization. Sample topics: Medicine and Religion in American Literature, Traveling Histories, the Global City, and Literary Regionalism in Transnational Context. May be repeated once for credit when topics vary.

ENGL 4370 - Oral Interpretation of Children's Literature

3 sem. hrs. A study, primarily through the medium of performance, of various types and forms of literature for children. Strongly oriented toward teaching literature in the elementary school classroom. (Credit may not be given for both this course and COMM 4323 or THEA 4323.)

ENGL 4380 - Critical Approaches to Literature and Culture

3 sem. hrs. A study of selected perspectives and critical approaches to literature and culture, including an examination of some of the theoretical assumptions upon which they are based, as well as their implications for the way we think about literature, human identity, and the power of language. Prerequisite: ENGL 2370.

ENGL 4385 - Studies in Creative Writing

3 sem. hrs. Students will focus on the craft of a specific genre or type of writing through reading experts' advice, reading and analyzing examples written by practitioners, and engaging in peer-response workshops with classmates. Attention will be paid to publication opportunities available for writers in that genre.

ENGL 4390 - Topics in Literary Studies

3 sem. hrs. May be repeated when topics vary—see S.A.I.L. or advisor for further information.

ENGL 4391 - Topics in Writing Studies

3 sem. hrs. May be repeated when topics vary--see S.A.I.L. or advisor for further information.

ENGL 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

ENGL 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application.

ENGL 4399 - TESOL Practicum

3 sem. hrs. Practical experience teaching English to second language learners. Students will observe, plan, and teach ESL lessons. Instructional support provides opportunities to discuss and reflect upon teaching experiences and help students connect theory, methods, and practice. This course enhances the TESOL Certification, but is not required for it. Cannot be repeated for credit. Approval of Instructor. Completion of ENGL 3339, 3340, 3365, 3367 preferred.

Engineering

EEEN 3310 - Electromagnetic Theory

3 sem. hrs. (3:0)
An introduction to the theory of static and dynamic electromagnetic fields with a focus on engineering applications. Principles will be illustrated with applications in various areas. Topics include computational electromagnetics, transmission lines, antennas,

electromagnetic interference, and signal propagation in high speed circuits. Prerequisites: PHYS 2426 University Physics II, MATH 2415 Calculus III, MATH 3315 Differential Equations , EEEN 3315 Electrical Circuits II Offering: Spring

EEEN 3315 - Electrical Circuits II

3 sem. hrs. (3:0) AC circuit analysis principles: AC generation, periodic functions, complex numbers, phasors, impedance and admittance, network theorems, power, frequency response, filters, transformers, and balanced three-phase systems; and use of analysis software. Prerequisite: ENGR 2305 - Electrical Circuits or ENGR 2460 - Circuit Analysis. Offering: Fall and Spring.

EEEN 3320 - Introduction to Communication Theory and Systems

3 sem. hrs. (3:0) Frequency domain and time domain response of linear systems; analog modulation methods including amplitude modulation, frequency modulation and phase modulation; signal and noise modeling using probabilistic descriptions; narrowband random processes and the performance of analog modulation techniques in the presence of noise; design of communication links. Prerequisite: ENGR 2305 - Electrical Circuits + ENGR 2105 - Electrical Circuits Laboratory, or ENGR 2460; and MATH 3345 - Statistical Modeling and Data Analysis . Offered: Fall and Spring

EEEN 3330 - Control Systems I

3 sem. hrs. (3:0) Introduction to control systems; open and feedback; Laplace transform and frequency response; control valves; electric motors; P, PI, and PID modes of control; analog and digital controllers Process characteristics; analysis of control systems; gain and phase margin; stability. Prerequisite: ENGR 2305 - Electrical Circuits or ENGR 2460 - Circuit Analysis. Offering: Spring.

EEEN 3350 - Electronic Systems Design

3 sem. hrs. (3:0) Principles of engineering design of electronic circuits and systems; time and frequency responses; network analysis; systems specifications; evaluation, testing, and verification; use of electronic design automation tools. Prerequisites: ENGR 2306 - Digital Systems, ENGR 2305 - Electrical Circuits or ENGR 2460 - Circuit Analysis or equivalent, and EEEN 3315 - Electrical Circuits II. Offered: Fall and Spring.

EEEN 3418 - Microprocessors and Microcontrollers

4 sem. hrs. (3:3) Introduction to microprocessor/microcontroller architecture, assembly language programming, and interfacing. Topics include computer organization, addressing modes, instruction set, interrupts, timing, memory, and interfacing. Prerequisite: COSC 1320 - C Programming, ENGR 2306 - Digital Systems, and ENGR 2106 - Digital Systems Laboratory.

EEEN 4240 - Project Management

2 sem. hrs. (2:2)
Foundations of engineering economy, cash flow and equivalence, and project justification. Introduction to project management, planning, scheduling, and control, use of project management software, GANTT charts, PERT charts, and critical path. Students prepare proposals, including specifications, timelines, schedule, and budget, for projects to be implemented in EEEN 4370 - Capstone Projects. This course should be taken the semester preceding EEEN 4370 Capstone Design. Prerequisite: EEEN 3330 Control Systems I, EEEN 3310 Electromagnetic Theory, and EEEN 3350 Electronic Systems Design

EEEN 4310 - Signal Processing

3 sem. hrs. (3:0) Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prequisites: EEEN 3320 Introduction to Communications Theory and Systems and EEEN 3330 Control Systems I. Offering: Fall

EEEN 4330 - Introduction to Plasma Engineering and Applications

(3:0) Physical, electrical, chemical properties of plasmas; differences in properties of thermal and non-thermal plasmas, direct and alternating current plasma sources, inductive and capacitive coupled plasma sources, diagnostics and applications of plasmas. Prerequisites: ENGR 3322 Materials Science , ENGR 2460 Circuit Analysis OR ENGR 2305 Electrical Circuits OR PHYS 2426 University Physics II

EEEN 4333 - Machine Vision and Image Processing

3 sem. hrs. (3:0) Introduces students to automated vision systems and components, camera models, testing and measurement, and fundamentals of image processing. Topics include image analysis and processing in binary, gray scale and color images in spatial- and frequency-domain. Texture and shape analysis, hyperspectral imaging, other transforms, and filters are discussed and applied. Prerequisites: COSC 1320 C

Programming or COSC 1435 Introduction to Problem Solving with Computers I , ENGR 2460 Circuit Analysis or ENGR 2305 Electrical Circuits , and MATH 2414 Calculus II and EEEN 4310 Signal Processing.

EEEN 4370 - Capstone Design

3 sem. hrs. (1:5)
This course allows students to employ the knowledge attained in other courses to implement (including building, testing, and documenting) an approved project, within budget and on schedule. Course requirements include a written report and oral presentations. Prerequisite: EEEN 4240 - Project Management . Corequisites: EEEN 4333 Machine Vision and Image Processing , COMM 1315 Public Speaking Public Speaking. To be taken in the student's final long semester before graduation.

EEEN 4390 - Special Topics

3 sem. hrs. (3:0) Course that addresses a specialized field in electrical engineering. Prerequisites differ according to the course being offered.

ENGR 1211 - Introduction to Engineering

2 sem. hrs. (1:2) Introduction to the engineering profession, ethics, and disciplines; development of skills in teamwork, problem solving and design; other topics include computer applications and programming; visualization, orthographic drawings and CAD tools; introduction to electrical circuits, semiconductor devices, digital logic, communications and their application in systems; Newton's laws, unit conversions, statistics, Excel; basic graphics skills. Offering: Fall and Spring. Pre-req: MATH 1314 - College Algebra or equivalent academic preparation. TCCNS Equivalent: ENGR 1201

ENGR 1312 - Engineering Graphics I

3 sem. hrs. (2:2) Topics include, depending on the major: emphasis on computer applications and programming and solids modeling using CAD tools or other software; fundamentals of engineering science; advanced graphic skills. Offered Fall and Spring. Pre-req: MATH 1314 - College Algebra or equivalent academic preparation. TCCNS Equivalent: ENGR 1304

ENGR 2105 - Electrical Circuits Laboratory

1 sem. hrs. (0:3) Laboratory experiments supporting theoretical principles presented in ENGR 2305 involving DC and AC circuit theory, network theorems, time, and frequency domain circuit analysis. Introduction to principles and operation of basic laboratory

equipment; laboratory report preparation. Prerequisite or co-requisite: ENGR 2305 - Electrical Circuits or equivalent.

ENGR 2106 - Digital Systems Laboratory

1 sem. hrs. (0:3)
Basic laboratory experiments supporting theoretical principles presented in ENGR 2306 involving design, construction, and analysis of combinational and sequential digital circuits and systems, including logic gates, adders, multiplexers, encoders, decoders, arithmetic logic units, latches, flip-flops, registers, and counters; preparation of laboratory reports.

Co-requisite: ENGR 2306 Digital Systems

ENGR 2305 - Electrical Circuits

3 sem. hrs. (3:0) Principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources). Topology of electrical networks; Kirchhoff 's laws; node and mesh analysis; DC circuit analysis; operational amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; Bode plots; and use of computer simulation software to solve circuit problems. Prerequisites: PHYS 2425 - University Physics I, MATH 2414 - Calculus II. Co-requisite: ENGR 2105 - Electrical Circuits Laboratory.

ENGR 2306 - Digital Systems

3 sem. hrs. (3:0) Introduction to theory and design of digital logic, circuits, and systems. Number systems, operations and codes; logic gates; Boolean Algebra and logic simplification; Karnaugh maps; combinational logic; functions of combinational Logic; flip-flops and related devices; counters; shift registers; sequential logic; memory and storage. Prerequisite: MATH 1314 - College Algebra. Co-requisite: ENGR 2106 - Digital Systems Laboratory. Prerequisite or co-requisite: MATH 2305 - Discrete Mathematics I. Offered: Fall and Spring.

ENGR 2325 - Statics

3 sem. hrs. (3:0) Theory of engineering mechanics involving forces, moments, and couples on stationary structures; equilibrium in two and three dimensions; free body diagrams; truss analysis; friction; centroids; centers of gravity and moments of inertia. Prerequisite: PHYS 2425 - University Physics I and pre-req/co-req: MATH 2414 - Calculus II. Offering: Fall Spring. TCCNS Equivalent: ENGR 2301

ENGR 2326 - Dynamics

3 sem. hrs. (3:0) Theory of engineering mechanics involving the motion of particles, rigid bodies and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems. Prerequisite: ENGR 2325 - Statics. Offered: Fall Spring. TCCNS Equivalent: ENGR 2302

ENGR 2460 - Circuit Analysis

4 sem. hrs. (3:3) This course covers principles of electronics: charge, voltage, resistance, current, and power; Ohm's Law; Kirchhoff's voltage and current laws; RC and LC circuits; periodic functions, average and RMS measurements; transformers, electrical measurement instruments. The laboratory provides hands-on experience with devices and circuits discussed in the classroom. Prerequisites: PHYS 2426 - University Physics II and MATH 2414 - Calculus II and pre/co req MATH 3315 - Differential Equations or equivalent. Offered: Fall/Spring TCCNS Equivalent: ENGR 2305

ENGR 3315 - Fluid Mechanics

3 sem. hrs. (3:0) Fluid properties, fluid statics, dynamics, and kinematics, conservation of energy and momentum incompressible, laminar and turbulent flow. Similitude and dimensional analysis, and viscous flow. Prerequisites: ENGR 2326 - Dynamics and MATH 2415 - Calculus III. Prerequisite or corequisite: MATH 3315 - Differential Equations. Offered: Fall Spring

ENGR 3316 - Thermodynamics

3 sem. hrs. (3:0) Theory and application of energy methods in engineering; conservation of mass and energy; energy transfer by heat, work and mass; thermodynamic properties; analysis of open and closed systems; the second law of thermodynamics and entropy; gas, vapor and refrigeration cycles. Prerequisites: PHYS 2425 - University Physics I and MATH 2414 - Calculus II. Offering: Fall, Spring

ENGR 3320 - Strength of Materials

3 sem. hrs. (3:0) Concepts in strength of materials, stress, strain; deformation under load, direct, shear, and combined stresses; stress concentrations, bending stresses and torsional shear stresses, deflection in beams and shafts; columns, and pressure vessels. Prerequisite: ENGR 2325 - Statics and ENGR 3322 - Materials Science . Offered: Fall Spring TCCNS Equivalent: ENGR 2332

ENGR 3322 - Materials Science

3 sem. hrs. (2:3) Structure and properties of metallic and nonmetallic materials; microstructure, mechanical testing, phase diagrams, heat treatment, testing, ceramics, polymers, composites, construction materials, failure analysis, nondestructive evaluation, corrosion and thermal properties of materials. Prerequisites: CHEM 1411 - General Chemistry I*, PHYS 2425 - University Physics I. Offering: Fall, Spring

ENGR 3350 - Manufacturing Processes

3 sem. hrs. (2:3) Introduction to metal and non-metallic manufacturing processes; casting, forging, rolling, extrusion, sheet metal forming, cutting tools turning and milling operations, abrasive machining, welding and joining, powder compaction, molding, forming of plastics, surface treatment, human factors and safety. Prerequisite: ENGR 1312 - Engineering Graphics I, and ENGR 3322 Materials Science . Offered: Fall Spring

ENGR 4240 - Project Management

2 sem. hrs. (1:2) Foundations of engineering economy, cash flow and equivalence, and project justification. Introduction to project management, planning, scheduling, and control, use of project management software, GANTT charts, PERT charts, and critical path. Students prepare proposals, including specifications, timelines, schedule, and budget, for projects to be implemented in ENGR 4370 - Capstone Projects. This course should be taken the semester preceding ENGR 4370 - Capstone Projects. Prerequisite: MEEN 3330 - Solid Mechanics for Mechanical Engineering and MEEN 3345 - Heat Transfer, OR EEEN 3330 Control Systems I, EEEN 3310 Electromagnetic Theory, and EEEN 3350 Electronic Systems Design.

In good academic standing with the Department of Engineering (minimum GPA of 2.25 in major).

Offered: Fall and Spring.

ENGR 4350 - Machine Vision and Image Processing Applications

3 sem. hrs. (3:0) Introduces students to automated vision systems and components, camera models, testing and measurement, and fundamentals of image processing. Topics include image analysis and processing in binary, gray scale and color images in spatial- and frequency-domain. Texture and shape analysis, hyperspectral imaging, other transforms, and filters are discussed and applied. Prerequisites: COSC 1330 - Programming for Scientists, Engineers, and Mathematicians or COSC 1435 -

Introduction to Problem Solving with Computers I , and ENGR 2460 - Circuit Analysis , and MATH 2414 - Calculus II. Offered: As needed

ENGR 4370 - Capstone Projects

3 sem. hrs. (1:5) This course allows students to employ the knowledge attained in other courses to implement (including building, testing, and documenting) an approved project, within budget and on schedule. Course requirements include a written report and oral presentations. Prerequisite: ENGR 4240 - Project Management. Prerequisite or Corequisite: MEEN 4360 - Thermal Systems Design and MEEN 4365 - Mechanical Systems Design, OR EEEN 4333 Machine Vision and Image Processing, OR CEEN 4304 - Civil and Construction Materials, OR IEEN 4310 - Process Engineering. Offered: Fall and Spring. To be taken in the student's final long semester before graduation.

ENGR 4390 - Special Topics in Engineering

1-3 sem. hrs. Subject material variable. May be repeated for credit when topics are different. Prerequisite: Junior or senior level standing, specifics vary depending upon topic. Offered: As needed Offered on demand. May be repeated for a total of 6 hours.

ENGR 4420 - Engineering Lab Measurements

4 sem. hrs. (2:4) Principles of physical measurements; standards, calibration, error estimation; static and dynamic performance of measuring systems; laboratory experience, experiment planning, report writing. The purpose of this course is for students to gain proficiency in designing, assembling, and operating an experiment; and analyzing and presenting experimental results. This encompasses skills such as an understanding control and data acquisition electronics, operation and limitation of modern sensors, calibration and error analysis, assessing applicability of theory and the impact of secondary experimental variables, and writing and presenting reports and analysis. Offered Fall and Spring. Prerequisite: ENGR 2460 Circuit Analysis (or equivalent) and senior standing.

ENGR 4444 - Engineering Measurements

4 sem. hrs. (3:3)
A very significant part of designing electronic instruments involves selecting the appropriate physical devices to translate quantities to be measured into voltages or currents that can be sensed with electronic circuits. The range of sensors and transducers available will be studied with examples from industry and medical instrumentation. The course will explore in some detail the use of analog to digital (A/D) and digital to analog (D/A) converters and their applications. Students will also learn to use complete A/D-

microprocessor-D/A systems since these are part of nearly all instruments now. In this course students will learn to build a complete instrument by combining analog and digital components and using advanced algorithms. We will review the basic concepts from analog electronics and real-time event driven programming one needs to understand in order to construct such instruments and experiment through a series of labs. Prerequisites: EEEN 2306 Digital Systems, EEEN 3315 EEEN 3315 - Electrical Circuits II Offered: Fall

Engineering Technology

EEEN 3345 - Electronic Devices and Circuits

3 sem. hrs. (3:0) The applications of electronic devices, including linear and non-linear Op-Amp circuits, oscillators, wave-shaping circuits, active filters, rectifiers, voltage regulators, and power supplies; industrial electronics. Prerequisite: EEEN 3315 - Electrical Circuits II. Offered Fall and Spring.

EEEN 4331 - Power Transmission and Distribution

3 sem. hrs. (3:0) This course covers principles of power transmission and distribution. Topics include unbalanced distribution; point to point measurements, operation control of systems; power systems; transmission lines; fault analysis; line modeling and unit analysis. Prerequisites: EEEN 3315 - Electrical Circuits II (or equivalent), and senior standing. Offered Fall or Spring.

EEEN 4332 - Power Protection Systems

3 sem. hrs. (3:0) Course topics include safety, reliability and availability in power systems; breaker operation; relay operation and relay circuit design; fault tolerance; cost analysis; control systems and sytem surveillance. Prerequisites: EEEN 3315 - Electrical Circuits II (or equivalent) and senior standing. Offered in Fall.

ENTC 2325 - Statics

3 sem. hrs. (3:0) Theory of engineering mechanics involving forces, moments, and couples on stationary structures; equilibrium in two and three dimensions; free body diagrams; truss analysis; friction; centroids; centers of gravity and moments of inertia. Prerequisite:PHYS 2425 - University Physics I . Offered: Fall/Spring

ENTC 2326 - Dynamics

3 sem. hrs. (3:0) Theory of engineering mechanics involving the motion of particles, rigid bodies and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems.

Prerequisite: ENTC 2325 - Statics . Offered: Fall/Spring

ENTC 2414 - Circuit Analysis I

4 sem. hrs. (3:3) Fundamental aspects of DC circuit analysis: charge, voltage, resistance, current, and power; Ohm's Law; methods of analysis; series and parallel circuits; Kirchhoff's voltage and current laws; Thevenin and Norton Theorems; electrical measurement instruments; and use of analysis software. Prerequisite: MATH 2413 - Calculus I Co-requisite: PHYS 2426 - University Physics II . Offered: Fall/Spring TCCNS Equivalent: ENGT 1401

ENTC 2490 - Special Topics

1-4 sem. hrs. Subject material variable. May be repeated for different topics. Prerequisites: Varies. May be repeated for a total of 6 hours.

ENTC 3220 - Thermal-Fluids Laboratory

2 sem. hrs. (0:4) Application of measurement instrumentation and experimental techniques utilized in thermodynamics and fluid mechanics. Experiments and project in hydrostatics, hydrodynamics, and thermodynamics. Prerequisites / corequisites: ENTC 3306 - Fluid Mechanics and ENTC 3320 - Thermodynamics . Offered in Spring.

ENTC 3302 - Manufacturing Processes

3 sem. hrs. (2:3) Introduction to metal and non-metallic manufacturing processes; casting, forging, rolling, extrusion, sheet metal forming, cutting tools turning and milling operations, abrasive machining, welding and joining, powder compaction, molding, forming of plastics, surface treatment, human factors and safety. Prerequisites: ENGR 1312 - Engineering Graphics I, ENTC 3308 - Strength of Materials, and ENTC 2326 - Dynamics or ENGR 2326 - Dynamics. Offered: Fall/Spring.

ENTC 3306 - Fluid Mechanics

3 sem. hrs. (3:0) Fluid properties, fluid statics, dynamics, and kinematics, conservation of energy and momentum incompressible, laminar and turbulent flow. Similitude and

dimensional analysis, and viscous flow. Prerequisite: ENTC 2326 - Dynamics or ENGR 2326 - Dynamics. Offered: Fall (Spring as needed).

ENTC 3308 - Strength of Materials

3 sem. hrs. (3:0) Concepts in strength of materials, stress, strain; torsion; deformation under load; direct, shear, and combined stresses; shear and moment diagrams; Mohr's circle; stress concentrations, bending stresses and torsional shear stresses, deflection in beams and shafts; columns, connections, and pressure vessels. Prerequisites: ENTC 2325 - Statics or ENGR 2325 - Statics, and ENTC 3410 - Material Science. Offered: Fall (Spring as needed).

ENTC 3320 - Thermodynamics

3 sem. hrs. (3:0) Theory and application of energy methods in engineering; conservation of mass and energy; energy transfer by heat, work and mass; thermodynamic properties; analysis of open and closed systems; the second law of thermodynamics and entropy; gas, vapor and refrigeration cycles. Prerequisites:PHYS 2425 - University Physics I and MATH 2414 - Calculus II . Offered: Fall/Spring

ENTC 3323 - Robotics and Automation

3 sem. hrs. (2:3) Automation in a manufacturing and assembly setting, material handling systems, remote guided vehicles, automated storage and retrieval systems, computer numerical machine tools, robotics. Prerequisite: ENTC 3415 - Circuit Analysis II Offered: Spring

ENTC 3350 - Human Factors Engineering

3 sem. hrs. (3:0) Application of human factors engineering principles utilized in mechanical system and product design. Overview of human characteristics and research and design techniques. Prerequisite / corequisite: ENTC 3302 - Manufacturing Processes. Offered in Fall and Spring.

ENTC 3410 - Material Science

4 sem. hrs. (3:3) Structure and properties of metallic and nonmetallic materials; microstructure, mechanical testing, phase diagrams, heat treatment, testing, ceramics, polymers, composites, construction materials, failure analysis, nondestructive evaluation, corrosion and thermal properties of materials . Prerequisite: CHEM 1411 - General Chemistry I* and PHYS 2425 - University Physics I .

ENTC 3415 - Circuit Analysis II

4 sem. hrs. (3:3) AC circuit analysis principles: AC generation, periodic functions, complex numbers, phasors, impedance and admittance, network theorems, power, frequency response, filters, transformers, and balanced three-phase systems; and use of analysis software. Prerequisites:ENTC 2414 - Circuit Analysis I .

ENTC 3416 - Digital Fundamentals

4 sem. hrs. (3:3) Introduces the principles of digital logic analysis and design: logic functions; logic gates, number systems and conversions; Boolean algebra; logic simplification, combinational circuits, programmable logic devices, sequential circuits, and use of analysis and simulation software. Co-requisite: ENTC 2414 - Circuit Analysis I .

ENTC 3418 - Microprocessors/Microcontrollers

4 sem. hrs. (3:3) Introduction to microprocessor architecture, assembly language programming, and interfacing. Topics include computer organization, addressing modes, instruction set, interrupts, timing, memory, and interfacing. Prerequisite: COSC 1330 - Programming for Scientists, Engineers, and Mathematicians or COSC 1435 - Introduction to Problem Solving with Computers I

ENTC 3444 - Electronic Devices and Circuits I

4 sem. hrs. (3:3) An introduction to semiconductor theory; solid state devices, including diodes, Bipolar Junction transistors, JFETs, and MOSFETs; principles of operational amplifiers; transducers and sensors. Prerequisites: ENTC 3415 - Circuit Analysis II .

ENTC 3450 - Electronic System Design

4 sem. hrs. (3:3) Principles of engineering design of electronic circuits and systems; time and frequency responses; network analysis; systems specifications; evaluation, testing, and verification; use of electronic design automation tools. Prerequisites: EEEN 3345 - Electronic Devices and Circuits .

ENTC 3455 - Solid Modeling and Finite Elements

4 sem. hrs. (3:3) Use of computer aided design and solid modeling tools in engineering design and manufacturing including: solid modeling, stress, flow and heat transfer analysis using finite element methods, and rapid prototyping. Prerequisite: ENTC 3308 - Strength of Materials . Offered: Spring

ENTC 4210 - Solid Mechanics Laboratory

2 sem. hrs. (0:4) Experimental principles from Strength of Materials, and experiments and computer-based analysis of machine elements and structures for Strength of Material and Solid Mechanics. Prerequisite / corequisite: ENTC 4330 - Solid Mechanics . Offered in Fall and Spring.

ENTC 4320 - Heat Transfer

3 sem. hrs. (3:0) Fundamental study of convection, conduction and radiation as applied to heat transfer, heat exchangers, boilers, other heat transfer equipment. Prerequisite: ENTC 3306 - Fluid Mechanics and ENTC 3320 - Thermodynamics . Offered: Spring

ENTC 4322 - Programmable Logic Controllers

3 sem. hrs. (2:3) Introduction to PLCs and their use in industrial automation. Topics include programming, counters, timers, interrupts, and process control applications. Prerequisite: ENTC 3416 - Digital Fundamentals . Offered: As needed

ENTC 4330 - Solid Mechanics

3 sem. hrs. (3:0) Stress analysis of deformable bodies and mechanical elements; stress transformation; combined loading; failure modes; material failure theories; fracture and fatigue; deflections and instabilities; thick cylinders; curved beams; design of structural/mechanical members; design processes for shafts, bearings, springs, fasteners, and mechanical joints. Prerequisite: ENTC 3308 - Strength of Materials. Offered in Fall and Spring

ENTC 4331 - Unit Processes

3 sem. hrs. (3:0) Principles and methods for staged separation processes including distillation, absorption and stripping, extraction, and adsorption systems. Offered in Fall and Spring Prerequisite: ENTC 4320 Heat Transfer

ENTC 4332 - Process Modeling and Control

3 sem. hrs. (3:0) Process modeling, dynamics, and feedback control. Linear control theory. Application of Laplace transforms and frequency response to the analysis of open-loop and closed-loop process dynamics. Dynamic response characteristics of processes. Stability analysis and gain/phase margins. Design and tuning of systems for control of level, flow, and temperature. Offered Fall and Spring. Prerequisite: ENTC 3306 Fluid Mechanics

ENTC 4333 - Chemical Reaction Engineering

3 sem. hrs. (3:0) Fundamental principles of chemical reaction engineering and application to design and analysis of basic chemical reactors containing both homogeneous and heterogeneous reactions. Offered Fall and Spring. Prerequisites: ENTC 4331 Unit Processes and ENTC 4332 Process Modeling and Control

ENTC 4335 - Energy Conversion

3 sem. hrs. (2:3) Installation, design characteristics, operational performance, and maintenance of motors, turbines, pumps and compressors. Introduction to global energy concerns; fossil and nuclear fuels; energy consumption analysis; energy management and conservation techniques; renewable and alternative energy sources. Modern energy conversion devices such as fuel cells, photovoltaic cells, and micro-power turbines. Prerequisite: ENTC 3320 - Thermodynamics . Offered: as needed

ENTC 4350 - Capstone Projects

3 sem. hrs. (1:5) This course allows students to employ the knowledge attained in other courses to implement (including building, testing, and documenting) the project approved in ENTC 4415 - Project Justification and Management , within budget and on schedule. Course requirements include a written report and oral presentations. Normally taken in the student's last semester. Prerequisite: ENTC 4415 - Project Justification and Management

ENTC 4360 - Mechanical System Design

3 sem. hrs. (3:0) Analysis, management and cost, team work, optimal design, and computer simulation of mechanical systems and components; Applications in fluid flow and heat transfer, machine elements, and stress analysis. Selected course topics are assigned as projects. Prerequisite: ENTC 4330 Solid Mechanics

ENTC 4415 - Project Justification and Management

4 sem. hrs. (3:2) Foundations of engineering economy, cash flow and equivalence, and project justification. Introduction to project management, planning, scheduling, and control, use of project management software, GANTT charts, PERT charts, critical path. Students prepare proposals, including specifications, timelines, schedule, and budget, for projects to be implemented in ENTC 4350 - Capstone Projects . Prerequisite: Senior Standing. This course should be taken the semester preceding ENTC 4350 - Capstone Projects . Offered: Spring

ENTC 4420 - Embedded Systems

4 sem. hrs. (3:3) Characteristics of embedded systems, system design, interface devices, memory management, interrupt support, input/output applications, software-hardware co-design, modular programming, multitasking, simulation, and control of external devices. Prerequisites: ENTC 3416 - Digital Fundamentals or ENTC 3418 - Microprocessors/Microcontrollers .

ENTC 4446 - Control Systems I

4 sem. hrs. (3:3) Introduction to control systems; open and feedback; Laplace transform and frequency response; control valves; electric motors; P, PI, and PID modes of control; analog and digital controllers Process characteristics; analysis of control systems; gain and phase margin; stability. Prerequisites: ENTC 2414 - Circuit Analysis I .

ENTC 4490 - Selected Topics

3-4 sem. hrs. Subject material variable. May be repeated for different topics. Prerequisites: Vary. Offered: As needed

ENTC 4496 - Directed Independent Study

1-4 sem. hrs. Requires a formal proposal of study to be completed in advance of registration, approval of supervising faculty and chairperson. Prerequisites: Varies.

Environmental Science

ESCI 1401 - Environmental Science I: Intro to Environmental Science

4 sem. hrs. (3:2) Principles of the scientific method and critical thinking provide a foundation for subsequent consideration of environmental issues through a multidisciplinary approach. Laboratory exercises and local field experiences reinforce concepts introduced in the lectures. Corequisite: SMTE 0096 Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: ENVR 1401 This course counts toward the natural science component of the University Core Curriculum. Fall, Spring.

ESCI 1490 - Selected Topics

1-4 sem. hrs. Subject materials variable. May be repeated for credit when topics are significantly different. Faculty approval required. Offered on sufficient demand.

ESCI 3202 - Professional Skills

2 sem. hrs. (2:0) Presentation and discussion of selected topics relating to the professional skills of practicing environmental scientists including literature searches, reviews, paper presentation, professional and career opportunities, professional ethics. Fall, Spring.

ESCI 3351 - Oceanography

3 sem. hrs. (3:0) Methods and principles of oceanography. A survey of oceanography with emphasis placed on the physical processes affecting water and water masses of the world oceans. Prerequisites: CHEM 1412, or ESCI 1401, or GEOL 1403, or permission of instructor. Fall (on sufficient demand), Spring.

ESCI 3403 - Introduction to Meteorology

4 sem. hrs. (3:2) This course is an introduction to meteorology and the dynamics of planetary atmospheres. Emphasis on atmospheric accretion, composition, evolution, structure, and dynamics. Lab exercises cover basic measurement techniques, weather maps, and forecasting. A student cannot receive credit for both this course and ATSC 2403 - Introduction to Meteorology. Co-requisite: SMTE 0094 - Environmental Science Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar mustb e completed before the Census Date of the semester to participate in the lab portion of this course. Fall, Spring (on sufficient demand).

ESCI 3443 - Environmental Biology

4 sem. hrs. (3:2) Historical, contemporary, and projected concerns of human activities on biological aspects of ecosystem functioning. Prerequisite: BIOL 1407 or consent of instructor. Corequisite: SMTE 0096 Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Fall, Spring (on sufficient demand).

ESCI 4130 - Oil Spill Prevention and Response Lab

1 sem. hrs. (0:2) Practical techniques for control, containment, countermeasures, removal, and disposal of oil spills in an environmentally safe manner. Field exercises will include use of boats, booms and skimmers. Prerequisite or corequisite: ESCI 4230. Corequisite: SMTE 0096 - Environmental Science Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in this course. Fall, Spring, Summer (on sufficient demand).

ESCI 4170 - Hazardous Waste Operations and Emergency Response Lab

1 sem. hrs. (0:2) Practical techniques for handling, reducing, and disposing of hazardous wastes in an environmentally safe manner. Lab exercises in use of personal protective gear and safe handling of hazardous substances. Prerequisite or corequisite: ESCI 4270. Co-requisite: SMTE 0096 - Environmental Science Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in this course. Fall, Spring, Summer (on sufficient demand).

ESCI 4201 - Scientific Diving Techniques

2 sem. hrs. (2:0) Theory, science, and art of underwater diving technology and its application to scientific objectives. Course helps fulfill some training requirements of the Texas A&M University-Corpus Christi Guidelines for scientific diving. Prerequisite: PADI certification or permission of instructor. Offered on sufficient demand.

ESCI 4202 - Issues in Environmental Science

2 sem. hrs. (2:0) Exploration of major issues in environmental science posing past, present and future challenges. Selected readings, student presentations and papers. Prerequisites: Juniors/seniors only and ESCI 1401 - Environmental Science I: Intro to Environmental Science or permission of instructor.
Prerequisite: ESCI 1401 Fall (on sufficient demand), Spring.

ESCI 4230 - Oil Spill Prevention and Response Theory

2 sem. hrs. (2:0) Historical perspective of laws and regulations governing oil spill prevention and response. Current methods for control, containment, countermeasures, removal, and disposal of oil spills in an environmentally safe manner. Fall, Spring, Summer (on sufficient demand).

ESCI 4270 - Hazardous Waste Operations and Emergency Response Theory

2 sem. hrs. (2:0) Study of the laws and regulations of hazardous waste management from an historical perspective followed by current techniques for handling, reducing, and disposing of hazardous wastes in an environmentally safe manner. Fall, Spring, Summer (on sufficient demand).

ESCI 4301 - Environmental Regulations

3 sem. hrs. (3:0) A survey of state and federal environmental laws and regulations, and their impact on the environment. Case studies of environmental issues and legislated regulations. Prerequisites: POLS 2305 - U.S. Government and Politics*^ and POLS 2306 - State and Local Government*^. Fall, Spring (on sufficient demand), Summer (on sufficient demand).

ESCI 4320 - Environmental Health

3 sem. hrs. (3:0) Overview of the toxicology and epidemiology of pollutants in the air, water and soil. Associations of environmental exposure with adverse health effects such as cancer, cardiovascular disease, and reproductive outcomes; also chemical markers and symptoms of disease. Pollutants studied include lead, asbestos, radiation, radon, noise, metals, halogenated hydrocarbons, aromatic hydrocarbons, silica, indoor air quality, formaldehyde, and outdoor air pollutants. Offered on sufficient demand.

ESCI 4321 - Introduction to Soil and Groundwater Restoration

3 sem. hrs. (3:0) Introduction to methods for restoring contaminated soil and groundwater by examining the factors and processes influencing the efficacy of remediation systems. An emphasis will be placed on the scientific principles upon which soil and groundwater remediation is based. Cross listed with GEOL 4321. Offered on sufficient demand.

ESCI 4322 - Introduction to Industrial Hygiene

3 sem. hrs. (3:0)

Introduction to health protection practices in the industrial environment. Health basis for OSHA laws, regulations. Sampling and testing procedures.

Offered on sufficient demand.

ESCI 4324 - Introduction to Industrial Toxicology

3 sem. hrs. (3:0)

Review of human physiology, general concepts of toxicology: dose-response relationship, interactions between the host and the agents, risk assessment, to provide an introductory understanding of toxicology related to the chemicals in the workplace.

Offered on sufficient demand.

ESCI 4332 - Wetlands and Water Quality

3 sem. hrs. (3:0) Introduction to wetland ecosystems (natural, constructed and restored) with an emphasis on the role of wetlands in water quality. Topics include wetland systems, their history and role in society, relationships between biology, geology, ecology, hydrology and chemistry in wetland environments. Prerequisite: BIOL 3428 Principles of Ecology , CHEM 4443 Environmental Chemistry, or ESCI 3443 Environmental Biology. Offered on sufficient demand.

ESCI 4335 - Climate and Climate Variability

3 sem. hrs. (3:0) Course intended to guide environmental science majors in developing a conceptual understanding of Earth's global climate and its variability. Review of past climates, present mean state of the climate system, climate variability from seasonal to multidecadal time scales, and climate change. Special attention given to climates of the Gulf of Mexico, Caribbean Sea and surrounding land regions. Plausible climate-change scenarios, as well as mitigation and adaptation strategies are also discussed. Cross listed with ATSC 4335. Prerequisite: ESCI 3351 or ESCI 3403, and PHYS 1401 or PHYS 2425, or instructor's consent. Spring.

ESCI 4340 - Severe Weather

3 sem. hrs. (3:0) Introduction to mesoscale weather systems including thunderstorms, squall lines and hurricanes, as well as the mechanisms of tornado and lighting. Methods of observing, analyzing, and predicting these severe weather systems with the interpretation of satellite and radar images will also be introduced in this class. Prerequisite: ESCI 3403 - Introduction to Meteorology. Offered on sufficient demand.

ESCI 4344 - Air Pollution and the Clean Air Act

3 sem. hrs. 3:0 Introduction to the chemistry and physics of air pollution and regulations. Topics include photochemistry, acid rain, air pollution meteorology and dispersion, global change, and the Clean Air Act. Offered on sufficient demand.

ESCI 4360 - Physical Oceanography

3 sem. hrs. (3:0) Physical description of the sea, physical properties of seawater and sea ice, methods and measurements, wind-driven ocean circulation, thermohaline ocean circulation, boundary processes, waves, tides and mixing. Seasonal and interannual variability such as El Niño/Southern Oscillation phenomena. Implications for marine biology, marine geology, human impacts, other topics. Prerequisites: PHYS 1401 or PHYS 2425 or consent of instructor. Fall.

ESCI 4365 - Occupational Safety and Accident Prevention

3 sem. hrs. (3:0) This course provides students with fundamental knowledge of regulatory requirements on occupational safety and practical techniques on accident prevention in the work environment. Offered on sufficient demand.

ESCI 4408 - Environmental Microbiology

4 sem. hrs. (3:3) Relationships between microorganisms and their biotic and abiotic environment. Current topics such as air quality (i.e., molds), water quality and bioremediation will be discussed. Laboratory will include techniques for sampling from soil, air and water. Prerequisite: BIOL 2421 Microbiology or consent of instructor. Co-requisite: SMTE 0096 Environmental Science Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

ESCI 4480 - Environmental Site Assessment

4 sem. hrs. (3:2) Interdisciplinary application of environmental regulations, risk assessment to specific examples. Knowledge of United States environmental regulations assumed; ESCI 4301 Environmental Regulations recommended. Co-requisite: SMTE 0094 Geology Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the Semester to participate in the lab portion of this course. Offered on sufficient demand.

ESCI 4490 - Selected Topics

0-4 sem. hrs. Subject materials variable. May be repeated for credit when topics are significantly different. Faculty approval required. Offered on sufficient demand.

ESCI 4496 - Directed Independent Study

1-4 sem. hrs. Requires a formal proposal of study to be completed in advance of registration and to be approved by the supervising faculty, the Chairperson, and the Dean of the College. Fall, Spring, Summer.

ESCI 4498 - Internship in Environmental Science

2 sem. hrs. (Ind study) Two to four semester hours of credit may be earned by working in an internship position in a governmental agency or industry. Prerequisite: senior environmental science majors only; requires approval of the faculty. May be repeated for credit. Fall, Spring, Summer.

Educational Technology

EDCI 4301 - STEM Mathematics

3 sem. hrs. This course provides the conceptual framework for exploring EC-6 mathematics integrated with engineering for deeper understanding, connections, and communication. Formal and informal geometry and measurement concepts and skills will be developed through problem-solving scenarios in collaborative groups. Manipulatives and technology will support the problem-solving approach. This course is designed to emphasize in-depth basic understandings of geometry and measurement, which is a core idea in the EC-6 mathematics curriculum. Communicating concepts, processes or solutions effectively, in oral and written forms, will be emphasized.

EDCI 4302 - STEM Science EC-6

3 sem. hrs. This course provides the conceptual framework for exploring EC-6 science with deeper understanding, connections, and communication. It is designed to provide preservice teachers with a global understanding of teaching science in the EC-6 school setting. The major goal is to prepare teachers who can educate students to become scientifically literate. This aim requires preservice teachers to learn about the nature of science, to engage in science investigations, and to construct understanding of natural phenomena, forming an elaborate cognitive framework of scientific concepts. Students' prior knowledge from previous courses will be essential to their performance in this course, namely: technology in the classroom, lesson planning, curriculum organization, and student assessment.

IDET 3100 - Educational Technology for Preservice Teachers in Schools^

1 sem. hrs. This field-based integrated course is designed to provide educators with an overview of basic resource tools and instructional methods to be considered when designing and developing educational technology integrated curriculum plans. This field-based infused seminar will look at basic integrated applications in creating electronic portfolios for all students. Aspects of online collaborative tools and their pedagogical implications in EC-12 environments will also be incorporated.

IDET 3310 - Technology Applications for Teachers^

3 sem. hrs. This course enables preservice and inservice teachers to effectively use computer-based technology for instructional and professional purposes, and provides participants with the skills and knowledge required for teacher certification in Texas.

IDET 4300 - STEM Technology

3 sem. hrs. This course provides the conceptual framework for exploring EC-6 technology integrated with computational thinking skills and engineering for deeper understanding, connections, and communication. Technology integration concepts and skills will be developed through flipped instruction, face to face, and collaborative group instruction. Maker Spaces and collaborative technology tools will support the problem-based learning approach. The major goal of this course is to prepare teachers who can educate students to become technologically literate with basic understandings in applicable computational thinking and engineering concepts.

Finance

FINA 1307 - Personal Finance*

3 sem. hrs. Covers the foundations of financial planning, managing basic assets, managing credit, managing insurance needs, managing investments, and retirement and estate planning. This course is designed for nonbusiness as well as business majors to give them a basic understanding of the aspects of personal financial planning. TCCNS Equivalent: FINA 1307

FINA 3310 - Financial Management*

3 sem. hrs. A survey of financial management issues emphasizing planning and decision making. Specific topics covered include discounted cash flow analysis, stock and bond valuation, financial intermediation, organizing, raising and managing capital, capital investment, risk analysis, and financial statement analysis. Prerequisites: ACCT 2301, BUSI 0011, MATH 1325, or equivalent and Junior standing or above.

FINA 3312 - Financial Markets and Institutions

3 sem. hrs. Course coverage includes an analysis of financial markets and institutions; regulation, money market operations, global impact of central banking principles and monetary policy, and determinants of interest rates with financial asset pricing. Prerequisites: Junior standing or above.

FINA 3320 - Intermediate Corporate Finance

3 sem. hrs. An in-depth study of financial planning and management with emphasis on capital structure and cost of capital, capital budgeting, and other topics in corporate financial management. The course serves as a framework for understanding a broad

range of corporate financial decisions. Prerequisites: FINA 3310 and Junior standing or above.

FINA 3331 - Investments

3 sem. hrs. Framework of financial markets, valuation of the firm, security analysis, investment equity versus debt, efficiency of market evaluation, diversification efforts, investment goals, and portfolio selection. Prerequisites: ACCT 2301, MATH 1325 or equivalent and Junior standing or above.

FINA 3335 - Financial Modeling

3 sem. hrs. This course will cover the use of spreadsheet analysis in financial applications and introduce students to spreadsheet tools and functions to conduct business and personal financial analysis, valuation of bonds and stocks, and financial forecasting.

FINA 3350 - Cash Management

3 sem. hrs. An examination of the principles and methods of cash and liquidity management with particular attention to funds transfer procedures and requirements. Specific topics include the role of cash management in corporate financial management, a review of relevant accounting concepts, the structure of the financial environment, the system of disbursements and collections, accounts receivable management, accounts payable management, information technology and electronic commerce, cash flow forecasting, short-term investing and borrowing, financial risk management, international treasury management, and management of relationships. Prerequisites: FINA 3310 or consent of instructor and Junior standing or above.

FINA 3351 - Insurance Principles

3 sem. hrs. Fundamentals of risk management as practiced in the commercial life, health, property, and casualty insurance industries. Prerequisite: Junior standing or above.

FINA 3354 - Real Estate Principles*

3 sem. hrs. Fundamental real estate covering the basic principles of real estate, providing the background necessary for advanced study in specialized real estate courses. Prerequisite: Junior standing or above.

FINA 3355 - Employee Benefits and Retirement Planning

3 sem. hrs. This course examines the financial aspects of retirement planning as well as employee benefit planning including group insurance plans and the characteristics of the various types of employee benefit plans: life insurance, medical expense, disability, and retirement income. Prerequisite: Junior standing or above

FINA 4310 - Advanced Financial Management

3 sem. hrs. Application of financial management tools, examination and interpretation of financial statements, and integration of financial policy and structure on overall management of the enterprise. Students will present cases on the material covered in this and earlier courses to demonstrate they are able to collect and analyze data and present recommendations. Prerequisites: FINA 3320 and Junior standing or above.

FINA 4315 - International Finance

3 sem. hrs. A study of the institutions and relationships of the international financial system as it relates to the balance of payments, foreign exchange risk, arbitrage and the Eurocurrency market. The emphasis is on methods of arbitrage, forecasting exchange rates, and hedging against foreign exchange risk. Prerequisites: ECON 2301, ECON 2302, FINA 3310, and Junior standing or above.

FINA 4321 - Financial Institutions Management

3 sem. hrs. A study of major financial institutions and the markets in which they operate, with emphasis on financial decision making and risk management. Topics include financial intermediation theory; measurement and management of interest rate risk, credit risk, off-balance-sheet risk, foreign exchange risk, country risk, and liquidity risk; capital adequacy; and product/market diversification. Prerequisites: FINA 3310, ECON 2302, and Junior standing or above.

FINA 4330 - Introduction to Derivative Securities

3 sem. hrs. Course coverage includes an analysis of financial derivative contracts. The class includes options, futures and forward contracts; in particular comodity trading and hedging strategies will be covered in detail. Swaps and Interest Rate Options will be included in the presentation if time permits. (Prerequisites: MATH 1324 or equivalent or approval of instructor).

FINA 4332 - Security Analysis and Portfolio Management

3 sem. hrs. Evaluation of investment securities of both private and public institutions through external analysis of financial statements and economic conditions, portfolio

selection, expected return and risk selection, and conditions of market efficiency. Prerequisites: FINA 3310, FINA 3331, ORMS 3310, and Junior standing or above.

FINA 4334 - Financial Statement Analysis

3 sem. hrs. A detailed study of financial reporting with emphasis upon practical interpretations. Attention will be given to financial statement analysis using financial accounting information and its finance implications. Assignments may differ depending on major. Prerequisites: ACCT 2301, ACCT 2302, FINA 3310, and Junior standing or above.

FINA 4390 - Current Topics in Finance

1-3 sem. hrs. Selected topics for special study related to finance functions, processes or issues. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

FINA 4396 - Directed Individual Study

1-3 sem. hrs. Individual supervised study and completion of a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

FINA 4398 - Internship in Finance

3 sem. hrs. Supervised full-time or part-time, off-campus training in business or government finance office. Oral and written reports required. Prerequisites: finance major, and Junior standing or above. Students must apply to program and be accepted prior to registration. May not be repeated for credit.

Foreign Language

LANG 1311 - Beginning Language Instruction I

3 sem. hrs. This course offers beginning instruction in foreign languages not taught on a regular basis. It is an introduction to listening, speaking, reading and writing skills within a cultural framework. Languages will vary but may include Korean, Hindi, or Russian. For students without previous knowledge of the language. Can be repeated once for up to 6 hours credit for two separate languages. TCCNS Equivalent: LANG 1311

LANG 1312 - Beginning Language Insruction II

3 sem. hrs. This course is a continuation of LANG 1311 Beginning Language Instruction I. Continued practice in listening, speaking, reading and writing skills within a cultural framework. Languages will vary but may include Korean, Hindi, or Russian. LANG 1311 or equivalent in the same language or instructor permission required. Can be repeated once for up to 6 hours credit for two separate languages. Prerequisite: LANG 1311 or equivalent in the same language or instructor permission. TCCNS Equivalent: LANG 1312

French

FREN 1311 - French I

3 sem. hrs. Introduction to listening, speaking, reading, and writing skills within a French cultural framework. For students without previous knowledge of the language. (Language laboratory required. One hour per week minimum.) A lab fee is required for this course. TCCNS Equivalent: FREN 1311

FREN 1312 - French II

3 sem. hrs. Continued practice in listening, speaking, reading and writing skills within a French cultural framework. French 1311 or equivalent required. (Language laboratory required. One hour per week minimum.) A lab fee is required for this course. TCCNS Equivalent: FREN 1312

FREN 2311 - French III

3 sem. hrs. Reviews French grammar through oral and written practice with emphasis on language proficiency. Utilizes cultural readings in French to expand vocabulary and knowledge of the French culture. TCCNS Equivalent: FREN 2311

FREN 2312 - French IV

3 sem. hrs. Continued advanced development and review of all language skills within a French framework with an emphasis in the linguistic perspective. Successful completion of 2311 is required to receive credit for 2312. TCCNS Equivalent: FREN 2312

FREN 3306 - French Lit 1800 to Present

3 sem. hrs. This course will deal with a short story, a novel, a film script and a play written by three of the big names from the nineteenth and twentieth centuries, two men and a woman. Each work deals in its way with the relationships between men and

women, loneliness and alienation, faith and other modern considerations. (Teleconference course)

Geography

GEOG 1300 - World Geography

3 sem. hrs. This is a survey course of the major regions of the world. The significant physical and cultural aspects of each region will be covered. TCCNS Equivalent: GEOG 1300

GEOG 1470 - Geographic Information Systems I

4 sem. hrs. (3:2) Introduction to topics in modern geography, including elements of Physical Geography (studies of the atmosphere, ocean, and land, surface environments) and an introduction to Geographic Information Systems (GISC). A significant part of course work will include computer-assisted mapping and GISC assignments. Prerequisite or corequisite: COSC 1315. (Credit may not be given for both this course and GISC 1470.)

GEOG 3331 - Geography of North America

3 sem. hrs. This course introduces the five themes in geography and uses these themes to analyze the relationships between the physical and cultural aspects of the United States. The textbook information will be supplemented with satellite images and visual materials to enhance the learning experience of the student.

Geology

GEOL 1303 - Essentials of Geology*

3 sem. hrs. (3:0) One-semester introductory Earth science course for students majoring in a non-science subject area. Covers basic geologic material and concepts, such as minerals, rocks, the rock cycle, and plate tectonics theory. Origin, composition, and evolution of our planet, as well as the importance of geology in everyday life, including geologic resources, global change, earthquakes, and volcanism are examined. This course is not recommended for students majoring in Geology or Environmental Sciences. Course counts toward the natural science component of the Core Curriculum Program. TCCNS Equivalent: GEOL 1303 Physical Geology Fall, Spring, Summer (on sufficient demand).

GEOL 1403 - Physical Geology

4 sem. hrs. (3:2) Introduction to the origin, classification, and composition of Earth materials. Study of internal and surface processes which shape and modify Earth. Laboratory studies of minerals and rocks, as well as topographic maps, geologic maps and geologic cross-sections. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: GEOL 1403. This course counts toward the natural science component of the University Core Curriculum.Fall, Spring (on sufficient demand).

GEOL 1404 - Historical Geology

4 sem. hrs. (3:2) Introduction to the origin and evolution of Earth and other planets. Changes in the form and distribution of Earth's continents and oceans, and succession of plants and animals through geologic time. Laboratory studies of fossils, geological maps, and the interpretation of ancient environments of rock formation. Prerequisite: GEOL 1403 or GEOL 1303. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: GEOL 1404. This course counts toward the natural science component of the University Core Curriculum.Spring.

GEOL 2102 - Undergraduate Seminar in Geology-Careers in the Geosciences

1 sem. hrs. (1:0) Introductory level seminar featuring diverse topics and speakers. Focus on careers in the geosciences as well as on how to successfully plan a college career. In-house as well as external speakers. May not be repeated for credit but attendance in subsequent semesters is encouraged. Offered on sufficient demand.

GEOL 2103 - Undergraduate Seminar in Geology-Research in the Geosciences

1 sem. hrs. (1:0) Introductory level seminar featuring diverse topics and speakers. Focus on current geologic research. In-house as well as external speakers. May not be repeated for credit but attendance in subsequent semesters is highly encouraged. Credit/no credit Offered on sufficient demand.

GEOL 2222 - Karst Geology and Paleoclimatology

2 sem. hrs.
This course describes the different types of caves and karst rocks, the water rock interactions in carbonate rock systems, and it explains cave formation via hydrological and geochemical processes. It also deals with how speleothem proxies such as oxygen

and carbon stable isotope, trace elements, carbonate petrography are used to decipher past changes in climate.

Prerequisites: None

Corequisites: GEOL 1403, SMTE 0094 Geology Laboratory Safety Seminar

GEOL 2490 - Selected Topics

1-4 sem. hrs. (1-4 : 0-6) May be repeated for credit if topics are significantly different. Subject material variable. Faculty approval required. Offered on sufficient demand.

GEOL 3326 - Introduction to Geological Field Methods

3 sem. hrs. (2:3) Introduction to the basic techniques of geological fieldwork. Note taking in the field, proper use of geological field equipment, measurement and description of rock sections by several methods and degrees of detail, plus small area mapping of several types of terrain with topographic maps. Reports, sections, and maps will be produced from the field notes. Field trips required. Prerequisites: GEOL 1403, GEOL 1404, and GEOL 3411 (may be taken concurrently). Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Spring.

GEOL 3329 - Geology of National Parks

3 sem. hrs. (3:0) Introduction to the regional geology of the United States using selected U.S. National Parks representing a wide variety of geologic settings as examples. Application of major geologic principles and basic geologic concepts such as plate tectonics, rock cycle, stratigraphy, and geologic time. Prerequisite: GEOL 1303, or GEOL 1403, or GEOL 1404. Offered on sufficient demand.

GEOL 3411 - Mineralogy

4 sem. hrs. (3:2) Study of the physical and chemical properties of minerals. Introduction to the crystallography of minerals, optical mineralogy, and the use of the polarized light microscope. Laboratory study of mineral identification in hand specimens and thin sections. Prerequisites: GEOL 1403, CHEM 1411, and CHEM 1412 (may be taken concurrently). Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Fall.

GEOL 3414 - Igneous and Metamorphic Petrology

4 sem. hrs. (3:2) Genesis and occurrence of igneous and metamorphic rocks. Mineralogical composition and thermodynamics of geologic systems. Determination of rock types in hand specimens and thin sections.Prerequisites: GEOL 1403 - Physical Geology, CHEM 1411 - General Chemistry I*, CHEM 1412 - General Chemistry II, GEOL 3411 - Mineralogy. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Spring.

GEOL 3441 - Invertebrate Paleontology

4 sem. hrs. (3:2) Morphology, classification, and paleoecology of fossil invertebrates. Applications to marine geology including paleoceanography, stratigraphy, economic geology. Field trip to Texas invertebrate fossil beds. Prerequisite: GEOL 1404 or permission of instructor. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Fall.

GEOL 3442 - Geomorphology

4 sem. hrs. (3:2) Study of landscapes and landforms at the surface of the Earth, and the processes and mechanisms by which they are developed. Prerequisite: GEOL 1403 or permission of instructor. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Fall.

GEOL 3443 - Environmental Geology

4 sem. hrs. (3:2) Study of the relationships of humans to Earth's physical environment. Geologic aspects of waste disposal, resources, conservation, land reclamation, geologic hazards, and land-use planning. Prerequisite: GEOL 1403, and science major or minor, or permission of instructor. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Fall (on sufficient demand), Spring.

GEOL 3490 - Selected Topics

1-4 sem. hrs. May be repeated for credit if topics are significantly different. Subject materials variable. Faculty approval required. Offered on sufficient demand.

GEOL 4050 - Geology Field Safety Seminar

0 sem. hrs. Restricted to geology majors attending field camp. Students required to meet with geology program coordinator prior to registration for this course. Offered on sufficient demand.

GEOL 4311 - Paleoclimatology

3 sem. hrs. (3:0) Reconstruction of Earth's climate system through time using natural archives and proxy evidence. Focus is mostly towards the Quaternary, though longer time spans will be considered, too. Mixed format with lectures, hand-on activities involving paleoclimate data sets, and seminar-style readings and discussions. Prerequisites:GEOL 1404 - Historical Geology , GEOL 3441 - Invertebrate Paleontology Offered on sufficient demand.

GEOL 4316 - Marine Geoscience

3 sem. hrs. (3:0) Introduction to the geology of the marine environment. Review of plate tectonic processes relevant to the evolution of continental margins and plate boundaries; geophysics and ocean morphology; geology of ocean crust; controls on the types, origin, and distribution of marine sediments; marine geochemistry; nearshore geological processes and the continental shelf; introduction to paleoceanography; global paleoceanographic evolution; critical events in ocean history. Special focus on the Gulf of Mexico. Prerequisites: GEOL 1403 - Physical Geology GEOL 1404 - Historical Geology CHEM 1411 - General Chemistry I* CHEM 1412 - General Chemistry II. Offered on sufficient demand.

GEOL 4321 - Introduction to Soil and Groundwater Restoration

3 sem. hrs. (3:0) Introduction to methods for restoring contaminated soil and groundwater by examining the factors and processes influencing the efficacy of remediation systems. An emphasis will be placed on the scientific principles upon which soil and groundwater remediation is based. Prerequisites: GEOL 1403 - Physical Geology , CHEM 1411 - General Chemistry I* , CHEM 1412 - General Chemistry II, GEOL 3443 - Environmental Geology or equivalents, and/or with instructor's permission. Cross listed with ESCI 4321. Offered on sufficient demand.

GEOL 4326 - Field Seminar in Geology

3 sem. hrs. (1:4) Designed to prepare students for summer field camp. Basic techniques of geologic mapping in the field, data analysis and interpretation, and report writing. Prerequisites: GEOL 4411 and GEOL 4421. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

GEOL 4411 - Sedimentation and Stratigraphy

4 sem. hrs. (3:2) Composition and origin of sediments and sedimentary rocks. Description and classification of rocks in hand specimen. Principles of stratigraphy, including stratigraphic units and correlation. Facies models for major depositional systems. Field trips. Prerequisites: GEOL 1403, GEOL 1404, and GEOL 3411 (may be taken concurrently), or permission of instructor. (May be taken for graduate credit.) Safety training given during a laboratory meeting early in the semester is required for continued participation in this course.

GEOL 4415 - Economic Geology

4 sem. hrs. (3:2) Study of geologic and tectonic parameters of mineral and metals formation. Ore geology and geochemistry. Mining, processing, fabrication, and marketing of natural resources. Field trip to mining operations. Prerequisites: GEOL 1403 and GEOL 3411. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

GEOL 4416 - Introduction to Geochemistry

4 sem. hrs. (3:2) Introductory study of the Earth processes using principles of chemical equilibrium, thermodynamics, isotope geochemistry and organic geochemistry. Applications of low-temperature geochemistry to geologic problems. CHEM 1411, CHEM 1412, MATH 2413,and GEOL 3411, or instructor's permission. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

GEOL 4421 - Structural Geology

4 sem. hrs. (3:2) PHYS 1401 Geometric and quantitative description of deformation of the Earth's crust, mechanics of brittle and crystal-plastic deformation processes of Earth materials, introduction to continuum mechanics of geologic systems, crustal deformation from micro-scale to global tectonics. Laboratory introduces principles of three-dimensional data representation and analysis, geologic map interpretation, cross-section techniques, and problems in stress and strain analysis. Prerequisites: GEOL 3411, MATH 2413, and PHYS 1401 or PHYS 2425. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Spring.

GEOL 4422 - Geophysics

4 sem. hrs. (3:2) Introduction to quantitative techniques to assess physical properties and processes of the Earth. Topics include earthquake seismology, refraction and reflection seismology, gravimetry, magnetism, electrical methods, and radioactivity of Earth materials. Application of geophysical methods to the study of the Earth, in oil and gas exploration, and in economic and environmental geology. Prerequisites: GEOL 4421, PHYS 1401 or 2425, PHYS 1402 or 2426, MATH 2413, or permission of instructor.

GEOL 4423 - Seismic Methods

4 sem. hrs. Introduction to the acquisition, processing, and interpretation of 2D and 3D seismic data. Lectures and field exercises are covered. Topics include conceptual and historical foundations of modern reflection seismology; an overview of seismic wave phenomena in acoustic, elastic, and porous media; acquisition principles for land and marine seismic surveys; methods used to create 2D and 3D seismic images from field data; concepts of dip moveout, prestack migration, and depth migration; concepts and limitations of 3D seismic interpretation for structure, stratigraphy, and rock property estimation; and the interpretation role of attributes, impedance estimation, and AVO. Prerequisites: GEOL 4422 - Geophysics.

GEOL 4424 - Environmental and Engineering Geophysics

4 sem. hrs. Geophysical techniques for exploring the shallow subsurface for environmental and engineering purposes. Topics include seismic, resistivity, ground penetrating radar, electromagnetic, gravity, and magnetic methods. This course includes both lectures and labs (field exercises) components. Prerequisites: PHYS 1401 - General Physics I or PHYS 2425 - University Physics I, PHYS 1402 - General Physics II or PHYS 2426 - University Physics II, MATH 2413 - Calculus I.

GEOL 4430 - Internship in Geology

1-4 sem. hrs. (Independent Study) One to four semester hours of credit may be earned by working in an internship position in industry, with local government, a private firm, or an independent geologist. Prerequisite: Junior or Senior geology majors only; requires approval of the geology faculty. May be repeated for credit, but only four semester hours will count towards degree. Spring, Summer, Fall.

GEOL 4436 - Introduction to Petroleum Geology

4 sem. hrs. (3:2) Basic concepts of petroleum geology and techniques used in the exploration and production of hydrocarbon systems. Lectures and lab exercises will cover principles of stratigraphy, sedimentology, hydrocarbon generation, hydrocarbon-trapping mechanisms, reservoir characterization, seismic interpretation, well-log interpretation, and geologic risk analysis. Prerequisites: GEOL 4411 (may be taken concurrently). Recommended: GEOL 4422 and GEOL 4421. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

GEOL 4444 - Hydrogeology

4 sem. hrs. (3:2) Introduction to the fundamentals of groundwater and surface water flow; well hydraulics and evaluation of groundwater as a resource; chemical properties of groundwater and groundwater contamination; groundwater and the environment; and groundwater modeling. This course also examines some of the techniques associated with field hydrogeology and laboratory methods in hydrogeology. Prerequisites: GEOL 1403, PHYS 1401 or PHYS 2425, and MATH 2413, or permission of instructor. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

GEOL 4490 - Selected Topics

1-4 sem. hrs. May be repeated for credit if topics are significantly different. Subject materials variable. Faculty approval required. Offered on sufficient demand.

GEOL 4496 - Directed Independent Study

1-4 sem. hrs. Requires a formal proposal of study to be completed in advance of registration and to be approved by the supervising faculty, the chairperson, and the Dean of the College. Spring, Summer, Fall.

GEOL 4649 - Karst of the Yucatan Peninsula

6 sem. hrs. This course describes the different types of caves and karst rocks, the water rock interactions in carbonate rock systems, and it explains cave formation via hydrogeological and geochemical processes. It offers field work experience such as sample collection, determining field parameters, karst and cave surveys, measuring spring discharges in the Yucatán Peninsula of Mexico and laboratory experience on the Texas A&M University-Corpus Christi campus. Prerequisites: GEOL 1403 Physical Geology, GEOL 4411 - Sedimentation and Stratigraphy or GEOL 4444 Hydrogeology or GEOL 4416 Introduction to Geochemistry or GEOL 4311 Paleoclimatology.

GEOL 4650 - Field Geology

6 sem. hrs. (0:12) Field course involving practical application of geologic principles to field problems. Locations visited and material covered depends on hosting institution. Generally should include: mapping and outcrop data collection; measurement of stratigraphic sections; mapping and preparation of geologic cross-sections; preparation of geologic reports. Prerequisites: as required by hosting institution; generally includes: GEOL 3326 - Introduction to Geological Field Methods, GEOL 3414 - Igneous and Metamorphic Petrology, GEOL 3441 - Invertebrate Paleontology,GEOL 4411 - Sedimentation and Stratigraphy, GEOL 4421 - Structural Geology. Corequisite: SMTE 0094 Geology Laboratory Safety Seminar required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered on sufficient demand.

German

GERM 1311 - German I

3 sem. hrs. Introduction to listening, speaking, reading, and writing skills within a German cultural framework. For students without previous knowledge of the language. (Language laboratory required. One hour per week.) A lab fee is required for this course. TCCNS Equivalent: GERM 1311

GERM 1312 - German II

3 sem. hrs. Continued practice in listening, speaking, reading, and writing skills within a German cultural framework. German 1311 or equivalent required. (Language laboratory required. One hour per week.) A lab fee is required for this course. TCCNS Equivalent: GERM 1312

GERM 2311 - German III

3 sem. hrs. Reviews German grammar through oral and written practice with emphasis on language proficiency. Utilizes cultural readings in German to expand vocabulary and knowledge of the German culture. TCCNS Equivalent: GERM 2311

GERM 2312 - German IV

3 sem. hrs. Continued advanced development and review of all language skills within a German framework with an emphasis in the linguistic and cultural perspective. Successful completion of 2311 is required to receive credit for 2312. TCCNS Equivalent: GERM 2312

Geographic Information Science

GISC 1301 - Physical Geography

3 sem. hrs. (3:0) The goal of this course is to encourage you to think geographically, examining the interactions between physical systems and human activities. Introduction to topics covered include elements of Physical Geography (studies of atmosphere, ocean and land surface environments), Geographic Information Systems (computer systems that capture, analysis, and display of geographic information), and human environmental interactions. Cross listed with GEOG 1301. TCCNS Equivalent: GEOG 1301 This course counts toward the life and physical sciences foundational component area of the University Core Curriculum.

GISC 1336 - Digital Drafting and Design

3 sem. hrs. (2:2) An introduction to graphic and drafting principles and practices in surveying and mapping science. This course includes the development of the basic drafting skills needed to produce surveying plats and graphical presentations. The elements of descriptive geometry are addressed. A major component of the course is an introduction to the fundamentals of computer-aided drafting and design (CADD). Spring.

GISC 1470 - Geospatial Systems I

4 sem. hrs. (3:3) Introduction to geographic information systems (GIS) and its theoretical foundations. Topics covered include vector and raster data models, acquisition and manipulation of data, cartography, current topics, data quality, and basic spatial analysis. Principles and uses of GIS software also covered. Fall and Spring.

GISC 2250 - Field Camp I

2 sem. hrs. (0:6) A one-week field camp with intensive field data collection and computations. Traversing between control points. Digital contour data and leveling control. Detail spatial data by total station. Construction set out using total station and steel band. Taken during the sophomore or junior year. Spring. Prerequisite: GISC 2470.

GISC 2301 - Geospatial Systems II

3 sem. hrs. (2:3) An intermediate level course in the concepts and applications of geographic information systems (GIS). Topics covered include spatial database design and management, raster analysis, terrain mapping, analysis, and applications. Spring. Prerequisite: GISC 1470 - Geospatial Systems I .

GISC 2438 - Geospatial Software Systems I

4 sem. hrs. (3:3) Introduction to the design and development of GIS software to solve spatial problems. Topics covered include programming basics, design and implementation common tasks in GIS applications. Fall. Prerequisites: GISC 1470 - Geospatial Systems I and either COSC 1435 - Introduction to Problem Solving with Computers I or COSC 1330 - Programming for Scientists, Engineers, and Mathematicians.

GISC 2470 - Geospatial Plane Measurement I

4 sem. hrs. (2:4) Historical introduction to field measurement and mapping; distance measurement using electronic distance meters; calibration and reduction. Leveling instruments; principles, construction, testing and adjustment; ancillary equipment. Optical and electronic theodolites. Traverse computations and adjustment. Coordinate systems. Map projections. Fall. Prerequisite: MATH 1316 - Trigonometry or MATH 2413 - Calculus I.

GISC 3300 - Geospatial Mathematical Techniques

3 sem. hrs. (3:0) Characteristics of geographic/spatial information; overview of relevant sections of numbers, algebra and geometry, plane and spherical trigonometry, matrices, determinants and vectors, curves and surfaces, integral and differential calculus, partial derivatives, with an emphasis on geospatial applications. Concepts of geospatial coordinate systems and geospatial coordinate transformations; overview of spatial statistics and best-fit solutions with geospatial applications. Prerequisite: MATH 2413 - Calculus I and MATH 3342 - Applied Probability and Statistics*^. Fall.

GISC 3325 - Geodetic Science

3 sem. hrs. (2:2) History of geodetic measurement. Description of the geodetic model of the earth. Relationship between the ellipsoid, geoid, and earth's surface. Measurement of long baselines. Gravity and the geoid. Relationship between terrestrial observations and grid coordinates. Fall. Prerequisite: GISC 2470 - Geospatial Plane Measurement I.

GISC 3412 - Geospatial Plane Measurement II

4 sem. hrs. (2:4) Principles and reduction of observations and errors in spatial measurement. Techniques of horizontal and vertical angle measurement for precise positioning. Trigonometric heighting and vertical staff tacheometry. Setting out of structures. Design and computation of horizontal and vertical curves. Spring. Prerequisite: GISC 2470 - Geospatial Plane Measurement I and prerequisite or co-requisite GISC 1336 - Digital Drafting and Design.

GISC 3420 - Geospatial Software Systems II

4 sem. hrs. (3:3) Advanced programming course focusing on the design and implementation of GIS scripts and GIS web applications. Topics covered include GIS web applications, web mashups, GIS scripts, GIS tool creation, and advanced user interface design and implementation. Spring. Prerequisite: GISC 2301 - Geospatial Systems II and either COSC 1435 - Introduction to Problem Solving with Computers I or COSC 1330 - Programming for Scientists, Engineers, and Mathematicians.

GISC 3421 - Visualization for GIS

4 sem. hrs. (3:3) Basic elements of thematic cartography, cartographic theory, and cartographic projections. Integration of cartographic principles with GIS visualization. Principles of map design with GIS data. Spring. Prerequisite: GISC 2301 - Geospatial Systems II .

GISC 4180 - Geospatial Systems Internship^

1 sem. hrs. (1:0) Internship education requires work with approved Geospatial Systems related industry employer. Students provide weekly written reports and final presentation to program at the end of internship. Must have completed 60 semester hours before attempting. Fall, Spring, and Summer.

GISC 4305 - Legal Aspects of Spatial Information

3 sem. hrs. (3:0) Legal ownership of spatial data and information collected in the public sector. Public access to large digital databases. Copyright law as applied to spatial data. Legal issues related to property boundaries, statutory boundaries, voter district

boundaries, and jurisdictional boundaries. Government fees and charges for access to spatial data. Social and economic value of spatial data. Spring. Prerequisite: GISC 2470.

GISC 4315 - Satellite Positioning

3 sem. hrs. (2:2) Global reference systems. Use of satellite for navigation and positioning systems. History and review of satellite positioning systems. Measurement techniques using GPS. Point, differential, and kinetic positioning techniques. Error sources in satellite positioning. Future trends in satellite positioning technology. Fall. Prerequisites: GISC 2470 - Geospatial Plane Measurement I and MATH 2413 - Calculus I .

GISC 4318 - Cadastral Systems

3 sem. hrs. (3:0) Land ownership recording systems used in Texas and U.S. Investigation and research for artificial and natural boundaries. Title searches at the county courthouse, title plants, and other sources for cadastral research. Riparian and littoral boundaries. Boundary marking and preparation of cadastral plans. Metes and bounds descriptions. Writing field notes. Urban and rural cadastral issues. Use of coordinate systems in cadastral mapping. Fall. Prerequisite: GISC 3412 - Geospatial Plane Measurement II

GISC 4320 - Hydrography

3 sem. hrs. (2:2) Introduction to offshore and inshore hydrographic mapping. Tidal datums and their computation. Review of hydrographic and nautical charts. Electronic position finding and bathymetric data collection. Echo sounding, side scan sonar. Seafloor mapping and underwater locating. Beach (combined land and hydrographic) mapping. Spring even years. Prerequisites: GISC 2470 and MATH 2413.

GISC 4326 - Geomatics Professional Practice

3 sem. hrs. (2:2) An intensive one-week summer course presented by practicing geomatics professionals covering many of the aspects of operating a professional surveying practice in the State of Texas. Topics cover surveyor responsibility and liability, the surveyor in court, standards of practice, surveying mathematics, Texas coordinate system, celestial observations, and project control. Prerequisite: GISC 2250.

GISC 4335 - Geospatial Systems III

3 sem. hrs. (2:2) Advanced spatial analysis and modeling in GIS. Topics covered include exploratory analysis of spatial data, network analysis, spatial point patterns, area objects and spatial autocorrelation, and spatial interpolation. Also covers new approaches to

spatial analysis. Fall. Prerequisite: GISC 2301 - Geospatial Systems II and GISC 3421 - Visualization for GIS and MATH 3342 - Applied Probability & Stats .

GISC 4340 - Geospatial Computations and Adjustment

3 sem. hrs. (3:0) Theory of least squares adjustment of spatial data. Use of matrices for the solution of equations. Propagation of variances and statistical testing of adjustment solutions. Error ellipses and confidence intervals. Spring. Prerequisites: GISC 2470 - Geospatial Plane Measurement I and GISC 3300 - Geospatial Mathematical Techniques.

GISC 4350 - Field Camp II

3 sem. hrs. (0:6) A one-week field camp undertaking projects in cadastral, engineering, hydrographic, and geodetic positioning. Reduction of digital field data to produce final plans and reports. Taken during the senior year. Spring. Prerequisites: GISC 3412 - Geospatial Plane Measurement II and GISC 4318 - Cadastral Systems and GISC 2250 - Field Camp I.

GISC 4351 - Geospatial Systems Project

3 sem. hrs. (0:0:6) This course allows students to employ knowledge attained in other courses to create a project to spatially analyze information of interest to you and your field of study. Students will either undertake a GIS project to manage, analyze, and visualize spatial data, or a survey project in cadastral, topographic, engineering, hydrographic, or geodetic positioning survey. Spring. Prerequisite: GISC 4350 - Field Camp II or GISC 4335 - Geospatial Systems III

GISC 4371 - History of Land Ownership

3 sem. hrs. (3:0) This course prepares students by providing proper knowledge of how land transferred throughout history and techniques for researching land ownership in the present. Students receive an overview of legal aspects and other topics relative to land issues applicable for Land Surveyors, Civil Engineers, and GIS professionals, among others. Spring. Prerequisite: GISC 3412 - Geospatial Plane Measurement II

GISC 4431 - Remote Sensing and Photogrammetry

4 sem. hrs. (3:3) Provides the foundations to interpret, process, and apply remotely sensed data acquired by satellites and sub-orbital platforms (aircraft, UAVs) for mapping and analysis of our natural and built environment. Principles of electromagnetic energy-matter interaction, remote sensing systems and data characteristics, digital image processing, and informaton extraction methods will be covered. Included is treatment of:

aerial photogrammetry; multispectral, thermal, and hyperspectral sensing; earth observation satellites; radar and lidar; emergent topics. Emphasis will be on their use for geospatial and environmental applications. Fall. Prerequisites: PHYS 2425 - University Physics I and GISC 3300 - Geospatial Mathematical Techniques. Note: MEEN 3310 - Engineering Analysis for Mechanical Engineering in place of GISC 3300 - Geospatial Mathematical Techniques for MEEN major.

GISC 4590 - Selected Topics

1-5 sem. hrs. May be repeated for credit depending on topic. Variable content. Offered on request.

GISC 4596 - Directed Independent Study

1-5 sem. hrs. See College description. Offered on request. May be repeated for credit.

GISC 4690 - Co-operative Education

1 sem. hrs. Co-op education allows students to take time off their full-time studies to gain valuable experience-based learning with employers willing to put on students for a semester (14 weeks), six months, or over the summer. The Co-op program allows students to maintain their full-time status as a student (continue health insurance coverage with parents, not effect student loan repayment, access to college activities, etc.) while undertaking work in their field of interest. The Co-op program is a partnership between the employer, the student, and the university. Prerequisite: acceptance by Cooperative Education Coordinator.

Graphic Design

GRDS 1301 - Foundations of Graphic Design

3 sem. hrs. This course explores fundamental components of design theory, concept, and composition. Students will explore presentation techniques, printing processes, technical tactile skills associated with the field, defining and exploring a targeted audience, and appropriate software introductions. Students will create printed works utilizing these skill sets.

GRDS 1302 - Typography I

3 sem. hrs. Through the use of lectures, demonstrations and studio work students are introduced to the art of typography. Cultural and aesthetic histories of familiar typefaces are reviewed. An emphasis is placed on the rules of type, best practices in type-setting,

anatomy of letter forms, and appropriate uses of prescribed type faces. Hand rendering and digital media are used to give students a robust foundation in the study of typography. Prerequisites: GRDS 1301

GRDS 2301 - Historical Perspectives of Graphic Design

3 sem. hrs. This studio course examines the history of graphic design from the invention of writing to present day composition. Students will explore various movements in graphic design history and create design works that reflect these periods. Prerequisites: GRDS 1301 and GRDS 1302

GRDS 2302 - Design Studio I

3 sem. hrs. 3:0 This course introduces the fundamental principles of the graphic design industry. Students strengthen their vocabularies in design, theory, and visual communication. Exploring various two-dimensional projects, students will conduct research, form opinions, foster ideas, solve communication problems, learn to analyze and discuss graphic design work, and continue to develop their own creative process. Prerequisites: GRDS 1301 and 1302.

GRDS 2303 - Concept & Making

3 sem. hrs. This studio course offers an in-depth study of approaching concept and idea generation to produce relevant and innovative design solutions. Students will explore tactics and techniques for creating their own original assets to support their solutions. Photo and illustration creation, manipulation and output are studied in addition to the utilization of machines, technology and tools to fulfill creative curiosity. Prerequisites: GRDS 1301 and 1302.

GRDS 3301 - Typography II

3 sem. hrs. Through readings, writing assignments, lectures, and studio projects, students explore the relationship of type to cultural, political, and psychological dynamics of information exchange. The ideas of intellectual impact, complex hierarchy, active/passive readership, and emotional expression are all explored with the emphasis on user experience in typographic design. Prerequisites: GRDS GRDS 1301 - Foundations of Graphic Design 2302.

GRDS 3302 - Design Studio II

3 sem. hrs. This course encourages students to further develop their design process by reflecting on their own personal and artistic identities, while identifying and

communicating to a specific audience. Through a series of print and three-dimensional projects, students work to balance their own voice and develop strong conceptual thinking and formal experimentation methods. Prerequisites: GRDS 1301, 1302, 2301, and 2302.

GRDS 3303 - Design Experience & Awareness

3 sem. hrs. This studio course examines the role of design in society. Students will learn how to use empathy and a human-centered design approach to develop appropriate design solutions. Additionally, students will examine the role of environmental graphics to create works that reflect an enhanced impact in experience for the user. The topics in this course are explored through lectures, research and the creative development of a body of work.

Prerequisites: GRDS 2302.

GRDS 3304 - Publication & Editorial Design

3 sem. hrs. This studio course explores the foundations of publication and editorial design to expand students' design vocabulary. Students will explore the role of a graphic designer/art director in developing effective and innovative communication for editorial design. Prerequisites: GRDS GRDS 1301 - Foundations of Graphic DesignGRDS 1302 - Typography IGRDS 2301 - Historical Perspectives of Graphic Design 2302GRDS 3301 - Typography IIGRDS 3302 - Design Studio II

GRDS 3305 - Packaging Design

3 sem. hrs. This studio course will teach students how to develop creative strategies for problem solving in a client-based environment. Focusing on three-dimensional packaging, students will learn how design applies to various surfaces, products, and audiences. Prerequisites: GRDS 2302.

GRDS 3306 - User Interface/User Experience

3 sem. hrs. 3:0 This hands-on course examines how content is organized and structured to create a digital experience for a user, and what role the designer plays in creating and shaping user experience. Students will learn the roadmap process for developing robust User Interface/User Experience designs, from research, ideation and site mapping, to the design of engaging layouts for screens and the creation of dynamic prototypes.

Prerequisite: GRDS 2302.

GRDS 3307 - Book & Jacket Design

3 sem. hrs. 3:0 This course will cover concept and content development, design, and execution of single edition and limited edition books through lectures, demonstrations, and studio work. Emphasis placed on creativity, problem solving, organizational ability, technical precision, and independent work ethic.

GRDS 3308 - Copywriting

3 sem. hrs. 3:0 This studio course explores copywriting for design, advertising, and media. Students will create writing and messaging for a variety of media including print design, web design, and advertising design within a consumer-driven context.
Prerequisites: GRDS 1301, GRDS 1302, GRDS 2301, and GRDS 2302

GRDS 3309 - Building Websites

3 sem. hrs. This studio course will cover designing and maintaining a scalable and functional website utilizing contemporary building platforms. The processes and techniques demonstrated will allow students to plan the project scope, to generate website content, and to adopt the tools and expansive functionality available while learning best practices for the platform. Prerequisites: GRDS 2303 or Instructor Approval.

GRDS 3310 - Client Solutions

3 sem. hrs. In this studio course, students will define client needs, explore the designer-client relationship and investigate research strategies and methods for developing effective print and digital deliverables to meet established business goals. The conceptual and visual standards pertinent to creating a brand are explored and applied across a variety of client-driven projects.

Prerequisites: GRDS GRDS 1301 - Foundations of Graphic Design 2302.

GRDS 4304 - Emerging Technologies

3 sem. hrs. This studio explores the use of evolving current and emerging technology in the field to enhance storytelling and the user experience in a variety of interactive media. Prerequisites: GRDS 3306

GRDS 4305 - Poster Design

3 sem. hrs. 3:0 This studio course focuses history and practice of 2-dimensional poster design within a socially responsible context, advertising, and commercial context. During

the course, students will complete project-based works to communicate to a specific audience while maintaining a call to action. The posters may be created using digital media or mixed media.

GRDS 4308 - Business of Design

3 sem. hrs. 3:0 This studio course examines the modern day design studio and informs students on best practices when creating and initializing a business within the field. Students will create a business model for pricing, estimating and invoicing their work. Students will interact with a local client to conduct a professional mock business interview, strategy for their company, and proposal.

GRDS 4309 - Design in Advertising

3 sem. hrs. This studio course will teach students how to develop creative strategies for problem solving in a client-based environment. This studio focuses on adversting design as it applies to print, multimedia, outdoor, and direct mail design for a chosen audience. Prerequisites: GRDS 3310

GRDS 4310 - Portfolio and Professional Practices

3 sem. hrs. In this capstone course, the student prepares for a professional career in the graphic design field by developing self-promotional materials, including a printed and digital portfolio, while focusing on professional practices and job-seeking strategies. Guest speakers will typically join the class for discussion, critique, lecture and hiring scenarios such as mock interviews. Students will display their work in an organized portfolio showcase gallery exhibition.

Prerequisites: GRDS 3301, 3310 and 4304 or Instructor Approval

Note: May be taken three times for credit.

GRDS 4391 - Topics in Graphic Design

1 or 3 sem. hrs. Study of specialized topics and themes in Graphic Design. May be repeated when topics vary.

GRDS 4396 - Directed Independent Study

1 or 3 sem. hrs. See College description. Offered on application.

GRDS 4399 - Internship

3 sem. hrs. This course allows students to complete a semester long design-centric internship within their area of interest. Through the use of reflective journals, a project portfolio, and employer feedback, the student will report their experience to the supervising professor throughout the internship placement.

Prerequisites: GRDS 2302 and Approval of Instructor.

Note: May be repeated for credit.

History

HIST 1301 - U.S. History to 1865*

3 sem. hrs. A survey of the political, social, economic, military, cultural and intellectual history of the United States from 1492 to 1865. TCCNS Equivalent: HIST 1301 Satisfies the university core curriculum requirement in U.S. History.

HIST 1302 - U.S. History Since 1865*

3 sem. hrs. A survey of the political, social, economic, military, cultural and intellectual history of the United States from 1865 to the present. TCCNS Equivalent: HIST 1302 Satisfies the university core curriculum requirement in U.S. History.

HIST 2301 - Texas History

3 sem. hrs. Spanish colonial period, Mexican statehood, independence, the development of the Republic, annexation and growth as a state. TCCNS Equivalent: 2301 Online Classification Face-to-Face 1-24%

HIST 2311 - Western Civilization I

3 sem. hrs. Survey of the cultures and civilizations of the Ancient Mediterranean world and the political, social, economic, military, cultural, and intellectual influences shaping the emergence and development of Europe to 1500. TCCNS Equivalent: HIST 2311

HIST 2312 - Western Civilization II

3 sem. hrs. A survey of the political, social, economic, military, cultural, and intellectual development of Europe from 1500 to the present. TCCNS Equivalent: HIST 2312

HIST 2322 - World History Since 1500

3 sem. hrs. World History Since 1500 examines major global issues over the past 500 years. Topics may include European expansion and colonialism, the integration of the Americans into world economic systems, changes in science and technology, decolonization, and modern environmental problems. This course will help students understand historical events within a global framework. TCCNS Equivalent: HIST 2322

HIST 3301 - History of World Religions

3 sem. hrs. Surveys the key beliefs, practices, rituals, figures, and historical developments of the world's major religious traditions, including Hinduism, Buddhism, Confucianism, Judaism, Christianity, Islam, and New Age religions. Gives particular attention to their encounter with modernity and their complicated place in today's global, diverse, post-modern world.

HIST 3303 - Colonial Latin America

3 sem. hrs. An overview of Latin American history from pre-Columbian times until Independence.

HIST 3304 - Modern Latin America

3 sem. hrs. A study of the major political, economic and cultural processes that marked the development of modern Latin America.

HIST 3307 - The Ancient World

3 sem. hrs. This course examines the ancient history of the human race. It begins with the evolution of Homo sapiens in Africa and continues through approximately the 4th century CE. Topics examined include the formation of cultures, societies, states, and empires around the world including those in Egypt, Southwest Asia, India, China, and the Mediterranean.

HIST 3315 - Europe 1750-1815

3 sem. hrs. Explores the processes which contributes to the establishment of a new political, economic, and social order in Europe. The course includes an in-depth focus upon the causes and consequences of the French Revolution as well as an examination of the European response to Napoleon.

HIST 3317 - Europe 1815-1914

3 sem. hrs. The evolution of European industrial society from the Congress of Vienna to the outbreak of World War I. Themes include changes in the nature of work and family life, urbanization, and the emergence and growth of liberalism, socialism, nationalism, and romanticism as competing ideologies.

HIST 3319 - Europe 1914 to the Present

3 sem. hrs. Political, social, economic and cultural developments since 1914: includes the impact of World War I, the Russian Revolution, Fascism, the origins of the Cold War, the tension between European unification and growing ethnic tensions and the dissolution of the Soviet empire.

HIST 3320 - Colonial and Revolutionary U.S.

3 sem. hrs. Traces regional economic, social, and political change in the Americas from 1607 to the end of the Revolution.

HIST 3321 - The Early American Republic

3 sem. hrs. This course examines American history from the end of the revolutionary war to 1850. Political, economic, and social issues including, but not limited to, the creation of the Constitution, the development of the first and second party systems, the market revolution, antebellum reform, the Old South, and westward expansion.

HIST 3323 - Civil War and Reconstruction

3 sem. hrs. Background and causes of the Civil War; military, political, diplomatic, and economic developments during the War; Reconstruction and post-war adjustments.

HIST 3324 - U.S. Gilded Age and Progressive Era

3 sem. hrs. An examination of the dramatic period when the United States definitively settled the remaining portions of the continent and decisively moved towards becoming an industrial, urban nation with world-wide economic and political influence.

HIST 3325 - Emergence of Modern U.S.

3 sem. hrs. Study of American life from World War I through World War II. Topics include America's rise to a world power, the social, cultural, and political effects of corporate enterprise, urbanization, and immigration, women's suffrage, the Twenties, and the New Deal.

HIST 3326 - U.S. Since 2nd World War

3 sem. hrs. A study of American life and development as a world power since World War II.

HIST 3335 - The U.S. Urban Experience

3 sem. hrs. A general survey of the social, cultural, and political history of the American city, with particular emphasis on Corpus Christi and the ways our city illustrates these larger trends.

HIST 3340 - Modern Asia

3 sem. hrs. This course will examine Asia from 1600 to the present. Topics include politics, the nation state, colonialism, empire, war, nationalism, the Cold War and revolution, all in a historical context.

HIST 3345 - America by Nature

3 sem. hrs. Examines the role of nature in the nation's past, looking beyond more traditional historical topics to discover how the environment has shaped society and the ways in which humans, in turn, have shaped nature throughout American history. Community-engaged learning component.

HIST 3350 - Dictators and Dirty Wars in Latin America

3 sem. hrs. Explores the rise of dictatorships and military regimes in twentieth century Latin America. Focuses on human rights struggles and popular movements in Mexico, Central America and the Southern Cone.

HIST 3360 - Introduction to Museum Studies

3 sem. hrs. In this cross-disciplinary class, students of history, sciences, the arts, and more will be introduced to the different departments of a museum and gain experience in programming, exhibits, research, public engagement, and other various aspects of museum management through their participation in a real working museum (Corpus Christi Museum of Science and History).

HIST 3370 - Introduction to Public History

3 sem. hrs. A Project-centered class that examines public history practices and debates, including the changing field over time, the relationship between history and memory, and

the interpretive and sometimes controversial nature of historical sites and exhibits. Students will also learn methods and practices of museums, archives, oral history, digital history, and more. Includes community-engaged learning, workshops, local field trips.

HIST 3373 - Oral History and Podcasting

3 sem. hrs. A project-based course designed to teach students oral history, audio recording, and editing. Topics include oral history theory and methods, the role of testimony and memory in constructing historical narratives, interview techniques, archival practices, and the technical aspects of audio production, audio storytelling, and podcasting. Online classification: Face-to-Face 1-24%

HIST 3385 - The Art and Practice of History

3 sem. hrs. Introduces students to the most significant historiographical problems that face historians, focusing on recent and current controversies that have shaken the profession and been the subject of public and political debate. Provides examples of how historians think about and do history. Prerequisites: HIST 1301 and HIST 1302 or equivalent, and either HIST 2311 or 2312. Onlne Classification: Face-to-Face 1-24%.

HIST 4320 - U.S. Cultural Experience

3 sem. hrs. Explores ways that the myriad groups who have made up American society from the colonial period to the "information age" understood and expressed themselves and related to each other. (The chronological scope of this course may vary.)

HIST 4327 - U.S. Modern Popular Culture

3 sem. hrs. The historical development of modern popular culture—including television, movies, fiction, newspapers, music and consumption—and its effect on the structure and experience of U.S. society and work from the nineteenth century to the present.

HIST 4335 - The Military and United States History

3 sem. hrs. The development of U.S. military strategy and policy from the Colonial Wars through Vietnam.

HIST 4336 - Mexican American History

3 sem. hrs. Spanish and Mesoamerican backgrounds, conquest and mestizaje, settlement of Aztlán, interaction with Anglo-Americans, 20th century immigration, urbanization,

identity, the Chicano Movement, and Mexican American organizational/political development.

HIST 4337 - United States Women's History

3 sem. hrs. Themes include transformations in the notion of womanhood and of sexual differences, changes in the structure, function, and concept of "family" and "household," and historical factors that have shaped women's role in the work force and public life.

HIST 4340 - European Women's History

3 sem. hrs. Study of the experiences of European women from the 18th to the 20th centuries. Also addresses the role that gender has played in the development of modern European societies. Some topics covered are women and the French Revolution, gender and class in industrial Europe, feminism and suffrage, and women and fashion.

HIST 4342 - The Holocaust

3 sem. hrs. Examines the Holocaust by exploring the role of racism and anti-Semitism, the rise of Nazi policies, Jewish responses and resistance to them, deportation and genocide, the role of war, and the aftermath and memory of an event "beyond human imagination."

HIST 4345 - European Thought and Culture, 1750-present

3 sem. hrs. Survey of the major European intellectual and cultural movements from the Enlightenment to the present. Broader than a traditional course in intellectual history, special attention will be given to the emergence and development of the concepts of "modernity" and the challenges of "postmodernism."

HIST 4346 - The Search for Modern China: From 1600 to the Present

3 sem. hrs. This course surveys modern Chinese history from the late Ming dynasty to the present, with an emphasis on the late 19th and 20th centuries. Topics include empire, colonialism, nationalism, the nation state, modernization, revolution and the Cold War, all in a historical context.

HIST 4347 - The History of Sexuality in the West

3 sem. hrs. This course will examine how ideas about sexuality as well as sexual practices and identities have evolved over time and in different places; how the categories of homosexuality and heterosexuality were created and how they have been

perceived. The course will focus on the 19th and 20th centuries in Europe and the United States, and address the themes of gender, body, race, class, image, representation, and the law.

HIST 4349 - Transnational Histories of Asia and the Pacific

3 sem. hrs. Explores the transnational relations of Asia and the Pacific with the West from the 19th century to the present day. Themes include colonialism and imperialism, diaspora and migration, labor and economy, war and displacement. Topics include the Opium Wars, Immigration and Exclusion, Atomic Bombing of Hiroshima, Military War Brides, Third World Radicalism, Transnational Adoption Complex, and Environmentalism and Globalization.

HIST 4350 - Narratives of World War II in the Pacific

3 sem. hrs. Examines how the relations between history, memory, and contemporary politics in post-WWII U.S. and Asia-Pacific have shaped the meaning of various contentious issues related to the Pacific War-such as war origins and responsibility, atrocities, racism, reparations, and nationalism-in textbooks, monuments, literature, art, films, political debates, exhibits, commemorative events, and scholarly works in different social and temporal contexts.

HIST 4352 - Mexican American Women's History

3 sem. hrs. Examines the broad political, economic, social, and cultural trends in the lives of Mexican American women since 1848.

HIST 4374 - Mexico: the National Period

3 sem. hrs. Traces economic, social, and political change in Mexico from independence to the present. Prerequisite: Junior standing or above

HIST 4375 - Cold War Kids: Youth in Modern Latin America

3 sem. hrs. An examination of the experiences of Latin American youth in modern Latin America. Special emphasis on the role of young people in the revolutions and rebellions that marked the Cold War period.

HIST 4385 - Historical Research and Writing

3 sem. hrs. The study and writing of history, with emphasis on historical analysis, research, and writing. Designed as the capstone course for history majors and prospective

social science teachers. This course will feature a senior research paper, and should be taken during the student's final year of undergraduate study. Prerequisite: either HIST 3385 or READ 3353 Either HIST 3385 or READ 3353

HIST 4390 - Topics in History

3 sem. hrs. Study of significant periods, countries, regions, or themes in history. May be repeated when topics vary. Offered on sufficient demand.

HIST 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

HIST 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application.

HIST 4399 - Internship

3 sem. hrs. Best practices and methods in digital archives, museums, and /or public history through field work at a local organization or museum. Offered on application. Repeatable up to 6 hours. Permission of instructor. Online Classification: Face-to-Face 1-24%

Health Care Administration

HCAD 3300 - The Health Care System

3 sem. hrs. (3:0) Addresses how the U.S. Health Services System is organized, how health services are delivered, and the mechanisms by which health services are financed in the United States. Provides an undergraduate level overview of the U.S. health services system and its key components, including health system resources, health system foundations, health system resources, health system processes, and health system outcomes. Should be taken during first semester of Health Sciences courses. Cross listed with HLSC 3300.

HCAD 3310 - Epidemiology

3 sem. hrs. (3:0) Applies epidemiologic methods and procedures to the study of the distribution and determinants of health and diseases, morbidity, injuries, disability, and mortality in populations. Epidemiologic methods for the control of conditions such as infectious and chronic health hazards, and unintentional injuries are discussed. Other

topics include quantitative aspects of epidemiology, for example, data sources, measures of morbidity and mortality, evaluation of association and causality, and study design. Cross listed with HLSC 3310. Prerequisite/Corequisite: HCAD 3300 or instructor approval.

HCAD 3320 - Health Care Marketing

3 sem. hrs. (3:0) Provides an introductory study of the essentials of marketing within the dynamically evolving health care system. The marketing framework is provided as a basis for decisions related to marketing mix variables. Content includes buyer behavior, marketing research, market segmentation, and marketing strategy. Cross listed with HLSC 3320. Prerequisite/Corequisite: HCAD 3300.

HCAD 3330 - Financial Management in Health Care

3 sem. hrs. (3:0) Provides an introduction to health care financial management including selected topics from financial accounting, management accounting, finance, internal audit and personal finance. Health care payment and classification systems are studied and practical applications are emphasized. Cross listed with HLSC 3330. Prerequisite/Corequisite: HCAD 3300.

HCAD 3340 - Health Program Planning and Evaluation

3 sem. hrs. (3:0) Introduces the skills and techniques required to research and develop culturally competent health programs. Students create new data and utilize existing data to assess community needs, implement community health programs, and evaluate program effectiveness, exploring the concepts, processes and techniques used in health program planning, implementation, and evaluation. The course emphasizes the importance of teams and partnerships in successful community health programs. This is an intensive writing course. Cross listed with HLSC 3340. Prerequisite: MATH 1442, 1342, or 2342. Prerequisite/Corequisite: HCAD 3300.

HCAD 3350 - Information Systems and Technology in Health Care

3 sem. hrs. (3:0) Provides an overview of the role technology plays in management of health care information. Emphasis is placed on system analysis, techniques, and skills used in information management. Covers determining what information is needed by whom; designing information flows, procurement of computer/telecommunication resources, assuring information security, and continuing management of information systems supporting healthcare delivery. Satisfies university computer literacy requirement. Cross listed with HLSC 3350. Prerequisite/Corequisite: HCAD 3300.

HCAD 3360 - Health Education and Promotion

3 sem. hrs. (3:0) Provides an introduction to the discipline and profession of health education and promotion. It examines the concepts of health and wellness, national and global health status, theories of behavior change, and the implementation and assessment of health promotion interventions. It provides an introduction to medical terminology for health educators. This is a writing intense course. Cross listed with HLSC 3360. Prerequisite/Corequisite: HCAD 3300.

HCAD 3370 - Complementary and Alternative Medicine

3 sem. hrs. (3:0) Provides an introduction to complementary and alternative medicine with an emphasis on related economic, political, legal, and social issues. The course identifies the processes, interventions, and funding agencies available for providing alternative care; reviews the various professions within alternative and complementary medicine; and addresses the holistic approach to health and well-being. Cross listed with HLSC 3370.

HCAD 4100 - Assessment of Accumulated Knowledge

1 sem. hrs. (1:0) Provides an assessment of student knowledge garnered from Health Science program course work. Allows creation of a business resume and mock interview experience. Prepares students for the capstone Practicum course. Cross listed with HLSC 4100. Prerequisite: Completion of 3000 level courses.

HCAD 4300 - Management and Organizational Behavior in Health Care

3 sem. hrs. (3:0) Introduces students to principles of management and organization behavior in healthcare. Topics include management, planning, organizing, staffing, leading, controlling, decision making, communicating, and professionalism, as well as the connective processes of decision making, coordinating, and communicating in healthcare organizations. This is an intensive writing course. Cross listed with HLSC 4300. Prerequisite: Completion of 3000 level courses.

HCAD 4310 - Health Law, Policy and Ethics

3 sem. hrs. (3:0) Introduces law and the legal system with special emphasis on health-related topics and policies, and key health law issues. Includes the study of the legal and regulatory environment of health care and the administration of health services with a review of the laws pertaining to healthcare institutions, physicians, and other healthcare workers who contribute to patient care. Tort and contract law are emphasized. The course addresses policy issues and ethics through topics like patient rights, reproduction, and end

of life decisions. Cross listed with HLSC 4310. Prerequisite: Completion of 3000 level courses.

HCAD 4320 - Project Management in Health Care

3 sem. hrs. (3:0) Introduces the fundamental project management concepts required to design, develop and deploy project plans successfully within the healthcare industry. The management of resources, schedules, risks, and scope of a project are examined for successful project implementation. Students are exposed to the role of healthcare project managers and the project management process as they provide structure and oversight to the constantly growing and changing healthcare industry. Cross listed with HLSC 4320. Prerequisite: Completion of 3000 level courses.

HCAD 4330 - Human Resource Management in Health Care

3 sem. hrs. (3:0) Presents the foundational concepts of healthcare human resource management. Students are introduced to fundamental human resource management techniques needed within health organizations including leadership, workforce planning, recruitment, employee selection, compensation, employee development, workload management, human resource law, and ethics. Future healthcare management and leadership professionals must understand these concepts to comply with human resource department policies and support the strategic plan. Cross listed with HLSC 4330. Prerequisite: Completion of 3000 level courses.

HCAD 4340 - Quality Management and Evaluation in Health Care

3 sem. hrs. (3:0) Introduces the principles of quality assessment and outcome management in healthcare organizations. This course is an introduction of integrated delivery systems and their operations. It includes an examination of patient care management and the patient experience. A framework for understanding healthcare quality efforts is also an integral part of the course. Cross listed with HLSC 4340. Prerequisite: Completion of 3000 level courses.

HCAD 4350 - Global Health/Health Disparities

3 sem. hrs. (3:0) Provides students with an historical perspective on global health issues and leads to an understanding of current and future concerns. Emphasis is on the global burden of disease and determinants of health as well as health disparities. Provides students with an introduction to the study of health disparities in the United States, examining how health disparities are defined and measured and exploring issues such as how the structure of American society affects who gets sick and who gets care. Case

studies expose students to a variety of real-life scenarios and explore a range of issues. This is an intensive writing course. Prerequisite: Completion of 3000 level courses.

HCAD 4680 - Practicum

6 sem. hrs. (3:9) The Health Science Practicum is an institution-based project course requiring the student to complete on-site practicum hours. It provides a structured and guided learning environment to help students make the most of their practicum experience. Course components facilitate students' professional development, focusing on the transition from the role of a student to the role of a healthcare professional. Cross listed with HLSC 4680. Prerequisites: HCAD 4100 and completion of 3000 level courses or last semester of enrollment.

Health Sciences

HLSC 3300 - The Health Care System*

3 sem. hrs. (3:0) Addresses how the U.S. Health Services System is organized, how health services are delivered, and the mechanisms by which health services are financed in the United States. Provides an undergraduate level overview of the U.S. health services system and its key components, including health system resources, health system foundations, health system resources, health system processes, and health system outcomes. Should be taken during first semester of Health Sciences courses. Cross listed with HCAD 3300.

HLSC 3310 - Epidemiology^

3 sem. hrs. (3:0) Application of epidemiologic methods and procedures to the study of the distribution and determinants of health and diseases, morbidity, injuries, disability, and mortality in populations. Epidemiologic methods for the control of conditions such as infectious and chronic health hazards, and unintentional injuries are discussed. Other topics include quantitative aspects of epidemiology, for example, data sources, measures of morbidity and mortality, evaluation of association and causality, and study design. Cross listed with HCAD 3310.

HLSC 3320 - Health Care Marketing^

3 sem. hrs. (3:0) An introductory study of the essentials of marketing within the dynamically evolving health care system Cross listed with HCAD 3320.

HLSC 3330 - Financial Management in Health Care^

3 sem. hrs. (3:0) Introduction to health care financial management including selected topics from financial accounting, management accounting, finance, internal audit and personal finance. Health care payment and classification systems will be studied and practical applications will be emphasized. Cross listed with HCAD 3330.

HLSC 3340 - Health Program Planning and Evaluation^

3 sem. hrs. (3:0) Introduction to the skills and techniques required to research and develop culturally competent health programs. Students will gain a basic understanding of how to utilize existing data to assess community needs, implement community health programs, and evaluate program effectiveness, exploring the concepts, processes and techniques used in health program planning, implementation, and evaluation. The course will emphasize the importance of teams and partnerships in successful community health programs. Cross listed with HCAD 3340. Prerequisite: MATH 1442, 1342, or 2342

HLSC 3350 - Information Systems and Technology in Health Care^

3 sem. hrs. (3:0) Provides an overview of the role technology plays in management of health care information. Emphasis is placed on system analysis, techniques, and skills used in information management. Cross listed with HCAD 3350.

HLSC 3360 - Health Education and Promotion

3 sem. hrs. This course provides an introduction to the discipline and profession of health education and promotion. It examines the concepts of health and wellness, the national and global health status, theories of behavior change, and the implementation and assessment of health promotion interventions. Cross listed with HCAD 3360.

HLSC 3370 - Complementary and Alternative Medicine^

3 sem. hrs. (3:0) Introduction to complementary and alternative medicine with an emphasis on related economic, political, legal, and social issues. Cross listed with HCAD 3370.

HLSC 4100 - Assessment of Accumulated Knowledge

1 sem. hrs. This course provides an assessment of student knowledge garnered from Health Science program course work. It also prepares students for the capstone Practicum course. Cross listed with HCAD 4100.

HLSC 4300 - Management and Organization Behavior in Health Care^

3 sem. hrs. (3:0) Introduction to principles of management and organization behavior in healthcare with emphasis on human resource management topics and issues. Cross listed with HCAD 4300.

HLSC 4310 - Health Law^

3 sem. hrs. (3:0) Introduction to law and the legal system with special emphasis on health related topics including quarantine and key health law issues. Cross listed with HCAD 4310.

HLSC 4320 - Project Management in Healthcare

3 sem. hrs. This course introduces the fundamental project management concepts required to design, develop and deploy project plans successfully within the healthcare industry. The management of resources, schedules, risks, and scope of a project are examined for successful project implementation. Students are exposed to the role of healthcare project managers and the project management process as they provide structure and oversight to the constantly growing and changing healthcare industry. Cross listed with HCAD 4320.

HLSC 4330 - Human Resource Management in Healthcare

3 sem. hrs. This course presents the foundational concepts of healthcare human resource management. Students are introduced to fundamental human resource management techniques needed within health organizations including leadership, workforce planning, recruitment, employee selection, compensation, employee development, workload management, human resource law, and ethics. Future healthcare management and leadership professionals must understand these concepts to comply with human resource department policies and support the strategic plan. Cross listed with HCAD 4330.

HLSC 4340 - Quality Management and Evaluation in Health Care^

3 sem. hrs. (3:0) Introduction to principles of quality assessment and outcome management in healthcare organizations. Cross listed with HCAD 4340.

HLSC 4390 - Selected Topics in Health Science

1-3 sem. hrs. Selected topics for special study related to health science issues. May be repeated for credit when topics vary. Not required for the BSHS but may be used to fulfill elective requirement.

HLSC 4396 - Directed Independent Study

1-3 sem. hrs. Course not required for the BSHS but may be used to fulfill elective requirement. Permission of Instructor required.

HLSC 4680 - Practicum

6 sem. hrs. (3:9) The Health Science Practicum is an institution-based project course requiring the student to complete on-site practicum hours. It provides a structured and guided learning environment to help students make the most of their practicum experience. Course components facilitate students' professional development, focusing on the transition from the role of a student to the role of a healthcare professional. Prerequisites: Completion of 3000 level courses or last semester of enrollment. Cross listed with HCAD 4680. Prerequisites: Completion of 3000 level courses or last semester of enrollment.

Health

HLTH 2370 - Introduction to Health

3 sem. hrs. Concepts essential to understanding the health profession: competencies and career opportunities for professional health educators in school and community settings.

HLTH 3342 - Sexuality in Health Education

3 sem. hrs. Many aspects of human sexuality; physiology and function of human reproductive system, factors involved in learning sex roles, biological and emotional motivations associated with the sexual aspects of life and their relationship to marriage and family planning.

HLTH 3353 - Substance Abuse and Health

3 sem. hrs. A basic knowledge and understanding of the physiological, psychological, social, environmental and behavioral aspects of drug use and abuse in this country to prepare students to make mature and responsible decisions regarding drug use and to assist others in making similar decisions affecting drug-taking behavior.

HLTH 3361 - Consumer Health

3 sem. hrs. This course is designed to provide general concepts, strategies and sources of information in selecting health products and services.

HLTH 3371 - Community and Environmental Health

3 sem. hrs. An overview of the function, organization, and leadership of health agencies at the national, state, and local levels as well as the dimensions of health affected by our environment.

HLTH 4308 - Organization and Administration of Health

3 sem. hrs. Theory and practice in the development and use of creative and traditional health education strategies in schools, community settings; emphasis is given to cognitive, affective and behavioral teaching strategies.

HLTH 4310 - Exercise and Health

3 sem. hrs. Interdisciplinary planning and implementation of exercise programs in school, community and worksite settings; applied exercise physiology, nonclinical exercise assessment; exercise-education strategies to promote adherence in health related exercise programs.

HLTH 4325 - Program Development and Evaluation

3 sem. hrs. Theory and practice in evaluation of health programs in school and community; analysis of test results; evaluation of standardized health tests.

HLTH 4350 - Creative Life Styles for Wellness

3 sem. hrs. A course supporting knowledge, attitudes, skills, and behaviors in the five wellness dimensions physical, social, emotional, intellectual, and environmental. Special emphasis will be placed on personal enrichment.

HLTH 4696 - Directed Individual Study

1-6 sem. hrs. May be repeated for credit when the topic varies. Programs will be designed for individual cases through special permission of the Department Chair and Dean.

Honors

COMM 1315.H01 - Honors Public Speaking

3 sem. hrs.

A study of the art of public speaking and the tools employed by the speaker to build his/her craft. Basic public speaking techniques and terminology will be emphasized. Satisfies the oral communication component of the University core curriculum.

ENGL 3361.H01 - Honors Strategies and Genres of Advanced Writing

3 sem. hrs. Practice in techniques and tactics of the sophisticated writer. Focus on rhetorical strategies that succeed in specific discourse situations, both academic and non-academic.

HONR 1101 - Honors Campus Leadership Seminar

1 sem. hrs. This course is intended to serve as an introduction to the Honors Program, its requirements and the Program's commitment to service, as well as the Honors Student Association. In an effort to prepare students to be campus and community leaders, students learn the organizational structure of the campus and engage in various events to become familiar with the campus and our surrounding community, its traditions and its needs. Students take this course in addition to UNIV 1101 – First-Year Seminar

HONR 1102 - Honors Community Leadership Seminar

1 sem. hrs. This course provides a framework and guidance for leadership and service. Students will make connections with campus and community leaders in order to begin charting their path toward service. Students take this course in addition to UNIV 1102 – First-Year Seminar.

HONR 2101 - Honors Experience Seminar

1 sem. hrs. In the Honors Experience Seminar students begin the exploration process for their Project of Excellence. This includes honing information literacy skills, discovering ways to make connections with potential faculty mentors, and connecting the Project of Excellence to personal career and life goals. In addition, students will investigate possibilities for travel, service and research that will help them achieve academic, personal and professional goals. Students will also create a plan for earning their Honors elective credits.

HONR 3101 - Project of Excellence Seminar I

1 sem. hrs. This seminar culminates in the completion of a Preliminary Proposal for the Project of Excellence with the guidance and approval of the course instructor and the student's faculty mentor. As part of the Preliminary Proposal, the student will complete a timeline that sets a course for project completion in time for graduation. In addition, students will be introduced to TAMUCC's Research Compliance process and will complete any training necessary for his/her project. Students must successfully complete HONR 3101 in order to register for HONR 4101.

HONR 3340 - Academic and Field Research

3 sem. hrs. Examination of the assumptions and questions underlying research methods across disciplines, with special emphasis on how methodologies from different fields (such as science and humanities) can complement each other. The course will address issues such as 1) the distinct qualities of quantitative and qualitative research, 2) current uses of surveys, interviews, and market research, 3) the construction of new knowledge in various disciplines, from problem to publication, 4) the critical use and evaluation of electronic and print resources, archival materials, government documents, and scholarly list serves.

HONR 3490 - Topics in the Humanities

1-4 sem. hrs. A course that deals with significant contemporary issues in the arts, humanities, and/or education. May be repeated when topics vary.

HONR 3491 - Science and Technology for Decision Makers

4 sem. hrs. A course in the natural sciences concerned with the interdisciplinary nature of science, the formal tools and techniques of critically evaluating scientific research, and the use of qualitative and quantitative data in the application of science and technology.

HONR 3492 - Topics in the Sciences

1-4 sem. hrs. A course that deals with significant contemporary issues in the disciplines of the natural sciences, health sciences, social sciences, and/or business. May be repeated when topics vary.

HONR 4101 - Project of Excellence Seminar II

1 sem. hrs. This seminar culminates in the completion of full proposal for the Project of Excellence. The proposal is completed with the guidance and approval of both the course instructor and the faculty mentor. Students must successfully complete HONR 4101 in order to register for HONR 4102.

HONR 4102 - Project of Excellence Seminar III

1 sem. hrs. A seminar devoted to the completion of the Project of Excellence.

HONR 4396 - Honors Directed Independent Study

3 sem. hrs. Individual supervised study / research. Requires a formal proposal of study to be completed in advance of registration to be approved by a supervising faculty member and the Honors Director and Program Coordinator. Only 3 semester hours of Honors independent study credit may be counted toward the Honors graduation requirement.

HONR 4397 - Honors Internship

3 sem. hrs. Practical experience related to the student's major field. Activity must be connected to an academic research question and a body of knowledge that addresses some aspect of the activity to be undertaken. Internships require approval by the Honors Director and Program Coordinator. At the close of the internship, a written report and self-assessment must be submitted to a supervising faculty member and the Honors Program office. Internship is offered on a pass/fail basis and students must volunteer a minimum of 120 hours and meet the course objectives in order to receive course credit.

HONR 4398 - Honors Applied Experience

3 sem. hrs. Practical experience connected to the student's field of study, usually with a service or leadership component. Applied experience requires approval by the Honors Director and Program Coordinator. Activity must be connected to an academic research question and a body of knowledge that addresses some aspect of the activity to be undertaken, and result in a written product submitted to a supervising faculty member and the Honors Program office. Applied Experience is offered on a pass/fail basis and students must volunteer a minimum of 120 hours and meet the course objectives in order to receive course credit.

HONR 4490 - Seminar in the Humanities

1-4 sem. hrs. Study of specialized topics and themes in arts, humanities, and education. May be repeated when topics vary.

HONR 4492 - Seminar in the Sciences

1-4 sem. hrs. Study of specialized topics and themes in the sciences, health sciences, social sciences, and business. May be repeated when topics vary.

PHIL 2303.H01 - Honors Introduction to Logic

3 sem. hrs.

Basic principles and techniques used in understanding, constructing, and evaluating arguments. Topics covered may include formal methods of analyzing arguments, informal fallacies, scientific reasoning, and moral arguments.

PHIL 3340.H01 - Honors Professional Ethics

3 sem. hrs.
A rigorous and comprehensive study of theoretical and applied ethics with an emphasis on the application of ethical theory to clarify, explain, and resolve real-world ethical dilemmas. Satisfies the philosophy component of the University core curriculum.

Industrial Engineering

IEEN 2302 - Engineering Economics

3 sem. hrs. (3:0) Engineering management relies on the knowledge of engineering economics to be able to evaluate projects from a financial perspective. Optimizing financial performance of a project is a key responsibility of the engineer in the decision-making process. Examples of engineering projects would include but not limited to equipment replacement analysis, planning a new product line, and waste management. This course is designed to present engineering students the major concepts and techniques of engineering economic analysis that are needed in the decision-making process. The emphasis of this course is on the analytical analysis of money and its impact on decision making. Prerequisite: MATH 2413-Calculus I. Offered: Fall and Spring.

IEEN 3302 - Operations Research

3 sem. hrs. (3:0)
Introduction to operations research, linear programming, duality, other algorithms for linear programming, the transportation and assignment problems, dynamic programming, integer programming; offered: Fall and Spring.

Prerequisite: MATH 2414 – Calculus II. Corequisites: MATH 3311 – Linear Algebra.

IEEN 3320 - Human Factors

3 sem. hrs. (3:0)
The principles of the life sciences, engineering, and mathematics are applied to the investigation of existing and proposed socio-technical systems. Methods for the reduction of fatigue and human error are taught. Various fields of human factors and the fundamental concepts of the discipline are introduced. This course provides the basics of human perceptual, cognitive, and motor abilities relevant to human factors. This course

also offers class project opportunities gain experience using human factors knowledge in actual applied settings. Offered: Fall and Spring.

Prerequisite: ENGR 1312 - Foundations of Engineering II.

Corequisites: MATH 3342 Probability & Statistics

IEEN 3324 - Human Computer Interface

3 sem. hrs. (3:0)
The emphasis of this course is the design of the human-computer interface. The fundamental concepts of human-computer interaction and user centered design thinking are taught, through working in teams on an interaction design project, supported by lectures, readings, and discussions. The variety of evaluation methods and design principles of usable and appropriate computer interfaces are introduced based on psychological, social, and technical analysis. Topics will include usability and affordances, direct manipulation, systematic design methods, user conceptual models and interface metaphors, design languages and genres, human cognitive models, physical ergonomics, information and interactivity structures, and design tools and environments. Offered: Fall and Spring.

Prerequisite: ENGR 1312 - Foundations of Engineering II.

Corequisite: IEEN 3320 Human Factors.

IEEN 3330 - Robotics and Automation

3 sem. hrs. (3:0)
This course covers topics of concepts, principles, and relationships of automated assembly devices, computer aided drafting/design (CADD), computer-aided manufacturing (CAM), industrial robots, numerical control (NC), industrial lasers, programmable logic controllers (PLCs), automated guided vehicles (AGVs), flexible manufacturing systems (FMS), and computer- integrated manufacturing (CIM). Offered: Fall and Spring. Prerequisite: ENGR 2460 Circuit Analysis

IEEN 4310 - Process Engineering

3 sem. hrs. (3:0)
This course covers introduction to software design paradigms, system and software requirements, computer aided software engineering, and software design fundamentals using existing documentation for a proposed system. Relevant topics include in-depth survey of data flow-oriented, object-oriented, data-oriented, and real-time design. Team project involving the implementation of the proposed system using structured

programming, information hiding, and strength and coupling measures is required. Each student will be required to make an oral presentation as part of the team project. Offered: Fall. Prerequisite: IEEN 3330 – Robotics and Automation.

IEEN 4312 - Experimental Design and Analysis

3 sem. hrs. (3:0)
Main coverage: Basic principles of experimental design; Randomization; Completely randomized design; Paired design; Randomized blocks, Latin Squares, Greco-Latin Squares and related designs; Factorial design; Blocking in factorial design; 2k factorial design; Extension of 2k factorials; Blocking and confounding in 2k factorials; Partial confounding; Fractional factorial designs; Blocking in fractional factorials; Nested and split-plot designs; Replicated and un-replicated designs; Regression, ANOVA, and follow-up analysis; Sample size determination; Response surface model. Offered: Fall and Spring

Prerequisites: IEEN 3302 Operations Research and IEEN 3320 Human Factors;

IEEN 4322 - Cognitive Ergonomics

3 sem. hrs. (3:0) This course is concerned with mental processes, such as perception, decision making, memory, reasoning, and response execution, as they affect interactions among humans and other elements of a work system. Relevant topics include skilled performance, attention, distraction, human error, work stress, risk perception, and Kansei engineering as these may relate to human-system design, safety and productivity. Assessment methodologies include hierarchical task analysis, cognitive task analysis, mental workload, human error identification/accident investigation, and situation awareness assessment. Offered: Fall. Prerequisite: IEEN 3320 - Human Factors.

IEEN 4324 - Human Factors and Autonomous Systems

3 sem. hrs. (3:0) This course introduces the survey of human factors and ergonomics with particular reference to human functions in human-machine systems and principles of human factors to demonstrate and apply a broad knowledge of various modern industrial engineering methods and tools associated with designing autonomous systems in manufacturing and other related fields. Applications of engineering design methods to represent, integrate and solve problems, including the ability to recognize problem context and integrate knowledge and skills appropriate sources are provided. Knowledge of basic human capabilities and the ways that these capabilities are taken into account in the design of human-machine systems and work environments. Offered: Fall. Prerequisite: IEEN 3320 - Human Factors.

IEEN 4326 - Airborne Design of Experiments

3 sem. hrs. (3:0) Definitions, concepts, and history, Aviation Human Factors, management, and the organization, Human performance in aviation operations, Human information processing and operational decision-making, Human error and threat management, Threat and Error Management (TEM) in flight operations, air traffic control and cabin operations, Resource management training on the flight deck and in air traffic control, Automation in the workplace, The design of Standard Operating Procedures (SOPs) and checklists. Offered: Fall and Spring. Prerequisite: IEEN 3302 - Operations Research.

IEEN 4330 - Digital Systems Simulation

3 sem. hrs. (2:2) Introduction (definitions and types of simulations), Mechanism of discrete event simulation, Random number/variate generation, Input data analysis (input distribution modeling), Simulation modeling using Arena package, Review of probability and statistics, Simulation output analysis, Monte Carlo simulation, Modeling continuous processes, Verification and validation of simulation models, Read/write simulation data from/to external files. Offered: Fall and Spring. Prerequisite: IEEN 3302 - Operations Research.

IEEN 4332 - Distribution Center Design and Operation

3 sem. hrs. (3:0) Introduction (issues, equipment, processes), layout, order-picking, automation, special topics: crossdocking, warehouse performance. Offered: Fall and Spring. Prerequisite: IEEN 3330 - Robotics and Automation.

IEEN 4334 - Scheduling and Sequencing

3 sem. hrs. (3:0) Introduction and overview, EOQ Models, MRP, job shop scheduling rules & Gantt chart, algorithms for one machine problems, implicit enumerations & dynamic program, branch and bound, heuristics approaches, project Scheduling, parallel Machine Scheduling, relaxation of Assumptions, batch processing, sequence dependence, project presentations. Offered: Fall and Spring. Prerequisite: IEEN 3302 - Operations Research.

IEEN 4342 - Construction Management

3 sem. hrs. (3:0) The course focuses on management techniques to solve the unique problems associated with a construction project. Study of Construction Management functions including Project Management, Cost Management, Time Management, Quality Management, Contract Administration, and Safety Management will be covered.

Emphasis is put on the application of each function throughout the project phases. Offering: Spring. Prerequisites: IEEN 2302 - Engineering Economics and IEEN 3320 - Human Factors.

IEEN 4396 - Directed Independent Study

1-3 sem. hrs. (1-3) Requires a formal proposal of study to be completed in advance of registration, approval of supervising faculty and department chairperson. Offered Fall, Spring, and Summer. Prerequisites: Varies.

Kinesiology

KINE 1101 - Beginning Racquetball

1 sem. hrs. Instruction and practice in the skills, rules, and strategies of racquetball.

KINE 1102 - Swimming

1 sem. hrs. Instruction and practice in the techniques, skills and safety practices for levels of swimming.

KINE 1103 - Badminton

1 sem. hrs. Instruction and practice of badminton skills, rules and strategy.

KINE 1104 - Gymnastics

1 sem. hrs. Skills, techniques, safety practices, rules and scoring criteria for gymnastics.

KINE 1105 - Sailing

1 sem. hrs. Instruction and practice in skills and safety involved in sailing.

KINE 1106 - Weight Training

1 sem. hrs. The study and practice of physiological principles related to training programs for the development of muscular strength and endurance.

KINE 1107 - Karate

1 sem. hrs. Instruction and practice of contemporary techniques of karate.

KINE 1108 - Strength Conditioning for Women

1 sem. hrs. The study and practice of physiological principles relating to training programs for the development of muscular strength and endurance for women.

KINE 1109 - Rhythmic Aerobics

1 sem. hrs. A study of dance movement as it relates to physical fitness development.

KINE 1110 - Individual/Dual/Lifetime Sports

1 sem. hrs. Instruction, participation, and practice in a variety of individual, dual, and lifetime sports.

KINE 1111 - Beginning Golf

1 sem. hrs. The study of techniques and knowledge pertinent to the game of golf.

KINE 1112 - Personal Self Defense

1 sem. hrs. Instruction and practice of contemporary techniques of self protection.

KINE 1113 - Tennis

1 sem. hrs. Instruction and practice of techniques, skills, and strategy involved in tennis.

KINE 1114 - Volleyball

1 sem. hrs. Instruction and practice of techniques, skills and strategy involved in volleyball.

KINE 1115 - Soccer

1 sem. hrs. Instruction and practice of techniques, skills, and strategies involved in soccer.

KINE 1116 - Ranger Leadership Laboratory

1 sem. hrs. Practical leadership and teamwork training in rappelling, rope bridges, weapons firing, map reading and land navigation, water safety, patrolling, and other ranger skills. Includes a weekend field trip where the techniques learned will be applied

in competitive events. Cross listed with MSCI 1172. Prerequisite: approval of Professor of Military Science. May be repeated for credit.

KINE 1117 - Basketball

1 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in basketball.

KINE 1118 - Softball

1 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in softball.

KINE 1119 - Baseball

1 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in baseball.

KINE 1120 - Football

1 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in football.

KINE 1121 - Track and Field

1 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in track and field.

KINE 1122 - Non-traditional Team Sports

1 sem. hrs. Instruction and practice of techniques, skills and instructional strategies involved in non-traditional team sports. Typical topics may include lacrosse, field/floor hockey, ultimate Frisbee, flickerball, cricket and team handball.

KINE 1123 - Beginning Rock Climbing

1 sem. hrs. The study and practice of the technical and educational skills necessary to safely conduct rock climbing and climbing associated activities.

KINE 1124 - Beginning Jazz Dance

1 sem. hrs. An examination of the basic steps (skills), movements, dance combinations and instructional practices that pertain to jazz dance. This course will also include multi-cultural application, history and choreography of jazz dance.

KINE 1130 - Beginning Fencing

1 sem. hrs. Instruction and practice of the skills, techniques, equipment and safety as it pertains to fencing.

KINE 1131 - Yoga

1 sem. hrs. Instruction and practice of Yoga postures, breathing, meditation and relaxation. May be repeated for credit by non-kinesiology majors. Materials fee required.

KINE 1132 - Fitness Walking

1 sem. hrs. Instruction and practice of fitness walking.

KINE 1133 - Tai Chi

1 sem. hrs. Instruction and practice in a short Taijiquan form and exercises. Solo and partner practice. An introduction to Chinese martial arts theory and practice. Introductory Qigong meditation practices for martial applications and health benefits.

KINE 1134 - Beginning Surfing

1 sem. hrs. This course is designed to provide student with the skills and knowledge necessary to safely enjoy surfing activities. Through structured classroom lectures (including videos) and laboratory activities (beach program), the student will be introduced to the history of surfing, proper use of equipment, skill techniques of surfing, and environmental factors and issues specific to this sport.

KINE 1135 - Army Physical Fitness Training

1 sem. hrs. Instruction and practice of the skills, techniques and fitness activities that are germane to typical Army training.

KINE 1136 - Pilates

1 sem. hrs. lab Instruction and practice in the skills, techniques, and principles of Pilates with emphasis on the Classical Pilates matwork.

KINE 1151 - Scuba and Snorkeling

1 sem. hrs. Knowledge and techniques of snorkeling and scuba diving. Instruction will be directed toward obtaining a basic open water diver certification. TCCNS Equivalent: PHED 1151

KINE 1222 - Basic Equestrian Skills

2 sem. hrs. Instruction and practice of skills and abilities involved in basic horsemanship and equitation.

KINE 1320 - Introduction to Athletic Training

3 sem. hrs. This course provides general knowledge of the athletic training profession, epidemiology of athletic injuries, the pre-participation physical exam, strength and conditioning of athletes, environmental concerns, protective equipment, emergency management of athletic injuries and sports nutrition. Materials fee required.

KINE 2101 - Teacher Development Practicum

1 sem. hrs. practicum This course is designed to expose kinesiology majors with an EC-12 specialization to the teaching profession by working with and assisting cooperating physical education instructors who teach activity classes for the Department of Kinesiology. This will include, but is not limited to, assisting with planning lessons, teaching skills/games/activities, and evaluation of knowledge and skills. Prerequisite: KINE 2317.

KINE 2102 - Conditioning Swimming

1 sem. hrs. lab The course addresses the principles and practice of conditioning swimming and other fitness activities in an aquatic environment. Pre-requisite: 800m swim test where student demonstrates competency in the front crawl, back, breast, and butterfly strokes.

KINE 2107 - Intermediate Karate

1 sem. hrs. Instruction and practice in intermediate karate form and exercises. Solo and partner practice. Instruction and practice of contemporary techniques of karate. Prerequisite: KINE 1107 or permission by instructor.

KINE 2113 - Intermediate Tennis

1 sem. hrs. lab Intermediate tennis is designed to provide instruction and practice of techniques, mental skills, and strategy involved in tennis at a level beyond what is taught at the beginning level tennis course (KINE 1113). Pre-requisite: KINE 1113 or instructor approval.

KINE 2134 - Advanced Tai Chi

1 sem. hrs. Instruction and practice in advanced Taijiquan form and exercises. Solo and partner practice. May be repeated for credit by non-kinesiology majors. Prerequisite: KINE 1133 or permission by instructor.

KINE 2135 - Intermediate Surfing

1 sem. hrs. This course is designed to provide students with the skills and knowledge necessary to safely enjoy intermediate surfing activities. Through structured classroom lectures (including videos) and beach laboratories the student will be introduced to: proper use of equipment, surfing history, environmental issues and the 'Goals To Success In Surfing'. Prerequisite: KINE 1134 or instructor-approved demonstration of basic surfing skills.

KINE 2191 - Clinical Experience in Athletic Training I

1 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 1320.

KINE 2192 - Clinical Experience in Athletic Training II

1 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 3318.

KINE 2214 - Coaching of Volleyball

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in volleyball. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2215 - First Aid and Safety

2 sem. hrs. Basic CPR and first aid instruction leading to American Red Cross certification. TCCNS Equivalent: PHED 1206

KINE 2216 - Coaching of Soccer

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in soccer. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2217 - Coaching of Basketball

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in basketball. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2218 - Coaching of Softball

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in softball. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2219 - Coaching of Baseball

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in baseball. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2220 - Coaching of Football

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in football. Additional information will cover skill development strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2221 - Coaching of Track and Field

2 sem. hrs. Instruction and practice of techniques, skills, and instructional strategies involved in track and field. Additional information will cover skill development

strategies, class/group management, risk management, budget, fund raising and public/family relations.

KINE 2225 - Sports Conditioning

2 sem. hrs. This course addresses the principles and practice of sports conditioning from a coaching perspective. Topics will include athletic needs evaluation, exercise programming, and program implementation. Issues regarding resistance exercise, speed, endurance, explosiveness training, and agility will be addressed.

KINE 2227 - Group Fitness Instructor Training Certification

2 sem. hrs. This course is designed to provide theoretical knowledge and practical skills in preparation for a national certification exam in group-fitness instruction. Topics include guidelines for instructing safe, effective, and purposeful exercise, essentials of the instructor-participant relationship, the principles of motivation to encourage adherence in the group fitness setting, effective instructor-to-participant communication techniques, methods for enhancing group leadership, and the group fitness instructor's professional role. A national group fitness instructor certification is offered at the end of the course.

KINE 2255 - Water Safety Instruction

2 sem. hrs. Skills and techniques of aquatic rescues and swimming programs. May be repeated for credit by non-kinesiology majors. Materials fee required.

KINE 2313 - Foundations of Kinesiology

3 sem. hrs. An overview of the field of physical education which includes the history, philosophy, principles, current concepts of physical education and career options. For kinesiology majors this course must be taken prior to any senior level (4000) kinesiology courses. TCCNS Equivalent: PHED 1301

KINE 2316 - Health and Fitness

3 sem. hrs. An overview of relevant health and fitness topics including mental and physical health, nutrition, human sexuality, communicable and non-communicable diseases, use and abuse of drugs/alcohol and safety. This course will include

KINE 2317 - Re-inventing Games

3 sem. hrs. This course is designed to introduce a framework for the development of games, sports, and activities through an inclusive and developmentally appropriate

process of change, challenge, and choice. A wide array of sports, sports-related games and activities are introduced, deconstructed for their current exclusivity and then reconstructed through a framework which seeks to change the existing exclusivity of the rules, to challenge participating students of all cognitive and physical abilities, and then build in a choice component into the activity. This course is recommended prior to enrolling in KINE 3339 and KINE 3341.

KINE 2325 - Physiological Aspects of Kinesiology

3 sem. hrs. An introduction to the fundamental principles of human physiology and their application to kinesiology.

KINE 2326 - Essentials of Professional Fitness Training

3 sem. hrs. This course is designed to provide theoretical knowledge and practical skills in preparation for a national certification exam in personal training. Topics include guidelines for instructing safe, effective, and purposeful exercise, essentials of the client-trainer relationship, conducting health and fitness assessments, and designing and implementing appropriate exercise programming.

KINE 2355 - Lifeguard Training

3 sem. hrs. This course provides instruction in first aid, CPR for professional rescuers, Automated External Defibrillator (AED) training, water safety and rescue skills.

KINE 2357 - Sport Officiating

3 sem. hrs. Designed to provide an understanding of the foundations of officiating for sport, and the effective organization, training, and supervision of officials for sport programs.

KINE 2375 - Nutrition for Human Performance

3 sem. hrs. This course is an introduction to the physiological, anatomical, and psychological aspects of nutrition in relation to human performance and optimal health. Special emphasis is placed on sport and fitness enhancement and achievement of peak training levels, through proper nutrient ingestion.

KINE 3112 - Physiology of Exercise Lab

1 sem. hrs. The required laboratory course with KINE 3312. Demonstration and hands-on learning will introduce students to the scientific basis, techniques, and methods used in

exercise physiology. Lab activities will complement lecture materials from KINE 3312. KINE 3112 must be taken concurrently with KINE 3312.

KINE 3113 - Advanced Tennis

1 sem. hrs. lab Advanced tennis is designed to provide instruction and practice for students with a high level of tennis ability and experience. Pre-requisite: KINE 2113 or instructor approval.

KINE 3214 - Physical Education Activities

2 sem. hrs. Application of principles of physical activities, games and sports.

KINE 3244 - Rhythmic and Dance Activities

2 sem. hrs. Instruction and practice in creative and structured dance as applied to elementary and secondary school programs.

KINE 3291 - Clinical Experience in Athletic Training III

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 3320.

KINE 3292 - Clinical Experience in Athletic Training IV

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 3324.

KINE 3301 - Outdoor Adventure Programs

3 sem. hrs. An introduction to a variety of outdoor adventure activities and basic outdoor skills. In addition to skill acquisition and assessment, this course covers such topics as: history and philosophy of outdoor adventure programs, risk and legal liability and trip planning.

KINE 3312 - Physiology of Exercise

3 sem. hrs. This course is an application of anatomy and physiology that allows for the understanding of the effects of various forms of exercise and the environment on the body systems and performance. Lab activities will complement lecture materials. Prerequisites: KINE 2325 or BIOL 2401 and KINE 1320 or KINE 2313. KINE 3112 must be taken concurrently with KINE 3312.

KINE 3318 - Prevention and Care of Athletic Injuries

3 sem. hrs. Provides the general knowledge and general application of theory, principles, and skills used in the prevention, care, and rehabilitation of athletic injuries.

KINE 3320 - Introduction to Therapeutic Interventions

3 sem. hrs. Provides the student with the general knowledge of current theory and application of various therapeutic interventions used in the treatment of musculoskeletal injuries, including thermal therapy, cryotherapy, manual therapy, and therapeutic exercises. Prerequisite: KINE 3318.

KINE 3322 - Evaluation of Upper Extremity Injuries

3 sem. hrs. Provides the student with general knowledge of evaluation techniques of athletic injuries to the upper extremities including range of motion testing, neurologic, and orthopedic evaluations. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

KINE 3324 - Evaluation of Lower Extremity Injuries

3 sem. hrs. Provides the student with general knowledge of evaluation techniques of athletic injuries to the lower extremities including range of motion testing, neurologic, and orthopedic evaluations. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

KINE 3337 - Sport and Exercise Psychology

3 sem. hrs. This course provides general knowledge of the psychological factors that are associated with participation and performance in sport, exercise, and other types of physical activity with emphasis on motivational techniques, personality dynamics, and mental health serving as focal points.

KINE 3338 - Motor Development/Motor Learning

3 sem. hrs. A study of the fundamental principles related to human motor development and the scientific principles related to motor learning.

KINE 3339 - Elementary Physical Education Programs^

3 sem. hrs. The application of the fundamental principles related to human motor development, physical fitness, locomotor skills, non-locomotor skills, manipulative skills, and rhythmical activities with children at the elementary school level. Recommended pre-requisites: KINE 2317 and KINE 3338. This course is a pre-requisite for EDUC 4605.

KINE 3341 - Secondary Physical Education Programs^

3 sem. hrs. The application of the fundamental principles related to human motor development, physical fitness, sports related activities and dance with children at the secondary school level. Recommended pre-requisites: KINE 2317, KINE 3338, and KINE 3339. This course is a pre-requisite for EDUC 4605.

KINE 4127 - Biomechanics Lab

1 sem. hrs. The required laboratory course with KINE 4327. The demonstration and application of mechanical factors and principles affecting human motion. Qualitative and quantitative analysis of human motion with emphasis on sport and fitness activities. KINE 4127 must be taken concurrently with KINE 4327.

KINE 4291 - Clinical Experience in Athletic Training V

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 3322.

KINE 4292 - Clinical Experience in Athletic Training VI

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 4322.

KINE 4293 - Clinical Experience in Athletic Training VII

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 4326.

KINE 4294 - Clinical Experience in Athletic Training VIII

2 sem. hrs. A field based professional experience to provide the student the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies of the athletic training profession. Prerequisites: Admission to the athletic training program and concurrent enrollment in KINE 4324.

KINE 4310 - Programs in Sports and Physical Fitness

3 sem. hrs. A study of the principles of physical fitness and biomechanics of sports with an emphasis upon student performance in a variety of sport activities. Prerequisite: KINE 2313.

KINE 4311 - Measurement and Evaluation

3 sem. hrs. Use and function of the various tests used in kinesiology together with the purpose, scope and techniques of test construction. Development of statistical techniques necessary for manipulation and interpretation of physical performance data. Prerequisites: KINE 1320 or KINE 2313.

KINE 4322 - Rehabilitation of Athletic Injuries

3 sem. hrs. Rehabilitation for athletic injuries including goniometry, muscle testing, therapeutic exercises, and the use of SOAP notes. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

KINE 4324 - Administration of Athletic Training

3 sem. hrs. Provides the general knowledge and application of athletic training administration including facility design, insurance claims, liability issues, and injury and treatment records.

KINE 4325 - Kinetic Anatomy

3 sem. hrs. An analysis of the skeletal, muscular, and neurological structure and functional aspects of human movement with emphasis on sport and fitness activities. Prerequisites: KINE 2325 or BIOL 2401 and KINE 1320 or KINE 2313.

KINE 4326 - Medical Terminology and Conditions in Sport and Exercise

3 sem. hrs. Provides information about team physician and athletic trainer relationships, physical examinations, emergency equipment, medical terminology, athletic injuries, and

problems related to the team physician. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

KINE 4327 - Biomechanics

3 sem. hrs. An analysis of the mechanical factors and principles influencing human motion with emphasis on sport and fitness activities. Recommended pre-requisite: KINE 4325. Prerequisites: KINE 2325 or BIOL 2401, and KINE 1320 or KINE 2313. KINE 4327 must be taken concurrently with KINE 4127.

KINE 4328 - Sport and Exercise Pharmacology

3 sem. hrs. Provides general knowledge of the classifications, legal concerns, therapeutic uses, actions, side effects, and adverse reactions of major drug groups related to sports activities. Prerequisite: KINE 2325 or KINE 3318 or BIOL 2401.

KINE 4329 - Essentials of Strength and Conditioning

3 sem. hrs. This course is designed to provide a comprehensive overview of strength and conditioning. Emphasis is placed on the exercise sciences (including anatomy, exercise physiology, and biomechanics) and nutrition, exercise technique, program design, organization and administration, and testing and evaluation. Additionally, this course is designed to prepare students for either the nationally accredited Certified Strength and Conditioning Specialist (CSCS) or the NSCA Certified Personal Trainer (CPT) exams. Pre-Req: BIOL 2401, BIOL 2402, KINE 3312; KINE 4327.

KINE 4339 - Special Populations in Kinesiology

3 sem. hrs. A course designed to direct kinesiology educators toward meeting the program needs of the exceptional individual in physical education or kinesiology professional setting. Practical teaching application with exceptional individuals is stressed. Prerequisites: KINE 2313.

KINE 4340 - Exercise Testing and Prescription^

3 sem. hrs. This course provides classroom and hands on experience addressing all facets of exercise testing and prescription ranging from health appraisal, physical fitness testing, principles of exercise prescription, clinical exercise physiology, and special populations. Prerequisites: KINE 2325 or BIOL 2401, KINE 4312, and KINE 1320 or KINE 2313.

KINE 4363 - Sport Programming

3 sem. hrs. Designed to provide initial foundation of basic sport programming skills, methods, and techniques necessary to deliver sports activities within a variety of settings, agencies and/or organizations. Recommended pre-requisite: KINE 2314.

KINE 4390 - Seminar in Exercise and Sport

1-3 sem. hrs. Contemporary issues in Exercise and Sport; topics vary with the individual. May be repeated for credit when topic varies.

KINE 4693 - Professional Field Experience I

6 sem. hrs. This course is a field-based experience (minimum of 200 hours) to provide the student the opportunity to apply knowledge and theory related to the student's specialization in kinesiology (e.g. Exercise Science, Pre-Allied Health Professional, Sport Management). Students must enroll in both KINE 4693 and KINE 4694 at the same time. To enroll students must have departmental approval as well as an overall and kinesiology GPA of 2.75. The field experience is for seniors only and they should enroll during their last semester. Students are allowed to enroll in other coursework but not to exceed the 18-hour university limit.

KINE 4694 - Professional Field Experience II

6 sem. hrs. This course is in conjunction with Professional Field Experience I. A minimum of 200 hours is required for this portion of the internship for a total of 400 hours. Students must enroll in both KINE 4693 and KINE 4694 at the same time. All of the requisites and limitations of KINE 4693 apply to this course as well.

KINE 4696 - Directed Individual Study

1-6 sem. hrs. Investigative study on selected problems by students with particular needs through special permission of the Department Chair and Dean. May be repeated for credit when topic varies.

Management

MGMT 3310 - Principles of Management

3 sem. hrs. Explores fundamental management principles and theories of organizations. Emphasis is placed on the basic functions of management: planning, organizing, directing, and controlling. Topics include the external environment, ethics, international management, decision making, organizational structure, human resource management

and diversity, motivation, group dynamics, and control mechanisms. Prerequisites: BUSI 0011, and Junior standing or above.

MGMT 3315 - Business Communications*

3 sem. hrs. Introduces the fundamentals of effective communication in business and administration. Emphasis is placed on the application of modern techniques to business writing, professional presentations, group communications, verbal communications, nonverbal communications, and listening. Prerequisites: BUSI 0011, and Junior standing or above.

MGMT 3318 - Organizational Behavior*

3 sem. hrs. Introduces factors that influence interactions between individuals and groups in work environments. Topics include individual differences and diversity, motivation, leadership, power and influence, conflict, organizational culture, stress, and teams. Prerequisite: MGMT 3310.

MGMT 3320 - Human Resource Management*

3 sem. hrs. Explores the comprehensive set of managerial activities carried out in organizations to develop and maintain a qualified workforce. Topics include the legal environment, recruitment, selection, training, employee appraisals, compensation systems, and empolyer relations. Prerequisite: MGMT 3310.

MGMT 3350 - Business Ethics and Decision Making

3 sem. hrs. Historical and contemporary views of business as a social institution; focus is on the nature of ethics and the utilization of codes of ethics, decision-making processes, critical thinking, and creative problem solving. Prerequisite: MGMT 3310

MGMT 3355 - Organization Change*

3 sem. hrs. An in-depth study of group and organization-wide interventions designed to improve the group and organization's ability to cope with change and manage continuous improvement. Emphasis is on developing processes to improve group dynamics, organization-wide health and effectiveness, and on a systems approach to diagnosing and solving problems. Prerequisites: MGMT 3310.

MGMT 3360 - Social Entrepreneurship*

3 sem. hrs. Introduces the theory and practice of mission-driven organizations. Emphasis is on understanding unmet social needs and opportunities and creating a viable sustainable social venture. Prerequisite: MGMT 3310

MGMT 3370 - Entrepreneurship, Creativity, & Innovation*

3 sem. hrs. The student will learn the description and analysis of the characteristics that produce creative opportunities and commercially sustainable innovations. This will include learning about the personal and organizational characteristics, business and societal planning tools, and practices of entrepreneurs. Factors inside and outside the entrepreneurial firm that influence creativity and innovation are also considered as they affect successful business decisions. Prerequisite: MGMT 3310, or Junior standing or above and permission of the instructor.

MGMT 4305 - Organization Staffing*

3 sem. hrs. Examines the concepts, methods, and problems encountered in the development, validation, and utilization of employee recruitment, selection, training, and career development. Legal defensibility, and organizational effectiveness of staffing and development will be discussed. Prerequisites: MGMT 3320

MGMT 4315 - Multinational Management*

3 sem. hrs. A study of management processes and their application across different cultural, economic and legal environments. The course focuses on differences among values, beliefs, perceptions, attitudes and behaviors across national and cultural boundaries that affect the employee work and performance. Prerequisites: MGMT 3310

MGMT 4320 - Leadership Development*

3 sem. hrs. A study of traditional and contemporary leadership models, styles, and practices. Focuses on self-assessment and the characteristics of leaders important to effective leadership outcomes. Prerequisites: MGMT 3310

MGMT 4350 - Small and Family Business

3 sem. hrs. Examines the entrepreneurial aspects and the ongoing management of a small and family business enterprises, with a focus on achieving and sustaining competitive advantage. Additional topics include the unique aspects of family business, leadership, decision-making, management, marketing, financial controls and other mission-critical processes. Prerequisite: MGMT 3310.

MGMT 4370 - New Venture Creation

3 sem. hrs. New venture creation teaches students how to analyze the feasibility of a new product, service or innovation within the entrepreneurial organization. Students learn to develop business plans necessary for the creation of start-up enterprise to include specific business practices, finances, and obligations of the firms created and maintained by entrepreneurs. Factors inside and outside the entrepreneurial enterprise are researched and analyzed as they affect successful new venture business decisions. Prerequisites: MGMT 3310 or Junior standing or above and permission of the instructor.

MGMT 4385 - Strategic Human Resource Management

3 sem. hrs. An examination of the issues important to human resource planning. Emphasis is on the processes and activities used to develop human resource objectives, practices, and policies to meet the needs and opportunities of an organization and improve organizational effectiveness. Prerequisites: MGMT 3320

MGMT 4388 - Business Strategy*

3 sem. hrs. Analytical process and methodology for policy-strategy formulation, approached as a multi-level, integrative process. Analysis focused on integration of skills and competencies acquired through the BBA program. Prerequisite: Successful completion of all other courses in the Business Core Requirements.

MGMT 4390 - Current Topics in Management

1-3 sem. hrs. Selected topics for special study related to management functions, processes or issues. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic.

MGMT 4396 - Directed Individual Study*

1-3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Contact your advisor for information.

MGMT 4398 - Internship in Management

3 sem. hrs. Supervised full-time or part-time, off-campus training in business or government organization. Oral and written reports required. Prerequisites: Management major with a GPA of at least 2.75 and completed at least 9 hours of upper division work

in Management. Students must apply to the internship program and be accepted prior to registration. May not be repeated for credit.

Management Information Systems

MISY 2305 - Computer Applications in Business*

3 sem. hrs. Survey of modern business computer hardware, software, and applications. Opportunities to create programs and use existing application software to solve various management information technology-oriented problems. Emphasizes the end-user's perspective, and interactions with management information technology. TCCNS Equivalent: BCIS 1305

MISY 3310 - Management Information Systems Concepts^*

3 sem. hrs. Provides an understanding of the importance of computer-based information in the success of the firm. Illustrates ways in which companies utilize computer systems to strategically compete within certain industries. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support, and management information systems. Prerequisites: BUSI 0011, MISY 2305 and Junior standing or above.

MISY 3320 - Business Data Communication and Networking I

3 sem. hrs. Characteristics of contemporary business data communication components, their configurations, and their impact on management information systems design. Topics include designing, managing, securing, and implementing business data communication networks, and their integration into management information systems. Exercises and assignments use various data communication facilities. Prerequisites: Junior standing or above.

MISY 3330 - Database Management

3 sem. hrs. Concepts and methodology of data base planning, design, development, and management of the computerized data base of a management information system. The emphasis is on logical data base design and a study of hierarchical, network, and relational implementations. Normalization exercises are completed relative to the logical design of relational data bases. Exercises and assignments use a relational DBMS package. Prerequisites: Junior standing or above.

MISY 3340 - Systems Analysis and Design

3 sem. hrs. Develops ability to analyze an existing information system within an organization, to identify information requirements, and to specify the functions of a new information system. Includes cost/benefit analysis of proposed information systems. Exercises and assignments use a Computer Aided Software Engineering (CASE) tool. Prerequisites: Junior standing or above.

MISY 3350 - Business Applications Development

3 sem. hrs. This course provides an understanding of the Visual Basic programming environment in the context of business application design and development. This course will place emphasis on performance characteristics and user interface design considerations. Prerequisites: Junior standing or above.

MISY 3360 - ERP Overview

3 sem. hrs. 3:0 A study of the management of information technology as it is practiced in organizations today. Traditional organizations are moving toward a more interconnected or networked business environment. A major focus is understanding the role and use of complex technology in the support of individual, workgroup, enterprise, inter-enterprise and international computing. This course will utilize a business process management approach through the use of enterprise software. Prerequisite: ONLY Juniors or Post-Baccalaureate

MISY 4310 - Business Data Communications and Networking II

3 sem. hrs. Design, implementation, and operation of client-server network systems for organizational Intranets and Internet presence. Exercises and assignments use selected data communications facilities. Prerequisites: MISY 3320 and Junior standing or above.

MISY 4325 - Business Decision Support Systems and Expert Systems

3 sem. hrs. A survey of decision support systems and expert systems used in business. Topics include artificial intelligence (AI), knowledge engineering, knowledge acquisition, expert system shells, modeling, simulation, and selection of appropriate computer package support. Exercises and assignments use various computer packages such as neural network systems and expert system shells. Prerequisites: Junior standing or above.

MISY 4330 - Website Development for Business

3 sem. hrs. This course provides an understanding of the principles and techniques for client-side web development using HTML and CSS. Text editors and the website

development software will be used to create and maintain websites. This course includes designing to meet web standards, including accessibility, usability, and workflow for web design. Prerequisites: Junior standing or above.

MISY 4340 - Electronic Commerce Management

3 sem. hrs. A broad overview of electronic commerce topics as they relate to various users. General coverage includes electronic commerce history, opportunities, limitations, and risks. Technical discussions include the internet, intranets, extranets, firewalls, security, protocols, servers, and browsers. Prerequisites: Junior standing or above.

MISY 4341 - Management of Healthcare Information Systems

3 sem. hrs.
This course provides an overview of the knowledge and skills required to manage information for organizations related to healthcare. The course specifically focuses on the practice of acquiring, analyzing and protecting digital and traditional medical information vital to providing quality patient care. Some of the topics that are covered include: evolution of health care information systems (HCIS), components and basic HCIS functions, technology infrastructure for healthcare organizations, basic concepts such as electronic health records (HER), health information exchange (HIE), computerized physician order entry (CPOE), clinical decision support systems (CDSS), hospital incident command systems (HICS) and standards such as HIPPA, HL7, and digital imaging and communications in medicine (DICOM). Other topics include strategic information systems planning for healthcare organizations, systems analysis and project management, information security and privacy issues, and the roles of HCIS professionals in health organizations. Course Prerequisites: MISY 3310 or equivalent with 'C' or better.

MISY 4345 - Information Security and Privacy in Healthcare

3 sem. hrs.

This course provides an overview of the knowledge and skills required to manage information privacy and security for organizations related to healthcare. It focuses on best practices for healthcare information security and privacy with detailed coverage of essential topics such as information governance, roles and occupations, risk assessment and management, incident response, patient rights, healthcare responsibilities, cyberattacks and cybersecurity. Topics also include relevant laws and regulations and other aspects of information security and privacy, with emphasis on real-life scenarios in clinical practices and business operations in healthcare. Course Prerequisites: MISY 3310 or equivalent with the grade of "C" or better.

MISY 4350 - Business Intelligence and Analytics

3 sem. hrs. Overview of important concepts of business intelligence, and the use of analytics, technologies, applications and processes used by organizations to gain data-driven insights. These insights and predictions can be used to aid decision-making and performance management across functional areas, including marketing, operations, and finance. Students will learn to extract and manipulate data, and create reports, scorecards and dashboards, including mobile apps. ONLY Juniors or Post-Baccalaureate or Seniors for MISY 4350

MISY 4365 - Data Warehousing and Data Mining for Business Intelligence

3 sem. hrs. 3 In the information age, organizations can and do collect massive amounts of data. Yet organizations are often "data rich" but "information and knowledge poor". This course is designed to prepare business professionals who, by using analytical methods and data mining and data visualization tools will be able to harness the potential of data by extracting business intelligence that can be used to improve decisions and operations at various points in the value chain. Prerequisites: MISY 2305, MISY 3330, ORMS 3310, and Junior standing or above.

MISY 4366 - Data Analytics for Healthcare Management

3 sem. hrs.

The goal of this course is to prepare business professionals to extract business intelligence to improve decisions and operations in organizations, especially in the healthcare industry, at various points in the value chain. Data mining methods covered include multiple linear regression, k-nearest neighbor, classification and regression trees, logistic regression, discriminant analysis, artificial neural networks, association rules, cluster analysis and text mining. Areas in healthcare include healthcare market basket analysis, churn analysis for hospitals and insurance companies, health insurance fraud detection, readmission assessment, personalization of treatment regimen, patient risk management and performance-based payment analysis. Students should have a background in database and statistics. The focus will be less on statistical mathematics and more on the application of data mining methods using software tools. Course Prerequisites:

MISY 2305 Computer Applications for Business, or its equivalent

MISY 3330 Database Management, or its equivalent

ORMS 3310 Data Analysis and Statistics, or its equivalent

MISY 4341 Healthcare Information Systems Management, or its equivalent

MISY 4375 - IT Project Management

3 sem. hrs. 3:0 This course covers issues related to managing projects in organizations. The course focuses on the management of projects and working as a team. Students are expected to draw on materials from other management information system courses, especially the System Analysis and Design, and Database Management courses. Prerequisites: MISY 3330 (Database Managment)

MISY 4390 - Current Topics in Management Information Systems

1-3 sem. hrs. Selected topics for special study related to management information systems. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

MISY 4396 - Directed Individual Study

1-3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

MISY 4398 - Internship in Management Information Systems

1-3 sem. hrs. Supervised practical experience in business computer systems. Prerequisites: MIS major, Junior standing or above, and others depending on selected internship. Students must be accepted prior to registration. May not be repeated for credit.

Marketing

MKTG 3310 - Principles of Marketing*

3 sem. hrs. The initial course in Marketing. Description and analysis of the flow of goods, services and ideas to consumers and industrial users. Factors outside the firm are also considered as they affect marketing decisions. Prerequisite: BUSI 0011 and Junior standing or above.

MKTG 3311 - Professional Selling: Concepts and Practices*

3 sem. hrs. An introduction to professional selling as a marketing tool. Emphasis is placed on the theory and application of the professional selling process. Prerequisite: Junior standing or above.

MKTG 3315 - Advertising and Promotional Strategy*

3 sem. hrs. The student will learn about the development and implementation of a coordinated and integrated advertising and promotions strategy. Emphasis is placed on the interrelationships among advertising, sales management, and sales promotion activities.
Prerequisites: MKTG 3310 and Junior standing or above.

MKTG 3320 - Basic Advertising

3 sem. hrs. Advertising concepts and a critical analysis of commercial advertising practices. Students apply advertising concepts in projects such as case studies, campaign evaluations, and simulation exercises. Prerequisite: Junior standing or above.

MKTG 3325 - Entrepreneurial Marketing*

3 sem. hrs. Entrepreneurial marketing provides entrepreneurs and small business owners with the knowledge needed to successfully perform marketing activities (primarily promotion) on a very low budget. Students will learn the utilization of techniques and the analysis of market characteristics that impact the small entrepreneurial organization, its products and services. Additionally, students will learn how to develop specific yet flexible marketing plans and activities, and the effective management of practices, finances, and obligations associated with the marketing of smaller entrepreneurial firms. Factors inside and outside the firm are researched and analyzed as they affect successful small business marketing decisions. Prerequisites: Junior standing or above and/or permission of the instructor for non-business majors.

MKTG 3330 - Consumer Behavior*

3 sem. hrs. An examination of the psychological and social influences that affect consumer decision making. Emphasizes the development of marketing programs designed with behavioral considerations in mind. Prerequisites: MKTG 3310 and Junior standing or above.

MKTG 3333 - Digital Marketing*

3 sem. hrs. This course introduces students to the theories, strategies, tools, and techniques of effective online marketing. The course emphasizes the essential concepts,

methods, technologies, and decision making criteria for business-to-business and business-to-consumer Internet marketing. The broad concepts of ethics, social responsibilities, sustainability, and globalization are integrated through the course. Topics include online marketing research, business intelligence, Web site design, and Internet marketing strategy. Prerequisites: Junior status or permission of the instructor.

MKTG 3340 - Retail Management

3 sem. hrs. A managerial approach to retailing. Topics such as trade area evaluation, buying, layout, pricing, cost and expense analysis are considered. Prerequisites: MKTG 3310 and Junior standing or above.

MKTG 3345 - Sales Management

3 sem. hrs. An exploration of the problems and practices of sales and sales management. Organizational structure and development of programs to assure a competent and effective sales force are stressed. Prerequisites: MKTG 3310 and Junior standing or above.

MKTG 4310 - Distribution Systems in Marketing

3 sem. hrs. An analysis of the development of integrated distribution systems. Topics include retail and wholesale institutions, channel conflict and cooperation, channel control, franchising and emerging developments in distribution channels. Prerequisites: MKTG 3310 and Junior standing or above.

MKTG 4320 - Marketing Research and Analytics*

3 sem. hrs. The study of research in marketing with emphasis on the collection and interpretation of data and its application to the solution of marketing problems. Prerequisites: ORMS 3310, MKTG 3310, 6 hours of advanced marketing, and Junior standing or above.

MKTG 4340 - International Marketing

3 sem. hrs. A study of the economic, social and cultural environment of international marketing. The course focuses on marketing decision making in this environment. Prerequisites: MKTG 3310 and Junior standing or above, or permission of instructor.

MKTG 4350 - Marketing Strategy*

3 sem. hrs. The study and application of the strategic marketing planning process to realistic business situations. Topics include: strategies for growth and competitive advantage; market segmentation, targeting and positioning; marketing mix strategies and tactics; customer satisfaction and relationship building; and evaluation and control of marketing strategies. Attention to ethical considerations in marketing and a triple bottom line (TBL) evaluation of marketing outcomes. Prerequisites: MKTG 3310, nine additional hours of upper-division marketing, and Senior standing.

MKTG 4360 - Social Media Marketing*

3 sem. hrs. A comprehensive study of Social Marketing strategy and implementation. The course explores the tools, techniques, and strategic logic used in the development and implementation of social media marketing strategy. The course also describes and defines the logic models used for specific plans and programs that affect and are affected by the technology and competitive environments. Prerequisites: MKTG 3310, and Senior standing.

MKTG 4390 - Special Topics in Marketing

1-3 sem. hrs. Selected topics for special study related to marketing functions, processes, or issues. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

MKTG 4396 - Directed Individual Study

1-3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

MKTG 4398 - Internship in Marketing

3 sem. hrs. Supervised full-time or part-time, off-campus training in business or government organization. Oral and written reports required. Prerequisites: marketing major, and Junior standing or above. Students must apply to program and be accepted prior to registration. May not be repeated for credit.

Mathematics

MATH 0099 - Math Non-Course Based Development

0 sem. hrs. (0:0) Preparation workshop to help students achieve College Readiness in mathematics under the Texas Success Initiative. Topics include five general areas:

fundamental mathematics, algebra, geometry, statistics, and problem solving. Not counted toward graduation or semester enrollment load.

MATH 0200 - Brief Developmental Mathematics

1-2 sem. hrs. (1-2:0)

Topics as in MATH 0300. For students who have completed most topics in MATH 0300. Requires permission of MATH department. (Not counted toward graduation) Fall, Spring, Maymester, Summer.

MATH 0214 - Brief Developmental Mathematics-Algebra

2 sem. hrs. (0:2) This course is co-requisite course supporting for MATH 1314. Support will focus on essential skills required for success in College Algebra (Math 1314). Supporting topics include review of intermediate algebra, polynomial equations, graphing techniques, and applications. Course provides the necessary academic support for TSI liable students concurrently enrolled in MATH 1314 as the co-requisite with MATH 0214. Students who register for MATH 0214 must co-register in MATH 1314. Math 0214 is not counted toward graduation. Fall, Spring, Summer.

MATH 0224 - Brief Developmental Mathematics-Business Mathematics

2 sem. hrs. (0:2) This course is the co-requisite course supporting for MATH 1324. Support will focus on essential skills required for success in Business Math (Math 1324). Supporting topics include the use of calculators and technology. Topics focus on basic review of mathematical skills, elementary algebra, mathematical and logical reasoning, probability, and financial management, while providing the necessary academic support for TSI liable students concurrently enrolled in MATH 1324 as the co-requisite with MATH 0224. Students who register for MATH 0224 must co-register in MATH 1324. Math 0224 is not counted toward graduation. Fall, Spring, Summer.

MATH 0232 - Brief Developmental Mathematics-Contemporary Mathematics

2 sem. hrs. (0:2) This course is co-requisite course supporting for MATH 1332. Support will focus on essential skills required for success in Contemporary Mathematics (Math 1332). Supporting topics include a basic review of mathematical skills, elementary algebra, mathematical and logical reasoning, probability, and descriptive statistics, while providing the necessary academic support for TSI liable students concurrently enrolled in MATH 1332 as the co-requisite with MATH 0232. Students who register for MATH 0232 must co-register in MATH 1332. Math 0232 is not counted toward graduation. Fall, Spring, Summer.

MATH 0242 - Brief Developmental Mathematics-Statistics

2 sem. hrs. (0:2) This course is co-requisite course supporting for MATH 1442. Support will focus on essential skills required for success in Statistics for Life (Math 1442). Supporting topics include the use of calculators and technology. Topics focus on descriptive and inferential statistics, probabilities including notation, while providing the necessary academic support for TSI liable students concurrently enrolled in MATH 1442 as the co-requisite with MATH 0242. Students who register for MATH 0242 must co-register in MATH 1442. Math 0242 is not counted toward graduation. Fall, Spring, Summer.

MATH 0300 - Developmental Mathematics

3 sem. hrs. (3:0) Topics include number concepts, computation, elementary algebra, geometry, and mathematical reasoning. Also, linear equations and inequalities, rational expressions, exponents and radicals, quadratics and word problems. May be repeated for credit as needed to complete mastery of all topics. (Not counted toward graduation.) Fall, Spring, Summer.

MATH 0310 - Development Mathematics-Algebra

3 sem. hrs. (2:2) 3 sem. hrs. (2:2) Topics include number concepts, computation, elementary algebra, and geometry. Also, linear equations and inequalities, rational expressions, exponents and radicals, quadratics and word problems. May be repeated for credit as needed to complete mastery of all topics. (Not counted toward graduation.) Fall, Spring, Summer.

MATH 0398 - Introduction to Algebra

3 sem. hrs. (3:0) Number concepts, computation, elementary algebra, geometry, and mathematical reasoning. (Not counted toward graduation.) Fall, Spring, Summer.

MATH 0399 - Intermediate Algebra

3 sem. hrs. (3:0) Topics include linear equations and inequalities, rational expressions, exponents and radicals, quadratics and word problems. Prerequisite: MATH 0398 or placement into MATH 0399. Fall, Spring, Summer. Not counted toward graduation.

MATH 1314 - College Algebra

3 sem. hrs. (3:0) Quadratic equations, inequalities, graphs, logarithms and exponentials, theory of polynomial equations, systems of equations. Prerequisite: TSI College

Readiness in mathematics or MATH 0300 or placement into MATH 1314. Not for Colleges of Liberal Arts or Nursing and Health Sciences; consult advisor for exceptions and approval. Fall, Spring, Summer. TCCNS Equivalent: MATH 1314 Counts as the mathematics component of the University Core Curriculum.

MATH 1316 - Trigonometry

3 sem. hrs. (3:0) Trigonometric functions, identities, equations involving trigonometric functions, solutions of right and oblique triangles. Prerequisite: MATH 1314 or placement beyond MATH 1314. Fall, Spring. TCCNS Equivalent: MATH 1316

MATH 1324 - Mathematics for Business and Social Sciences

3 sem. hrs. (3:0) Students will learn how the properties and language of mathematics can be used in business and real-world problem solving and understand the techniques and applications of finance problems, basic matrix operation, basic counting principles, and probability analysis in modeling real-world scenarios. TCCNS Equivalent: MATH 1324 Counts as the mathematics component of the University Core Curriculum.

MATH 1325 - Calculus For Business & Social Sciences

3 sem. hrs. (3:0) Students will develop and combine the concepts in and relationships between Mathematics and Business from the fundamentals of calculus and optimization in all Business fields. Students are expected to learn the materials algebraically with technology. Students will combine the concepts of limits, continuation, differentiation and integration techniques to solve problems in business, economics, and social sciences. Prerequisites: Both MATH 1324 and either MATH 1314 or placement beyond MATH 1314. Fall, Spring, Summer. TCCNS Equivalent: MATH 1325 Counts as the mathematics component of the University Core Curriculum.

MATH 1332 - Contemporary Mathematics

3 sem. hrs. (3:0) This course serves as a terminal course and supplies a brief overview of several topics in mathematics. Topics may include introductory treatments of sets, logic, number systems, number theory, relations, functions, probability and statistics. Appropriate applications are included. This course emphasizes using critical thinking to make decisions based on information. Prerequisite: College Ready in Mathematics. Fall, Spring, Summer. TCCNS Equivalent: MATH 1332 Counts as the mathematics component of the University Core Curriculum.

MATH 1390 - Introduction to Mathematical Topics

1-3 sem. hrs. (3:0) A course to introduce students to mathematical topics in a formal setting. The course may support problem solving, or systematic investigations of topics outside the current mathematical catalog. May not be substituted for regularly scheduled offerings. Prerequisite: Permission of the Department Chair. May be repeated for credit.

MATH 1442 - Statistics for Life*^

4 sem. hrs. (3:2) An introduction to statistical concepts and methods used in all disciplines to enhance decision making based on data analysis, including: basic experimental design models, measurement and data collection through sampling; display and summary of information, and assessment of relationship through descriptive techniques; probability concepts leading to estimation and hypothesis testing of means, variance and proportions, regression analysis, one-factor ANOVA and chi-square test of independence; and applications through case studies. The laboratory component of the course offers applications of the theory presented during the classroom sessions. Prerequisite: TSI College Ready in Mathematics or MATH 0300. Fall, Spring, Summer. TCCNS Equivalent: MATH 1442 Counts as the mathematics component of the University Core Curriculum.

MATH 2305 - Discrete Mathematics I

3 sem. hrs. (3:0) An introduction to topics in Discrete Mathematics with an emphasis on applications in Mathematics and Computer Science. Topics include formal logic, graphs, trees and related algorithms, and combinatorics and discrete probability. Prerequisite: MATH 2413. Fall, Spring, Summer. TCCNS Equivalent: MATH 2305

MATH 2312 - Precalculus

3 sem. hrs. (3:0) A more rapid treatment of the material in MATH 1314 and MATH 1316, this course is designed for students who wish a review of the above material, or who are very well prepared. Functions, graphs, trigonometry, and analytic geometry. Prerequisite: MATH 1314 or placement into MATH 2312. Fall, Spring, Summer. TCCNS Equivalent: MATH 2312

MATH 2413 - Calculus I

4 sem. hrs. (3:2) Limits, continuity, derivatives, applications of the derivative, and an introduction to integrals. Contains a laboratory component. Prerequisite: A grade of C or better in MATH 1316 or MATH 2312, or placement into MATH 2413. Fall, Spring, Summer. TCCNS Equivalent: MATH 2413 Counts as the mathematics component of the University Core Curriculum.

MATH 2414 - Calculus II

4 sem. hrs. (3:2) Techniques of integration, applications of integrals, sequences, series, Taylor polynomials and series. Parametric equations. Contains a laboratory component. Prerequisite: A grade of C or better in MATH 2413. Fall, Spring, Summer. TCCNS Equivalent: MATH 2414

MATH 2415 - Calculus III

4 sem. hrs. (3:2) Vectors and space curves, partial derivatives, multiple integrals, special coordinate systems, line and surface integrals, Green's, Stokes', and the Divergence Theorems. Contains a laboratory component. Prerequisite: A grade of C or better in MATH 2414. Fall, Spring, Summer. TCCNS Equivalent: MATH 2415

MATH 3300 - Geospatial Mathematical Techniques

3 sem. hrs. (3:0) Characteristics of geographic/spatial information; overview of relevant sections of numbers, algebra and geometry, plane and spherical trigonometry, matrices, determinants and vectors, curves and surfaces, integral and differential calculus, partial derivatives, with an emphasis on geospatial applications. Concepts of geospatial coordinate systems and geospatial coordinate transformations; overview of spatial statistics and best-fit solutions with geospatial applications. Students may not receive credit for both MATH 3300 and GISC 3300. Prerequisite: MATH 2413 and MATH 2414

MATH 3301 - Introduction to Complex Analysis

3 sem. hrs. This course introduces functions of a complex variable and their applications. Contents include differentiation and integration; zeros, poles and residues; conformal mappings. Prerequisites: MATH 2415 or (MATH 2414 and MATH 3314). Fall of odd years.

MATH 3310 - Mathematical Analysis for Mechanical Engineering

3 sem. hrs. (3:0) Applications of fundamentals of linear algebra, vector analysis, numerical methods, computer programming and probability and statistics into mechanical engineering. May not count towards the MATH major. Students may not receive credit for both MATH 3310 and MEEN 3310. Prerequisite: MATH 3315.

MATH 3311 - Linear Algebra

3 sem. hrs. (3:0) Fundamentals of linear algebra and matrix theory. Topics include vectors, matrix operations, linear transformations, fundamental properties of vector

spaces, systems of linear equations, eigenvalues and eigenvectors. Applications. Prerequisite: A grade of C or better in MATH 2413. Fall, Spring, Summer.

MATH 3312 - College Geometry

3 sem. hrs. (2:2) A careful study of the foundations of Euclidean geometry by synthetic methods with an introduction to non-Euclidean geometries. An introduction to transformational geometry. Prerequisite: MATH 2413 - Calculus I and junior standing; MATH 3311 - Linear Algebra recommended. Fall, Summer.

MATH 3313 - Foundations of Number Theory

3 sem. hrs. (3:0) This course assists a student's transition to advanced mathematics. Fundamentals of logic and proof are reviewed and applied to topics from elementary number theory. Prerequisites: MATH 2414 - Calculus II.

MATH 3314 - Foundations of Real Numbers

3 sem. hrs. (3:0) This course assists a student's transition to advanced mathematics. Fundamentals of logic and proof are reviewed and applied to development of the real number line. Prerequisites: MATH 2414 Calculus II.

MATH 3315 - Differential Equations

3 sem. hrs. (3:0) An introduction to both theoretical and applied aspects of ordinary differential equations. Topics include: first order equations, linear second order equations, elementary numerical methods, and the Laplace transform. Prerequisites: A grade of C or better in MATH 2414. Fall, Spring and Summer.

MATH 3342 - Applied Probability and Statistics*^

3 sem. hrs. (3:0) A calculus based introduction to probability and statistics. Emphasis will be on development of statistical thinking and working with data. Topics include probability theory, descriptive statistics, common distributions, and statistical inference. Prerequisite: MATH 2413 - Calculus I. Fall, Spring. MATH 3342 - Applied Probability and Statistics*^ and MATH 3345 - Statistical Modeling and Data Analysis cannot both be counted for credit.

MATH 3345 - Statistical Modeling and Data Analysis

3 sem. hrs. (3:0) An introduction to probability/statistical modeling and data analysis techniques to investigate data. Topics include: exploratory data analysis, probability

models and simulation, sampling distributions, statistical inference. Applications to real world problems. Students will be expected to present and justify results orally and in writing. Prerequisities: MATH 2413 Calculus I and an introductory programming course (COSC 1330 - Programming for Scientists, Engineers, and Mathematicians, COSC 1435 Introduction to Problem Solving with Computers I, or equivalent).

MATH 3347 - Introduction to Probability

3 sem. hrs. This is an introduction to probability. In the course, key fundamental concepts of probability, random variables and their distributions, expectations, and conditional probabilities will be covered. Topics include counting rules, combinatorial analysis, sample spaces, axioms of probability, conditional probability and independence, discrete and continuous random variables, jointly distributed random variables, characteristics of random variables, law of large numbers and central limit theorem, random processes, Markov chains, Markov chain-Monte Carlo, Poisson Process and Entropy. Prerequisite: MATH 2415 Calculus III or equivalent.

MATH 3385 - Linear Optimization and Decisions

3 sem. hrs. (3:0) This course introduces the linear programming and optimization problems arising in many applications. Contents include linear programming models with solutions, the simplex method, duality theory and its use for management decision making, dual simplex method and sensitivity analysis. Prerequisite: MATH 3311 and MATH 2413. Fall of even years.

MATH 3390 - Problem Solving in Mathematics

1-3 sem. hrs. (3:0) A problem solving course for students who want to participate in math problem solving competitions, train for the actuarial or other professional examinations, work on research aimed at conference presentations, or perform research projects at the junior level that are not at the level of directed independent study material. Prerequisites: A grade of C or better in MATH 2414 and permission of the Department Chair. May not be substituted for regularly scheduled offerings.

MATH 4185 - Senior Mathematics Seminar

1 sem. hrs. This course introduces a weekly mathematics seminar. Students will generate a viable project for the capstone course. Completion of at least 75 hours towards a Mathematics major. Fall.

MATH 4285 - Mathematics Major Capstone

2 sem. hrs. Development of projects as proposed in MATH 4185, as well as mathematics communication skills. Students will present their projects, and take a national level assessment. Prerequisites: MATH 4185. Spring.

MATH 4301 - Introduction to Analysis

3 sem. hrs. (3:0) An advanced treatment of the foundations of calculus stressing rigorous proofs of theorems. Topics include: elements of propositional and predicate logic, topology of the real numbers, sequences, limits, the derivative, and the Riemann integral. Prerequisites: MATH 2415 and MATH 3314. Fall.

MATH 4306 - Modern Algebra

3 sem. hrs. (3:0) Fundamentals of set operations, maps and relations, groups, rings and field theory. Topics include permutation groups, cosets, homomorphisms and isomorphisms, direct product of groups and rings, integral domains field of quotients, fundamental properties of integers, the ring of integers modulo n, and rings of polynomials. Applications. Prerequisites: MATH 3311 and MATH 3313. Spring.

MATH 4312 - Differential Geometry

3 sem. hrs. (3:0) Differential forms on R1, R2, R3, and Rn; Integration and differentiation of differential forms; Stokes' Theorem; manifolds; Gaussian curvature and the Gauss-Bonnet Theorem. Prerequisite: MATH 2415.

MATH 4315 - Partial Differential Equations

3 sem. hrs. (3:0) An introduction to partial differential equations emphasizing the wave, diffusion and potential (Laplace) equations. A focus on understanding the physical meaning and mathematical properties of solutions of partial differential equations. Methods include fundamental solutions and transform methods for problems on the line, and separation of variables using orthogonal series for problems in regions with boundary. Additional topics include higher dimensional problems and special topics like Harmonic functions, the maximum principle, Green's functions etc. Prerequisites: MATH 3315 and MATH 2415 . Offered Spring of even years.

MATH 4321 - Applied Regression Analysis

3 sem. hrs. (2:2) Introduction to the formulation of linear models and the estimation of the parameters of such models, with primary emphasis on least squares. Application of multiple regression and curve fitting and the design of experiments for fitting regression

models. Prerequisites: MATH 1342 or MATH 2342 or the equivalent, or MATH 1470. Offered on sufficient demand.

MATH 4328 - Discrete Mathematics II

3 sem. hrs. (3:0) A continued study of topics from Discrete Mathematics I with additional topics from discrete mathematics that have strong application to the field of computer science. Additional topics include: recurrence relations, formal languages, and finite-state machines. Prerequisites: MATH 2305, COSC 2437. Spring.

MATH 4342 - Introduction to Mathematical Statistics

3 sem. hrs. (3:0) This is a first course in mathematical statistics, topics include: moment-generating functions, functions of random variables, sampling distributions, methods of estimation including Bayesian estimation, characteristics of estimators, interval estimation, hypothesis testing, Neyman-Pearson Lemma, likelihood ratio test, tests involving means and variances, regression and correlation, multiple linear regression, introduction to ANOVA, non-parametric tests. MATH 2415, MATH 3347, MATH 3311, and (MATH 3342 or MATH 3345)

MATH 4385 - Applied Modeling

3 sem. hrs. (3:0) Capstone course for mathematics majors. The construction of mathematical models from areas such as economics, refining, biology and mariculture, etc. Where possible, local phenomena will be modeled with the assistance of outside consultants. Prerequisites: MATH 3315 and MATH 3342 or MATH 3345, and completion of at least 90 hours. Spring.

MATH 4390 - Selected Topics

3 sem. hrs. (3:0) Offered on sufficient demand. Prerequisites vary.

MATH 4690 - Contracted Experience in Mathematics

1-6 sem. hrs. Individual contract agreement involving student, faculty, and cooperating agency to gain practical experience in research or industrial setting. May only count as an Open Elective. Prerequisite: Permission of the department.

MATH 4696 - Directed Independent Study

1-6 sem. hrs. (3:0) See college description. Prerequisite: Permission of the instructor. May not be substituted for regularly scheduled offerings.

Mechanical Engineering

MEEN 3230 - Solid Mechanics Laboratory

2 sem. hrs. (0:4) Experimental principles from Strength of Materials, and experiments and computer-based analysis of machine elements and structures for Strength of Material and Solid Mechanics. Prerequisite / Corequisite: MEEN 3330 - Solid Mechanics for Mechanical Engineering. Offered in Fall and Spring.

MEEN 3310 - Engineering Analysis for Mechanical Engineering

3 sem. hrs. (3:0) Applications of fundamentals of linear algebra, vector analysis, numerical methods, computer programming, and probability and statistics for mechanical engineering. (Cross-listed with MATH 3310 - Mathematical Analysis for Mechanical Engineering) Prerequisite: MATH 3315 - Differential Equations .

MEEN 3330 - Solid Mechanics for Mechanical Engineering

3 sem. hrs. (3:0) Stress analysis of deformable bodies and mechanical elements; stress transformation; combined loading; failure modes; material failure theories; fracture and fatigue; deflections and instabilities; thick cylinders; curved beams; design of structural/mechanical members; design processes for shafts, bearings, springs, fasteners, and mechanical joints. Prerequisites: ENGR 3320 - Strength of Materials. Offered: Fall and Spring

MEEN 3335 - Introduction to Unmanned Aircraft Systems

3 sem. hrs. (3:0) Overview of unmanned aerial systems: history, platforms, operations, command and control, sensor systems, payloads, regulations, policy. Current developments in unmanned aerial systems. Prerequisite: junior-level standing in MEEN, MCET, EEEN, COSC, or GISC, or consent of instructor. Offered: Fall

MEEN 3340 - Solid Modeling and Finite Elements

3 sem. hrs. (2:3) Use of computer aided design and solid modeling tools in engineering design, and analysis, and manufacturing including: solid modeling, stress, flow, and heat transfer analysis using finite element methods. Prerequisite: MEEN 3310 - Engineering Analysis for Mechanical Engineering and ENGR 3320 - Strength of Materials. Offered: Spring

MEEN 3345 - Heat Transfer

3 sem. hrs. (3:0) Steady and unsteady conduction in one- and two-dimensions; forced convection, internal and external flows; heat exchangers; introduction to radiation; elements of thermal system design. Prerequisites: ENGR 3316 - Thermodynamics and ENGR 3315 - Fluid Mechanics. Offered: Fall and Spring.

MEEN 4325 - Energy Conversion

3 sem. hrs. (2:3) Natural resources: fuels, solar, wind, geothermal, wave, and ocean thermal; thermodynamics of power cycles and processes: Rankine, Brayton, gas turbine, IC engines, fuel cell; nuclear power; direct energy conversion: photovoltaic, thermoelectric, thermionic, magnetohydrodynamics; non-reactive processes: wind, wave/tidal, ocean thermal energy, solar thermal; concept of life cycle assessments of carbon foot print. Student teamwork of a class term paper is expected. Prerequisite: ENGR 3316 - Thermodynamics. Offered: As needed.

MEEN 4330 - Introduction to Plasma Engineering and Applications

3 sem. hrs. 2:2

Physical, electrical, chemical properties of plasmas; differences in properties of thermal and non-thermal plasmas, direct and alternating current plasma sources, inductive and capacitive coupled plasma sources, diagnostics and applications of plasmas. Prerequisites: ENGR 3322 - Materials Science , and ENGR 2460 - Circuit Analysis or PHYS 2426 - University Physics II . Offered: As needed.

MEEN 4335 - Introduction to Aircraft Aerodynamics and Performance

3 sem. hrs. 3:0 Forces on aircraft; standard atmosphere; steady-state cruise, climb, and turn performance; performance optimization; introduction to aircraft longitudinal stability. Prerequisites: ENGR 2326 ENGR 2326 - Dynamics and COSC 1330 - Programming for Scientists, Engineers, and Mathematicians. Offered Fall.

MEEN 4336 - Introduction to UAS for Agricultural Applications

3 sem. hrs. (3:0)
Provides the foundations to acquire remote sensing data using Unmanned Aircraft Systems (UAS) and to interpret, process, and apply remotely sensed data for agricultural applications. Principles of remote sensing, digital image processing, and geospatial analysis will be covered. Emphasis will be on the use of UAS remote sensing technology for various disciplines in agricultural sciences including plant breeding, plant physiology, crop scouting, pest management and entomology. Offered Spring. Prerequisite: MEEN 3335 Introduction to Unmanned Aircraft Systems

MEEN 4345 - Sensors and Systems^

3 sem. hrs. 3:0 This course covers sensors and sensing systems where sensing modalities, analysis of sensed data, data transmission and reception are discussed. Filtering and estimation in sensing systems are considered. The course covers sensors at component level to develop subsystems and more complex sensing systems that monitor physical phenomena in laboratory or marine/terrestrial environments. Other topics include multidimensional signal and image processing, object tracking, multisensory data fusion, applications in environmental monitoring, remote sensing and surveillance. Prerequisites: MATH 2414 - Calculus II, PHYS 2426 - University Physics II and ENGR 2460 - Circuit Analysis. Offered: As needed.

MEEN 4350 - Controls, Automation and Robotics

3 sem. hrs. (2:3) Automation in a manufacturing and assembly setting for ocean and marine environments, material handling systems, remote guided vehicles, automated storage and retrieval systems, computer numerical machine tools, robotics. Prerequisite: MATH 3315 - Differential Equations, ENGR 2326 - Dynamics and ENGR 2460 - Circuit Analysis.

MEEN 4351 - Dynamical Systems Analysis and Modeling

3 sem. hrs. (3:0) Modeling and analysis of systems that have a time-based response. Transient as well as steady state solutions for SDOF and MDOF systems and computational solutions including time response, Bode plots, phase plots, and other plots relevant to the system. Linear and non-linear modeling of systems will be studied. Modeling of mechanical systems (vibrations), electrical circuits, and thermal/fluid systems will be covered. Prerequisites: COSC 1330 Programming for Scientists, Engineers, and Mathematicians, ENGR 2460 Circuit Analysis, MEEN 3345 Heat Transfer. Offered Fall and Spring.

MEEN 4355 - Marine Fabrication

3 sem. hrs. (2:3) Advanced topics in manufacturing and fabrication related to ships and offshore platforms and construction. Prerequisite: ENGR 3350 - Manufacturing Processes . Offered: As needed.

MEEN 4360 - Thermal Systems Design

3 sem. hrs. (3:0) Analysis, management and cost, optimal design, and computer simulation of thermal systems and components; Applications in fluid flow and heat

transfer, pumps, turbines and heat exchangers. Selected course topics are assigned as projects. Prerequisite: MEEN 3345 - Heat Transfer. Offered: As needed.

MEEN 4365 - Mechanical Systems Design

3 sem. hrs. (3:0) Analysis, management and cost, optimal design, and computer simulation of mechanical systems and components; machine elements, and stress analysis. Selected course topics are assigned as projects. Prerequisites: MEEN 3330 - Solid Mechanics for Mechanical Engineering and ENGR 3350 - Manufacturing Processes.

MEEN 4375 - Fuel Cells

3 sem. hrs. 3:0
Students will acquire an understanding of thermodynamics, transport phenomena and reaction fundamentals that are required to understand the processes and phenomena that pose limits on fuel cell performance. Prerequisites: ENGR 3316 - Thermodynamics, MEEN 3345 - Heat Transfer and CHEM 1411 - General Chemistry I*. Offered: As needed.

MEEN 4380 - Renewable Energy

3 sem. hrs. (2:2) Renewable and alternative energy sources and fuels; modern energy conversion devices, such as offshore wind farms, marine current turbines, fuel cells, photovoltaic cells, and micro-power turbines. Cost and environmental analysis of renewable sources. Installation, design characteristics, operational performance, and maintenance of motors, turbines, pumps and compressors. Introduction to global energy concerns; fossil and nuclear fuels; energy consumption analysis; energy management and conservation techniques. Prerequisite: ENGR 3316 - Thermodynamics, ENGR 2460 - Circuit Analysis and MEEN 4325 - Energy Conversion. Offered: As needed.

MEEN 4385 - Offshore Energy Management

3 sem. hrs. (3:0) Topics related to the design and energy management of ships and offshore platforms will be covered. Such topics may include oil and gas exploration, wind and marine energy systems, and environmental protection. Prerequisite: MEEN 3345 - Heat Transfer. Offered: As needed.

MEEN 4390 - Introduction to Computational Fluid Dynamics

3 sem. hrs. (2:3) Introduction to numerical, computational, modeling and simulation of thermo-fluid systems. Applications related to ships and offshore platforms and structures will be presented. Prerequisite: MEEN 3345 - Heat Transfer. Offered: As needed.

MEEN 4395 - Offshore Water Exploration and Desalination Systems

3 sem. hrs. (2:3) Advanced and future applications of sea floor mapping, under-water acoustics and GIS for fresh water exploration and mining. Renewable energy driven coastal, near-shore, and offshore desalination systems. Prerequisite: ENGR - 2316 - Thermodynamics. Offered: As needed.

MEEN 4396 - Directed Independent Study

1-3 sem. hrs. Requires a formal proposal of study to be completed in advance of registration, approval of supervising faculty and chairperson. Prerequisites: Varies. Offered: As needed.

MEEN 4420 - Engineering Lab Measurements

4 sem. hrs. (2:4) Principles of physical measurements; standards, calibration, error estimation; static and dynamic performance of measuring systems; laboratory experience, experiment planning, report writing. The purpose of this course is for students to gain proficiency in designing, assembling, and operating an experiment; and analyzing and presenting experimental results. This encompasses skills such as an understanding control and data acquisition electronics, operation and limitation of modern sensors, calibration and error analysis, assessing applicability of theory and the impact of secondary experimental variables, and writing and presenting reports and analysis. Prerequisite: ENGR 2460 - Circuit Analysis (or equivalent) and senior standing. Offered Fall and Spring.

Military Science

MSCI 1170 - Introduction to the Army

1 sem. hrs. Lab MSCI 1170/MSL 101 Focuses on introduction to the Army and critical thinking. It introduces Cadets to the Army and the Profession of Arms. Students will examine the Army Profession and what it means to be a professional in the U.S. Army. The overall focus is on developing basic knowledge and comprehension of the Army Leadership Requirements Model while gaining a complete understanding of the Reserve Officers' Training Corps (ROTC) program, its purpose in the Army, and its advantages for the student. Cadets also learn how resiliency and fitness support their

development as an Army leader. Includes a weekly lab facilitated by MS III Cadets and supervised by ROTC Cadre.

MSCI 1171 - Foundations of Leadership

1 sem. hrs. Lab MSCI 1171/MSL 102 Introduces Cadets to the personal challenges and competencies are critical for effective leadership. Cadets learn the personal development of life skills such as critical thinking, time management, goal setting, and communication. Cadets learn the basics of the communications process and the importance for leaders to develop the essential skills to effectively communicate in the Army. Cadets will begin learning the basics of squad level tactics that will be reinforced during a weekly lab facilitated by MS III Cadets and supervised by ROTC Cadre.

MSCI 1370 - Leadership and Personal Development

3 sem. hrs. MSCI 1370/MSL 1301 introduces you to the personal challenges and competencies that are critical for effective leadership. You will learn how the personal development of life skills such as goal setting, time management, physical fitness, and stress management related to leadership, officership, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining a big picture understanding of the ROTC program, its purpose in the Army, and its advantages for the student.

MSCI 1371 - Introduction to Tactical Leadership

3 sem. hrs. MSCI 1371/MSL 1302 introduces leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. You will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises.

MSCI 2170 - Innovative Team Leadership Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will participate as a team member through a variety of group exercises and tactical scenarios. The emphasis is on exploring, and developing skills in decision-making that the student will need in their advanced classes. The lab continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, squad, and platoon tactics. Concurrent enrollment in MSCI 2370.

MSCI 2171 - Foundations of Tactical Leadership Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will participate as a team member through a variety of group exercises and tactical scenarios. The emphasis is on exploring and developing skills in decision making that the student will need in their advanced classes. The lab continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, squad and platoon tactics. Concurrent enrollment in MSCI 2371.

MSCI 2270 - Leadership and Ethics

2 sem. hrs. (2:1) MSCI 2270/MSL 201 Focuses on leadership and decision making. The outcomes are demonstrated through Critical and Creative Thinking and the ability to apply Troop Leading Procedures (TLP) Innovative Solutions to Problems. The Army Profession is also stressed through leadership forums and a leadership self-assessment. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a weekly lab facilitated by MSL III Cadets and supervised by Cadre.

MSCI 2271 - Army Doctrine and Decision Making

2 sem. hrs. (2:1) MSCI 2271/MSL 202 Focuses on Army doctrine and team development. The course begins the journey to understand and demonstrate competencies as they relate to Army doctrine. Army Values, Teamwork, and Warrior Ethos and their relationship to the Law of Land Warfare and philosophy of military service are also stressed. The ability to lead and follow is also covered through Team Building exercises at squad level. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a weekly lab facilitated by MSL III Cadets and supervised by Cadre.

MSCI 3103 - Adaptive Team Leadership Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will learn to apply leadership strategies and styles as they plan, execute and assess individual and team exercises. The emphasis is on exploring, evaluating, and developing skills in decision-making, and persuading and motivating team members in the contemporary operating environment (COE). The lab continues to build on developing knowledge of the leadership attributes and core leader competencies though the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, and squad tactics. Concurrent enrollment in MSCI 3303.

MSCI 3104 - Applied Team Leadership Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will learn to apply leadership strategies and styles as they plan, execute and assess individual and team exercises. The emphasis is on exploring, evaluating, and developing skills in decision-making, and persuading and motivating team members in the contemporary operating environment (COE). The lab continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, and squad tactics. Concurrent enrollment in MSCI 3304.

MSCI 3301 - American Military History

3 sem. hrs. A comprehensive, but brief account of the U.S. Army from past to present. Integrates the basic knowledge of American military history into the future officer's education. This is an Army standardized, mandatory course that is a part of pre-commissioning training for contracted U.S. Army ROTC cadets. Employs American military history as a tool for studying military professionalism and applying critical-thinking skills and decision-making skills to military problems. Analyzes the definition of Military History, the theory and practice of war, and the American Military System as an intellectual framework for applying critical-thinking skills and problem-solving skill to the study of historical, military problems. Pre-Req: MSCI 1170, MSCI 1171, MSCI 2270, and MSCI 2271 or Department approval.

MSCI 3403 - Training Management and the Warfighting Functions

4 sem. hrs. (4:1) MSCI 3304/MSL 301 Focuses on training management and the warfighting functions. It is an academically challenging course where you will study, practice and apply the fundamental of Training Management and how the Army operates through the Warfighting functions. At the conclusion of this course, the Cadet will be capable of planning, preparing, and executing training for a squad, conductiong small unit tactics. Includes a lab per week using peer facilitation overseen by MSL IVs, supervised by ROTC Cadre.

MSCI 3404 - Applied Leadership in Small Unit Operations

4 sem. hrs. (3:1) MSCI 3404/MSL 302 Focuses on applied leadership in small unit operations. It is an academically challenging course where the cadet will study, practice, and apply the fundamentals of direct-level leadership and small unit tactics at the platoon level. At the conclusion of this course, the Cadet will be capable of planning,

coordinating, navigating, motivating, and leading a platoon in the execution of a mission. Includes a lab per week using peer facilitation overseen by MSL IVs, supervised by ROTC cadre. Successful completion of this course will help prepare for the Cadet Summer Training Advance Camp to be attended in the summer at Fort Knox, KY.

MSCI 3499 - Leadership Development Assessment Course (LDAC)

4 sem. hrs. Four weeks of instruction and practical application in field training, demonstration of leadership capabilities, and leadership opportunities of problem analysis, decision making, and troop-leading. CR/NC only. Prerequisite: MSCI 3303, 3304 and a ROTC contracted Cadet and approval of the Professor of Military Science.

MSCI 4103 - Adaptive Leadership Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will learn to apply leadership strategies and styles as they plan, execute and assess individual and team exercises. The emphasis is on coaching, mentoring, evaluating, and developing skills of younger cadets in their decision making, and ability to persuade and motivate team members in the contemporary operating environment (COE). The lab continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, and squad tactics. Concurrent enrollment in MSCI 4303.

MSCI 4104 - Leadership in a Complex World Lab

1 sem. hrs. lab The lab component explores the practical applications of the lessons being taught in the classroom. Students will learn to apply leadership strategies and styles as they plan, execute and assess individual and team exercises. The emphasis is on coaching, mentoring, evaluating, and developing skills of younger cadets in their decision making, and ability to persuade and motivate team members in the contemporary operating environment (COE). The lab continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation, individual, and squad tactics. Concurrent enrollment in MSCI 4304.

MSCI 4305 - Advanced Problem Solving

3 sem. hrs. Military Science special problems course designed for individual study in modern day military structure and policies. Prerequisite: Approval of Professor of Military Science.

MSCI 4403 - The Army Officer

4 sem. hrs. (3:1) MSCI 4403/MSL 401 Focuses on development of the Army Officer. It is an academically challenging course where the Cadet will develop knowledge, skills, and abilities to plan, resource, and assess training at the small unit level. The Cadet will also learn about Army programs that support counseling subordinates and evaluating performance, values and ethics, career planning, and legal responsibilities. At the conclusion of this course, the Cadet will be familiar with how to plan, prepare, execute, and continuously assess the conduct of training at the company or field grade officer level. Includes a lab per week overseeing MSL III lesson facilitation and supervised by ROTC Cadre.

MSCI 4404 - Company Grade Leadership

4 sem. hrs. (3:1) MSCI 4404/MSL 402 An academically challenging course where the Cadet will develop knowledge, skills, and abilities required of junior officers pertaining to the Army in Unified Land Operations and Company Grade Officer roles and responsibilities. This course includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam, and an Oral Practicum as the final exam. The Oral Practicum explores the knowledge of how well the Cadet will be prepared for the 20 Army Warfighting Challenges (AWFC) covered throughout the ROTC Advanced Course. Successful completion of this course will assist in preparing for the BOLC B course and is a mandatory requirement for commissioning. Includes a lab per week overseeing MSL III lesson facilitation and supervised by ROTC Cadre.

MSCI 4696 - Military Science Directed Individual Study

1-6 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies. Prerequisite: Approval of Professor of Military Science.

Music

MIND 3311 - Applications of Music Technology

3 sem. hrs. Designed for both music majors and non-majors, this course will focus on hands-on learning in a workshop environment. Students will gain perspective on the people, procedures, data, software and hardware associated with the creation of music. Topics discussed include: computer proficiency, MIDI, computer based music notation, sequencing music evaluation, music and the Internet, and current trends in music technology.

MIND 3312 - Recording Techniques I

3 sem. hrs. Designed for both music majors and non-majors, this course is an examination of the art of audio recording. The curriculum will cover signal flow of the mixing console as it applies to both recording and sound reinforcement; microphones and techniques of application; use of sonic effects; recording devices (Digital, and Hard Disk); synchronization formats; etc.

MIND 3313 - Recording Techniques II

3 sem. hrs. A continuation of MIND 3312 Recording Techniques. The curriculum will cover advanced topics regarding digital console technology, power and ground related issues, studio acoustics and design, digital audio technology, multimedia and web applications, amplifiers, noise reduction, monitoring, surround sound, and mastering procedures.

MIND 3314 - Live Sound Engineering

3 sem. hrs. Designed for both music majors and non-majors, an overview of the basic principles of sound and reinforcement and how audio can be manipulated utilizing current live sound technology. Topics will include signal flow, microphone selection and placement, signal processing, and mixing.

MIND 3315 - Musical Acoustics

3 sem. hrs. Designed for both music majors and non-majors, an overview of acoustics with emphasis in the areas of scientific knowledge that are relevant to music: the physiological properties of sounds; the effect of acoustical environment; the acoustical behavior of musical instruments; and the various applications of electronics and computers to the production, reproduction, and composition of music.

MIND 3316 - Introduction to MIDI Sound Synthesis and Control

3 sem. hrs. Designed for both music majors and non-majors, this course introduces students to the Musical Instrument Digital Interface (MIDI) sequencing using computer

software and keyboard synthesizers. Students learn concepts, basic theory and techniques, and the application of MIDI techniques to the production of music. Hands-on projects are completed using MIDI keyboard synthesizers and sequencer software.

MIND 3320 - Music Business Survey

3 sem. hrs. Designed for both music majors and non-majors, this course is an overview of the practices and procedures of the music industry, including such topics as career possiblities, publishing, labels, marketing, and copyrights. It also includes an overview of career options will include performer, composer, record producer and engineer, artist manager, booking agent, concert promoter, sales, marketing, and entertainment attorney.

MIND 3321 - Music Business II

3 sem. hrs. Designed for both music majors and non-majors, this course is an in depth examination of the practices and procedures of the music industry that pertain to accounting, taxes, copyright, licensing, marketing and contracts. The primary objective of this course is to develop a working knowledge of the music industry and to remain in compliance with the U.S. legal system.

MIND 3322 - Entertainment Law and the Music Industry

3 sem. hrs. Designed for both music majors and non-majors, an overview of the legal practices and ramifications of United States law and its influence on the music industry. Topics will include intellectual property, business structures, contracts, distribution regulations, and copyrights. Legal practices for entertainment mediums will include television, film, live stage performances, recording, and publishing.

MIND 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

MIND 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application.

MUSI 1116 - Aural Training I

1 sem. hrs. A companion course to MUSI 1311, designed to strengthen the understanding of theoretical principles through the development of aural perception and skills; exercises in melodic, harmonic, and rhythmic dictation; and drill in sight singing. TCCNS Equivalent: MUSI 1116

MUSI 1117 - Aural Training II

1 sem. hrs. Continuation of MUSI 1116; a companion course to MUSI 1312. Prerequisite: Passing score on the Music Department Theory Fundamentals Placement Exam OR prior completion of MUSI 1116 and MUSI 1311 with grades of "C" or better. TCCNS Equivalent: MUSI 1117

MUSI 1181 - Class Piano I

1 sem. hrs. Group instruction in piano for music majors, covering piano technique and literature, major and minor scales, transposition, sight reading, and simple harmonization of melodies. In extraordinary circumstances, students may substitute one semester of secondary applied piano for this course. Keyboard majors accepted for degree-level study should substitute four semesters of Secondary Applied Studio. TCCNS Equivalent: MUSI 1181

MUSI 1182 - Class Piano II

1 sem. hrs. Group instruction in piano for music majors, covering piano technique and literature, major and minor scales, transposition, sight reading, and simple harmonization of melodies. In extraordinary circumstances, students may substitute one semester of secondary applied piano for this course. Keyboard majors accepted for degree-level study should substitute four semesters of Secondary Applied Studio. TCCNS Equivalent: MUSI 1182

MUSI 1301 - Fundamentals of Music*

3 sem. hrs. Designed to teach beginning music students the basic tenet of music theory: note reading, rhythm, scales, key signatures, basic intervals and triads, and solfeggio. There are no prerequisites, and this course is open to music majors and non-music majors.

MUSI 1302 - Non-major Class Piano I

3 sem. hrs. Group instruction in the elements of piano playing, designed for the non-major. No previous experience necessary.

MUSI 1303 - Basic Guitar I

3 sem. hrs. Group instruction in the fundamentals of guitar playing, designed for the non-major. The student must furnish an acceptable instrument. No previous experience necessary. TCCNS Equivalent: MUSI 1303

MUSI 1306 - Understanding and Enjoying Music*

3 sem. hrs. A course for the non-music major. Study of selected music literature of contrasting styles and forms with emphasis on listening to music with understanding. TCCNS Equivalent: MUSI 1306 Satisfies the university core curriculum requirement in fine arts.

MUSI 1307 - Elements of Musical Style

3 sem. hrs. A survey of selected western and non-western musical styles, based upon the analysis of the characteristic use of the elements of music. Required for music majors and recommended for non-majors with a significant high school music background. TCCNS Equivalent: MUSI 1307 Satisfies the university core curriculum requirement in fine arts.

MUSI 1310 - History of Rock and Roll*

3 sem. hrs. A general survey of composers, performers, and styles of rock and roll. Emphasis on understanding stylistic elements of music, including rhythm, texture, form, and harmony.

MUSI 1311 - Musicianship I

3 sem. hrs. First principles of chord progression and phrase harmonization. Theory assessment required prior to enrollment. TCCNS Equivalent: MUSI 1311

MUSI 1312 - Musicianship II

3 sem. hrs. Continuation of MUSI 1311, with a study of more advanced chord structures and their placement within the phrase through written exercises, analysis, and correlated keyboard projects. Prerequisite: Passing score on the Music Department Theory Fundamentals Placement Exam OR prior completion of MUSI 1311 and MUSI 1116 with grades of "C" or better. TCCNS Equivalent: MUSI 1312

MUSI 2116 - Aural Training III

1 sem. hrs. Continuation of MUSI 1117; a companion course to MUSI 2311. Designed to further the understanding of advanced theoretical principles and techniques through related aural exercises, dictation, and sight singing. Prerequisite: Prior completion of MUSI 1117 and MUSI 1312 with grades of "C" or better. TCCNS Equivalent: MUSI 2116

MUSI 2117 - Aural Training IV

1 sem. hrs. Continuation of MUSI 2116; a companion course to MUSI 2312. Prerequisite: Prior completion of MUSI 2116 and MUSI 2311 with grades of "C" or better. TCCNS Equivalent: MUSI 2117

MUSI 2181 - Class Piano III

1 sem. hrs. Group instruction in piano for music majors, covering piano technique and literature, major and minor scales, transposition, sight reading, and simple harmonization of melodies. In extraordinary circumstances, students may substitute one semester of secondary applied piano for this course. Keyboard majors accepted for degree-level study should substitute four semesters of Secondary Applied Studio. TCCNS Equivalent: MUSI 2181

MUSI 2182 - Class Piano IV

1 sem. hrs. Group instruction in piano for music majors, covering piano technique and literature, major and minor scales, transposition, sight reading, and simple harmonization of melodies. In extraordinary circumstances, students may substitute one semester of secondary applied piano for this course. Keyboard majors accepted for degree-level study should substitute four semesters of Secondary Applied Studio. TCCNS Equivalent: MUSI 2182

MUSI 2302 - Non-major Class Piano II

3 sem. hrs. Extension of skill development begun in MUSI 1302 Non-Major Class Piano I. Prerequisite: successful completion of MUSI 1302 or permission of instructor.

MUSI 2303 - Basic Guitar II

3 sem. hrs. Extension of skill development begun in MUSI 1303 - BASIC GUITAR I. The student must furnish an acceptable instrument. Prerequisite: successful completion of MUSI 1303 or prior permission of instructor.

MUSI 2311 - Musicianship III

3 sem. hrs. Continuation of MUSI 1312. A broad summary of classical and chromatic harmony, explored through written exercises, analysis, and. correlated keyboard drill. Prerequisite: Prior completion of MUSI 1312 and MUSI 1117 with grades of "C" or better. TCCNS Equivalent: MUSI 2311

MUSI 2312 - Musicianship IV

3 sem. hrs. Continuation of MUSI 2311. An exploration of 20th-century techniques through written exercises, analysis, and correlated keyboard drill. Prerequisite: Prior completion of MUSI 2311 and MUSI 2116 with grades of "C" or better. TCCNS Equivalent: MUSI 2312

MUSI 3085 - Junior Recital

0 sem. hrs. Required for all students presenting a Junior Recital in partial fulfillment of the requirements for the Bachelor of Music in Performance Degree. Specific policies governing the presentation and evaluation of such recitals are given in the document, Preparing and Presenting Degree Recitals, available from the Music Department Chair. Requires concurrent enrollment in an appropriate Principal Studio course. Graded CR/NC.

MUSI 3162 - Diction for Singers I

1 sem. hrs. Learning to use the International Phonetic Alphabet (IPA) with sufficient fluency to effectively teach and learn proper pronunciation of song texts in English and French.

MUSI 3165 - Diction for Singers II

1 sem. hrs. Learning to use the International Phonetic Alphabet (IPA) with sufficient fluency to effectively teach and learn proper pronunciation of song texts in Italian and German.

MUSI 3166 - Woodwind Techniques I

1 sem. hrs. Basic techniques of playing and teaching the oboe, bassoon, and saxophone. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3167 - Woodwind Techniques II

1 sem. hrs. Basic techniques of playing and teaching the flute and clarinet. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3168 - Brass Techniques I

1 sem. hrs. Basic techniques of playing and teaching the trumpet and French horn. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3169 - Brass Techniques II

1 sem. hrs. Basic techniques of playing and teaching the trombone, euphonium, and tuba. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3170 - Voice Techniques for Instrumentalists

1 sem. hrs. Group instruction and practical experience in the fundamentals of voice production and song interpretation for the instrumental music educator. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3188 - Percussion Techniques

1 sem. hrs. Basic techniques of playing and teaching the instruments of the percussion family. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3189 - String Techniques

1 sem. hrs. Basic techniques of playing and teaching the violin, viola, 'cello, and string bass. Includes a survey of pedagogical materials and basic performance literature. For music majors only.

MUSI 3252 - Foundations of Music Programs

2 sem. hrs. A survey of the historical, social, and philosophical bases of music education in the United States, psychological theories of learning and musical responsiveness, and studies of how these foundations have been applied in various types of music curricula. Prerequisite: Prior completion of MUSI 2311 and MUSI 2116 with grades of "C" or better.

MUSI 3253 - Basic Conducting

2 sem. hrs. A skills acquisition course designed to give students competence in basic baton techniques and musical control of an ensemble. Includes score study and musical terminology. Prerequisite: Prior completion of MUSI 2311 and MUSI 2116 with grades of "C" or better.

MUSI 3310 - History of Jazz

3 sem. hrs. A study of jazz styles, influences, trends, innovators, and literature. Readings include interviews and articles that discuss origins of jazz, definitions of jazz, and race politics of jazz. No previous experience is necessary.

MUSI 3311 - Popular and Jazz Harmony I

3 sem. hrs. Popular and Jazz Harmony is a class designed to develop comprehensive skills in harmony, rhythm, and melody as applied to popular music and jazz idioms. Course work is designed to develop practical knowledge in music grammer, vocabulary and structure currently utilized in a variety of professional settings as well as improve aural skills. Curriculum is organized to assist professional musicians as well as music industry professionals.

MUSI 3334 - Music Cultures of the World

3 sem. hrs. The course introduces the student to ethnomusicology and the cross-cultural study of music and society. It emphasizes the role of music in human life, and explores music and performance from around the world. The student will learn about classical, folk and popular styles found on all seven continents. This course is appropriate for any student of any musical background.

MUSI 3345 - Composition

1-3 sem. hrs. Creative writing with a view toward developing an individual style of musical composition. Variable credit, 1, 2, or 3 hrs. One private lesson per week. Prior permission of the instructor is required. Prerequisite: Prior completion of MUSI 2312 and MUSI 2117 with grades of "C" or better. May be repeated for credit. Music Studio course fee schedule is applicable to this course.

MUSI 3346 - Form and Analysis of Tonal Music

3 sem. hrs. Analysis of the melodic and harmonic design of tonal music, including the aural and visual analysis of scores for piano, voice, chamber ensembles, and orchestra. Prerequisite: Prior completion of MUSI 2312 and MUSI 2117 with grades of "C" or better.

MUSI 3354 - Advanced Conducting

3 sem. hrs. A continuation of MUSI 3252. Advanced experiences with score preparation and effective ensemble rehearsal and management techniques. Prerequisite: Prior completion of MUSI 3252 with a grade of "C" or better.

MUSI 3370 - Class Voice

3 sem. hrs. Group instruction and practical experience in the fundamentals of voice production, music reading, and song interpretation. Dramatic stage movement and singing will be explored using Classical and Broadway song literature. This course is designed for the non-major. No previous experience is necessary.

MUSI 4085 - Senior Recital

0 sem. hrs. Required for all students presenting a Senior Recital in partial fulfillment of the requirements for any music degree. Specific policies governing the presentation and evaluation of such recitals are given in the document, Preparing and Presenting Degree Recitals, available from the Music Program Coordinator. Requires concurrent enrollment in an appropriate Principal Studio course. Graded CR/NC.

MUSI 4334 - History of Western Music I

3 sem. hrs. An in-depth study of the evolution of Western musical style from antiquity through the 18th-century. Prerequisite: Prior completion of MUSI 1307, MUSI 2312, and MUSI 2117 with grades of "C" or better.

MUSI 4335 - History of Western Music II

3 sem. hrs. Continuation of MUSI 4334, an in-depth study of the evolution of Western musical style from the age of Beethoven to the present. Prerequisite: Prior completion of MUSI 4334 with a grade of "C" or better.

MUSI 4340 - Studies in Repertoire

3 sem. hrs. Systematic examination of the history and literature of a specific performance medium.

MUSI 4346 - Orchestration and Arranging

3 sem. hrs. The compass, timbre, and techniques of arranging and/or orchestration for instruments and/or voices. Practical experience in arranging for orchestra, band, and other instrumental and vocal combinations. Prerequisite: Prior completion of MUSI 2312 and MUSI 2117 with grades of "C" or better.

MUSI 4355 - Music for Young Children

3 sem. hrs. Study of musical development in children in grades K-6. Study of and practical experience with pedagogical approaches and materials appropriate for that age group. Prerequisite: Prior completion of MUSI 3252 with a grade of "C" or better.

MUSI 4357 - Choral Literature and Techniques

3 sem. hrs. Advanced study of the literature, pedagogy, and management techniques required for successful vocal ensembles in secondary schools. Prerequisite: Prior completion of MUSI 3253 with a grade of "C" or better.

MUSI 4358 - Instrumental Literature and Techniques

3 sem. hrs. Advanced study of the literature, pedagogy, and management techniques required for successful instrumental ensembles in secondary schools. Includes a segment pertaining to the development of marching band shows. Prerequisite: Prior completion of MUSI 3253 with a grade of "C" or better.

MUSI 4360 - Studies in Pedagogy

3 sem. hrs. Methods, materials and psychology of presenting musical materials to students at various ages. Evaluation of teaching materials and techniques. Classes are organized by specific performance areas.

MUSI 4385 - Senior Capstone

3 sem. hrs. The Senior Capstone is intended to provide students seeking the Bachelor of Arts in Music with an opportunity to demonstrate their musical scholarship through scholarly analysis and writing within a field of music of their choosing. May include a performance component, as in a lecture recital, but musical performance may comprise no more than 40% of the capstone project.

MUSI 4390 - Topics in Music

1-3 sem. hrs. May be repeated for credit when topics vary.

MUSI 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

MUSI 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application.

Music (Applied)

MUAP 11xx - Principal Studio

1 sem. hrs. The first two semesters of private studio for all students pursuing any of the three music degrees. Normally unavailable to students not majoring in music. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 11xx - Secondary Studio

1 sem. hrs. This level of study is designed for music majors seeking instruction in performance areas secondary to their major applied field. Study at this level is open to students whose majors are outside the field of music only under very limited circumstances, and with the prior permission of the Music Department Chair. One half-hour lesson each week. Requires permission of the department chair.

MUAP 21xx - Principal Studio

1 sem. hrs. The appropriate studio level for sophomore students enrolled in the Bachelor of Arts or Bachelor of Music with Teacher Certification degree programs. Normally unavailable to students not majoring in music. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 21xx - Secondary Studio

1 sem. hrs. This level of study is designed for music majors seeking instruction in performance areas secondary to their major applied field. Study at this level is open to students whose majors are outside the field of music only under very limited circumstances, and with the prior permission of the Music Department Chair. One half-hour lesson each week. Requires permission of the department chair.

MUAP 23xx - Principal Studio

3 sem. hrs. Sequence of studio courses limited to sophomore students enrolled in the Bachelor of Music in Performance degree program. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 31xx - Secondary Studio

1 sem. hrs. This level of study is designed for music majors seeking instruction in performance areas secondary to their major applied field. Study at this level is open to students whose majors are outside the field of music only under very limited circumstances, and with the prior permission of the Music Department Chair. One half-hour lesson each week. Requires permission of the department chair.

MUAP 32xx - Principal Studio

2 sem. hrs. The appropriate studio level for junior students enrolled in the Bachelor of Arts or Bachelor of Music with Teacher Certification degree programs. Normally unavailable to students not majoring in music. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 33xx - Principal Studio

3 sem. hrs. Sequence of studio courses limited to junior students enrolled in the Bachelor of Music in Performance degree program. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 41xx - Secondary Studio

1 sem. hrs. This level of study is designed for music majors seeking instruction in performance areas secondary to their major applied field. Study at this level is open to students whose majors are outside the field of music only under very limited circumstances, and with the prior permission of the Music Department Chair. One half-hour lesson each week. Requires permission of the department chair.

MUAP 42xx - Principal Studio

2 sem. hrs. The appropriate studio level for senior students enrolled in the Bachelor of Arts or Bachelor of Music with Teacher Certification degree programs. Normally unavailable to students not majoring in music. One hour of private instruction and a one-hour studio/recital class each week.

MUAP 43xx - Principal Studio

3 sem. hrs. Sequence of studio courses limited to senior students enrolled in the Bachelor of Music in Performance degree program. One hour of private instruction and a one-hour studio/recital class each week.

Music (Ensemble)

MUEN 1122 - Concert Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. For rotation of music courses see departmental office.

MUEN 1123 - Symphonic Winds

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1124 - Concert Orchestra

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1127 - Pep Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to

the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1128 - Stage Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1131 - Piano Accompanying

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1132 - Classical Guitar Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1133 - Percussion Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to

the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1135 - Brass Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1136 - Woodwind Choir

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1137 - Clarinet/Sax Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1138 - Jazz Guitar Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to

the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1139 - Flute Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1140 - String Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1143 - Chorale

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1151 - University Singers

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to

the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1153 - Chamber Choir

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1157 - Opera Workshop

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1158 - Opera Main Stage Productions

1-3 sem. hrs. This course is an intensive study of opera role preparation and performance culminating in fully staged opera productions or opera scenes programs. Membership in this music ensemble is open to all university students by competetive audition. All ensemble courses carry one semester hour of credit, and may be repeated for credit. Some degree programs limit the amount of such credit that jay be applied to the degree. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 1159 - Mariachi Ensemble

1 sem. hrs. This course is designed to assist the student in developing an increased proficiency in the art of Mariachi Performance. In accomplishing this goal, this course will allow each student to develop: 1.) performance skills on the instruments of the mariachi (including violin, trumpet, guitar, guitarron, vihuela, and harp), and 2.) knowledge of the repertoire and history of mariachi literature. Performance of an instrument in the mariachi also requires singing when the repertoire calls for it. The

objective is to study the literature of Mexican Folk music; to engage in the technical study of mastering performance on the instruments of the mariachi; to represent TAMUCC in the immediate and global community through musical excellence.

MUEN 3122 - Concert Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stack course with MUEN 1122

MUEN 3123 - Symphonic Winds

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. The is a stacked course with MUEN 1123

MUEN 3124 - Concert Orchestra

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with 1124

MUEN 3127 - Pep Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble

courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1127.

MUEN 3128 - Stage Band

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1128

MUEN 3132 - Classical Guitar Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1132

MUEN 3133 - Percussion Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1133

MUEN 3135 - Brass Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1135

MUEN 3136 - Woodwind Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester.

MUEN 3139 - Flute Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1139

MUEN 3140 - String Ensemble

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1140

MUEN 3143 - Chorale

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1143

MUEN 3151 - University Singers

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1151

MUEN 3153 - Chamber Choir

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1153

MUEN 3157 - Opera Workshop

1 sem. hrs. Membership in music ensembles is open to all University students. Ensembles meet for periods of rehearsal ranging from two to five hours each week. All ensemble courses carry one semester hour of credit, and all may be repeated for credit. Some degree programs limit the amount of such credit that may be applied to the degree. In some instances, an audition with the ensemble director may be required for admission to the course. Every full-time music major must enroll, participate, and receive a passing

grade in a major ensemble every semester except the student teaching semester. This is a stacked course with MUEN 1157

MUEN 3159 - Mariachi Ensemble

1 sem. hrs. This course is designed to assist the student in developing an increased proficiency in the art of Mariachi Performance. In accomplishing this goal, this course will allow each student to develop: 1) performance skills on the instruments of the mariachi (including violin, trumpet, guitar, guitarron, vihuela, and harp), and 2) knowledge of the repertoire and history of mariachi literature. Performance of an instrument in the mariachi also requires singing when the repertoire calls for it. The objective is to study the literature of Mexican Folk music; to engage in the technical study of mastering performance on the instruments of the mariachi; to represent TAMUCC in the immediate and global community through musical excellence.

Mexican American Studies

MXAS 3301 - Introduction to Mexican American Studies

3 sem. hrs. An introduction to the area of Chicano Studies including the cultural, historical, and linguistic approaches. This basic course includes the study of major authors, significant historical events, and important linguistic considerations.

MXAS 3307 - Mexican American Folklore

3 sem. hrs. Studies folklore through selected examples of traditional Mexican and Mexican American culture. Possible topics include: folk songs, folk healing, folk art, foods, testimonials, tales, proverbs, riddles, or other cultural element characteristics of the Mexican American experience.

MXAS 3311 - Mexican American Literature

3 sem. hrs. An analysis of Chicano literature. Special emphasis will be given to the new consciousness of the Chicano in the most current literature of the various genres.

MXAS 4390 - Topics in Mexican American Studies

3 sem. hrs. May be repeated when topics vary.

Nursing

NURS 3150 - Professional Nursing Issues I*

(1:0) Concentrates on legal and ethical issues affecting the nurse as an individual and a professional, and health care delivery to clients, groups and aggregates. Consideration is given to self-discovery, personal assertiveness, role conflict, negotiation and collective bargaining. Students are encouraged to apply critical thinking strategies during classroom discussions and presentations. Prerequisites: NURS 3318, 3342, 3435, 3614

NURS 3318 - Nurse as therapeutic Communicator*

3 sem. hrs. (3:0) Emphasis is on caring communication as an essential dimension of professional nursing. Theories are presented to explain the dynamic relationship between human behavior, health, and illness, and the impact of interpersonal relationship skills to effect positive changes in individuals and their families. Nurse communication in the role of educator will be introduced as part of the teaching/learning course content.

NURS 3342 - Use of Pharmacology Principles*

3 sem. hrs. (3:0) Focuses on the basic drug classifications, concepts and principles of pharmacology, with special consideration for the nursing role in developing a comprehensive approach to the clinical application of drug therapy through the use of the nursing process. Nursing implications relative to the utilization of drug therapy are examined. Dosage calculations are evaluated for competency. (Is a pre-requisite for admission into the nursing program.) Prerequisites: BIOL 2401 and BIOL 2402. Corequisite: NURS 4322.

NURS 3435 - Health Assessment - RN/BSN*

4 sem. hrs. (3:3) Focuses on health assessment skills and application of the nursing process in selected pathophysiological disorders through analysis and synthesis of information obtained from subjective and objective data collection methodologies. Specified frameworks are utilized for data categorization and processing. The data are used to make judgments about health status or determine care needs for a given individual.

NURS 3435 - Health Assessment*

4 sem. hrs. (3:3) Focuses on health assessment skills and application of the nursing process in selected pathophysiological disorders through analysis and synthesis of information obtained from subjective and objective data collection methodologies. Specified frameworks are utilized for data categorization and processing. The data are used to make judgments about health status or determine care needs for a given

individual. Students are assigned to a weekly two-hour lab to practice under supervision and demonstrate health assessment skills.

NURS 3548 - Nursing Care of Children and their Families*

5 sem. hrs. (3:6) Applying a family-centered approach, this course focuses on health promotion, acute and chronic health conditions, and rehabilitative needs of children. Emphasis is placed on developmental, physiological, psycho-social, cultural, and spiritual care of the child within the family unit. Using the nursing process, strategies are formulated for promoting and maintaining optimal functioning of the child-family unit and for enhancing the strengths of the family unit. Clinical activities emphasize the application of theory to practice in a variety of acute care settings. Prerequisites: NURS 3318, 3342, 3435, and 3614.

NURS 3550 - Nursing Care of Parents/newborns*

5 sem. hrs. (3:6) A study of the theoretical and empirical basis for nursing care of childbearing families using both nursing and developmental theories. Biopsychosocial factors such as legal/ethical and cultural considerations related to pregnancy, birth and newborn periods are included. A historical overview of obstetrical advances and parent-child nursing will be presented. Practice in providing nursing care to families during each phase of the childbearing cycle will occur in selected local hospitals and clinics. The nursing process is used with emphasis on the theoretical and empirical basis of practice. Prerequisites: NURS, 3318, 3614, 3342, 3435

NURS 3614 - Fundamentals of Nursing Care*

6 sem. hrs. (3:9) Fundamentals of Nursing Care is developed for the incoming nursing student and introduces them to nursing practice and philosophies that underpin clinical practice. Fundamental nursing skills are an integral part of the nursing experience and include, but are not limited to, patient safety, with a focus on techniques related to environmental concerns, positioning and transporting, asepsis and sterile technique, medication administration, and selected intrusive therapies. The critical thinking process, art of caring, and nursing theories upon which clinical practice is based will be integrated throughout the course to provide and manage safe, holistic care practices. The campus laboratory and clinical settings will afford practical experiences that include simulation and direct patient care interventions. These experiences facilitate learner application and integration of the principles and skills taught in the theory portion of this class. Students are expected to demonstrate beginning competency in application of the nursing process. Prerequisite NURS 4322; Co-requisite: 3435, 3318.

NURS 3628 - Nursing Care of Adults I*

6 sem. hrs. (3:9) Introduces the student to the use of the nursing process in the care of adults with chronic or non-complex illness. Uses a systems approach to discuss the effects of illness on individual and family, and to examine the disruption of growth and development patterns across the lifespan from young adult to senior years. The course includes clinical laboratory to allow the student the opportunity to apply theoretical concepts to clinical practice in diverse adult populations. Prerequisites: NURS 3318, 3435, 3614, 3342

NURS 4150 - Professional Nursing Issues II*

(1:0) Concentrates on economic and political issues affecting the nurse as an individual and a professional, and health care delivery to clients, groups and aggregates. Consideration is given to self-discovery, personal assertiveness, role conflict, negotiation and collective bargaining. Students are encouraged to apply critical thinking strategies during classroom discussions and presentations. Prerequisites/Corequisites NURS 3628, 4564, 3548, 3550

NURS 4155 - Professional Nursing Planning and Licensure Preparation

1 sem. hrs. The course emphasizes reflection, integration, and synthesis of curricular concepts. Students engage in comprehensive review of major nursing content for licensure, preparation for entry into practice, and plans for life-long learning.

NURS 4172 - Biobehavioral Nursing Interventions II: Population Health and Chronic Health Issues Across the Lifespan

1 sem. hrs. Through psychomotor skill development and simulation this course advances health assessment, psychosocial, psychomotor, critical thinking, and therapeutic communication skills essential to promote, protect, maintain and restore the health of populations and provide holistic, evidence-based nursing care to individuals with chronic conditions across the lifespan and across health care settings with an emphasis on primary care.

NURS 4173 - Biobehavioral Nursing Interventions III: Family and Child Health and Complex Health Issues Across the Lifespa

1 sem. hrs. Through psychomotor skill development and simulation this course advances health assessment, psychosocial, psychomotor, critical thinking, and therapeutic communication skills essential to caring for the childbearing family as well as infants,

children, and adolescents with chronic/unique conditions across health care settings with an emphasis on primary care.

NURS 4174 - Biobehavioral Nursing Interventions IV: Synthesis of Nursing Knowledge, Evidence, and Practice

1 sem. hrs. Through psychomotor skill development and simulation this course advances health assessment, psychosocial, psychomotor, critical thinking, and therapeutic communication skills essential to caring for individuals, families, and populations with acute and chronic conditions across health care settings with an emphasis on primary care.

NURS 4231 - Pathophysiology/Pharmacology I

2 sem. hrs. The course integrates anatomy, chemistry, microbiology, genetics/genomics, and psychoneuroimmunoendocrinology to explore physiologic and neurobehavioral alterations that occur in response to internal and external changes across the lifespan. Pharmacological concepts and interventions are explored as one strategy to promote health. Course content aligns with Biobehavioral Nursing Concepts II & III.

NURS 4232 - Pathophysiology/Pharmacology II

2 sem. hrs. The course integrates anatomy, chemistry, microbiology, genetics/genomics, and psychoneuroimmunoendocrinology to explore physiologic and neurobehavioral alterations that occur in response to internal and external changes across the lifespan. Pharmacological concepts and interventions are explored as one strategy to promote health. Course content aligns with Biobehavioral Nursing Concepts II & III.

NURS 4233 - Pathophysiology/Pharmacology III

2 sem. hrs. The course integrates anatomy, chemistry, microbiology, genetics/genomics, and psychoneuroimmunoendocrinology to explore physiologic and neurobehavioral alterations that occur in response to internal and external changes across the lifespan. Pharmacological concepts and interventions are explored as one strategy to promote health. Course content aligns with Biobehavioral Nursing Concepts III & IV.

NURS 4234 - Pathophysiology/Pharmacology IV

2 sem. hrs. The course integrates anatomy, chemistry, microbiology, genetics/genomics, and psychoneuroimmunoendocrinology to explore physiologic and neurobehavioral alterations that occur in response to internal and external changes across the lifespan.

Pharmacological concepts and interventions are explored as one strategy to promote health. Course content aligns with Biobehavioral Nursing Concepts III & IV.

NURS 4250 - Professional Nursing Issues*

2 sem. hrs. (2:0) Concentrates on legal, ethical, economic and political issues affecting the nurse as an individual and a professional, and health care delivery to clients, groups and aggregates. Consideration is given to self-discovery, personal assertiveness, role conflict, negotiation and collective bargaining. Students are encouraged to apply critical thinking strategies during classroom discussions and presentations.

NURS 4251 - Professional Nursing Issues I

2 sem. hrs. The first of four courses co-taught with an Art Professor, introduces and enhances student aesthetic knowing and expression. Students consider aspects of personal, ethical, empirical and aesthetic knowing as foundational to providing optimal healthcare across the lifespan. Foci include skills supporting expressions of aesthetics that highlight contemporary nursing issues such as ethical care, national health priorities, professional practice, and models of care.

NURS 4252 - Professional Nursing Issues II

2 sem. hrs. The second of four courses co-taught with an Art Professor, explores the integration of aesthetic knowing and expression within contemporary professional nursing. Students examine advocacy for patients, families and populations within 21st century healthcare while reflecting on topics such as self-care, work-life balance, healthy work environments, allostasis, and effective communication.

NURS 4254 - Professional Nursing Issues IV

2 sem. hrs. The final aesthetic knowing and expression course co-taught with an Art Professor considers allostasis in the creation of healing environments in dynamic sociopolitical, cultural, economic and technologic arenas. Students will be challenged to think about effective, efficient and entrepreneurial care consistent with the "Quadruple Aim".

NURS 4260 - Wellness and Health Promotion Across the Lifespan

2 sem. hrs. Introduction of core knowledge, concepts, and values fundamental to health promotion and nursing across the lifespan with diverse populations. Students explore the social determinants of health, levels of prevention, cultural competence, care

management, identity formation, health outcomes and leadership using an integrated framework of health care delivery.

NURS 4281 - Biobehavioral Care of Chronic Conditions Clinical

2 sem. hrs. Students design and provide holistic, evidence-based nursing care to individuals with chronic conditions across the lifespan and health care settings using an integrated framework of health care delivery with an emphasis on primary care settings. Students collaborate with members of the health care team to plan, implement and evaluate care provided to individuals and populations with chronic conditions.

NURS 4282 - Biobehavioral Health of Complex Conditions Clinical

2 sem. hrs. Students design and provide comprehensive holistic, evidence-based nursing care to individuals with complex health problems across the lifespan and health care settings using an integrated framework of health care delivery with an emphasis on primary care. Students collaborate with members of the health care team to plan, implement and evaluate the care provided to individuals with complex health problems.

NURS 4283 - Biobehavioral Health of the Family and Child Clinical

2 sem. hrs. Students design and provide holistic, evidence-based nursing care to the childbearing family as well as infants, children, and adolescents with chronic/unique conditions across health care settings using an integrated framework of health care delivery with an emphasis on primary care. Normal and deviations from normal pregnancy are explored in relation to labor, delivery, and post-partum care, care of the neonate, and assisting families with transitions to parenthood. Students collaborate with members of the health care team to plan, implement and evaluate care provided to the childbearing family, infants, children, and adolescents.

NURS 4284 - Biobehavioral Population Health Clinical

2 sem. hrs. Students design and provide holistic, evidence-based health promotion, risk reduction, and disease management in selected community settings using an integrated framework of health care delivery. Students collaborate with members of the health care team to plan, implement and evaluate care to promote health, reduce risk and manage care.

NURS 4318 - Nurse as Research Consumer -RN/BSN*

3 sem. hrs. (3:0) A study of theory and research as a base for nursing practice. Critical analysis of published research studies with regard to implications for clinical practice.

The course is planned for collaborative peer examination of the research process through critique of nursing studies. Pre/Co-requisite: MATH 1342, 1442, or 2342. The web-based version of this course (NURS 4318W01).

NURS 4318 - Nurse as Research Consumer*

3 sem. hrs. (3:0) Study of theory and research as a base for nursing practice. Critically analyzes published research studies with regard to implications for clinical practice. The course is planned for collaborative peer examination of the research process through critique of nursing studies. Prerequisite: MATH 1442, 1342, or 2342. The web-based version of this course (NURS 4318W01).

NURS 4320 - Principles and Concepts of Patient Education - RN/BSN*

3 sem. hrs. (3:0) Provides opportunities for students to apply principles of teaching and learning with clients, families and identified groups. Special emphasis is placed on patient teaching within a rapidly changing health care environment. Students will examine learning readiness and intervene with groups and families from diverse backgrounds and educational preparation.

NURS 4322 - Health Alterations - RN/BSN*

3 sem. hrs. (3:0) Relates manifestations of disease, risk factors for disease, and the principles of pathology underlying illness and injury to therapeutic nursing interventions and outcomes. Prerequisites: BIOL 2401 and BIOL 2402. Maybe taken in place of BIMS 3401 Pathophysiology.

NURS 4322 - Health Alterations*

3 sem. hrs. (3:0) Relates manifestations of disease, risk factors for disease, and the principles of pathology underlying illness and injury to therapeutic nursing interventions and outcomes. (Is a prerequisite for admission into the nursing program.) Prerequisites: BIOL 2401 and BIOL 2402. May be taken in place of BIMS 3401 Pathophysiology.

NURS 4324 - Nurse as Caregiver - RN/BSN*

3 sem. hrs. (3:0) Emphasis is on socialization into professional nursing. Theories are presented to explain the relationship between human behavior, health and illness and the impact of interpersonal relationship skills to effect positive changes in individuals. Application of caring theories as a basis for decision-making in nursing practice with clients and families is the focus of clinical activities.

NURS 4353 - Professional Nursing Issues III

3 sem. hrs. In the third of four aesthetic enriched courses, co-taught with an Art Professor, students gain aesthetic expression and knowledge related to interdisciplinary teamwork, team science collaboration, and innovative partnerships to advance solutions that address global, national, regional and local health challenges.

NURS 4361 - Biobehavioral Nursing Concepts I: Health Assessment and Foundations of Nursing Across the Lifespan

3 sem. hrs. Health Assessment and Foundations of Nursing Across the Lifespan (3 SCH): This course introduces students to concepts, behaviors, principles, and theories that provide the foundation for nursing practice. Student recognition of normal and abnormal health patterns using an integrated framework of health care delivery is emphasized.

NURS 4362 - Biobehavioral Nursing Concepts II: Population Health and Chronic Health Issues Across the Lifespan

3 sem. hrs. Population Health and Chronic Health Issues Across the Lifespan (3 SCH): Students integrate nursing and public health science to promote, protect, maintain and restore the health of populations using an integrated framework of health care delivery. Evidence-based interventions which are implemented with individuals/families, communities, and systems are explored, as are the unique health needs of vulnerable populations and measures to eliminate health disparities in a multicultural and global environment.

NURS 4363 - Biobehavioral Nursing Concepts III: Family and Child Health and Complex Health Issues Across the Lifespan

3 sem. hrs. Students learn about nursing care for the childbearing family and the importance of developmentally-appropriate family-centered nursing care for infants, children, and adolescents with acute and chronic health issues using an integrated framework of health care delivery.

NURS 4364 - Synthesis of Nursing Knowledge, Evidence and Practice

3 sem. hrs. In this course, students focus on implementing and evaluating an evidence-based practice project in conjunction with a clinical partner within primary care using an integrated framework of health care delivery. Students collaborate with leaders in practice settings to address a challenge using quality improvement initiatives.

NURS 4365 - Care of the Individual within a Family -RN/BSN*

3 sem. hrs. (2:3) Utilizes a health patterns framework with systematic nursing inquiry to examine the impact of illness on families. In addition, primary, secondary, and tertiary prevention activities are emphasized as they relate to individuals, families, and aggregates. Data from individual and family assessment is used to judge and design interventions and evaluate client(s) outcomes.

NURS 4370 - Nurse Coordinating Care*

3 sem. hrs. (2:3) This class provides a theoretical and experiential approach to identifying the coordinating role of the professional nurse within health care and its delivery. Current theories of management, leadership, and change are examined and related to nursing practice. Critical thinking is required in case analysis and student assessments of their own thinking, ideas and use of intellect.

NURS 4371 - Biobehavioral Nursing Interventions I: Health Assessment and Foundations of Nursing Across the Lifespan

3 sem. hrs. Health Assessment and Foundations of Nursing Across the Lifespan (3 SCH): This course focuses on developing health assessment, psychosocial, psychomotor, critical thinking, and therapeutic communication skills that are essential for nursing practice across the lifespan as well as the health and illness continuum.

NURS 4380 - Nursing Honors

3 sem. hrs. Provides superior nursing students who have demonstrated ability to function independently an opportunity to design and implement a creative learning experience in an area of interest. Prerequisites: Must be in last semester of senior year and meet eligibility requirements for nursing honors.

NURS 4390 - Dimensions in Nursing

1-3 sem. hrs. Focuses on literature study and in-depth knowledge of selected topics relevant to the nurse as a professional provider of care or coordinator of care. Variable content is directed by faculty specialties.

NURS 4396 - Directed Independent Study

1-3 sem. hrs. The College offers courses in directed independent study. The student must register for a specific number of credit hours according to a course plan approved by the Instructor, Undergraduate Chair, and the Dean in advance of registration.

NURS 4396 - Directed Independent Study RN/BSN

1-3 sem. hrs. The College offers courses in directed independent study. The student must register for a specific number of credit hours according to a course plan approved by the instructor, Undergraduate Chair, and the Dean in advance of registration.

NURS 4470 - Professional Transitions*

4 sem. hrs. (2:6) This capstone course focuses on the role of the developing professional nurse's ability to use evidence-based practice and quality standards to deliver safe holistic care to culturally diverse and complex clients and families. Emphasis is on the transition of the student nurse into a professional role which includes the ability to apply concepts related to leadership, interprofessional teamwork, informatics, and patient-centered care. Strategies for successful completion of the graduate licensure exam will be included.

NURS 4471 - Leadership/management - RN/BSN*

4 sem. hrs. (4:0) Uses a systems framework and critical thinking strategies to study the coordinating role of the professional nurse within health care delivery. Current theories of management, leadership and change are examined and related to nursing practice. Focuses on synthesis of this knowledge to develop innovative and creative approaches to nursing practice. Applies theoretical and empirical concepts through experiences gained in local health care institutions. Prerequisites: NURS 4318, 4324

NURS 4560 - Nursing Care of Community - RN/BSN*

5 sem. hrs. (3:6) Explores community health nursing, focusing on historical development, philosophy, health care systems, epidemiology, and individuals, families, and specific aggregate groups. Applies theoretical and empirical knowledge in using the nursing process in community settings to promote, maintain and restore health. Focuses on transcultural nursing concepts, rural and home health care delivery. Progressively more independent behaviors are expected of students in community health practice. Diverse roles of the community and public health nurse are examined and a community assessment is completed using research and data processing skills. Prerequisites: NURS 4318, 4324.

NURS 4564 - Nursing Care of Psychiatric Clients*

5 sem. hrs. (3:6) Focus is on the nurse as a provider of care to individuals, families and groups experiencing psychiatric-mental health problems. Theoretical foundations for the practice of psychiatric-mental health nursing will be studied. Application of nursing process to promote, maintain or restore mental health of individuals, families and groups.

During the clinical experience, students will demonstrate theory-based practice and collaboration with interdisciplinary team participants. Pre-Corequisite: NURS 3550, 3628

NURS 4586 - Interprofessional Collaborative Practice Clinical

5 sem. hrs. Students design and provide comprehensive holistic, evidence-based nursing care to individuals, families, and populations with acute, chronic, complex conditions across the lifespan and health care settings with an emphasis on the role of the registered nurse in primary care settings using an integrated framework of health care delivery.

NURS 4628 - Nursing Care of Adults II*

6 sem. hrs. (3:9) Presents to the senior student critical thinking and problem-solving strategies for care of adults with acute or complex illness and/or injury. The effects of acute illness are examined in relation to the individual's developmental stage, culture, and gender. Building on Nursing Care of Adults I, a systems approach is used to analyze and intervene in alterations to the health of the individual and family. The course includes clinical laboratory to allow the student the opportunity to integrate theoretical concepts and clinical practice in diverse populations. Pre-Corequisites: NURS 3550, 3548 and 3628

NURS 4660 - Nursing Care of Community Health Clients*

6 sem. hrs. (3:9) Explores Community Health Nursing, focusing on historical development, philosophy, health care systems, epidemiology, and specific target groups. Primary, secondary and tertiary prevention activities are emphasized as they relate to individuals, families, and aggregates. Applies theoretical and empirical knowledge in using the nursing process in community settings to promote, maintain and restore health. Focuses on transcultural nursing concepts, rural and home health care delivery. Progressively more independent behaviors are expected of students in community health practice. Diverse roles of the community and public health nurse are examined and a community assessment is completed using research and data processing skills. Prerequisites: NURS. 3614, 3318, 3435

NURS 4670 - Nurse Coordinating Care

6 sem. hrs. (3:9) Uses a systems framework and critical thinking strategies to study the coordinating role of the professional nurse within health care delivery. Current theories of management, leadership and change are examined and related to nursing practice. Focuses on synthesis of this knowledge to develop innovative and creative approaches to nursing practice. Applies theoretical and empirical concepts through supervised

experiences gained in local health care institutions. Students will participate in several activities that demonstrate their understanding of leadership principles applied to nursing in their classroom and clinical course work. Prerequisites: NURS 4564, Pre-Corequisites: NURS 4318, 4628.

Operations Management

OPSY 4314 - Operations Management*

3 sem. hrs. The design, operation, and control of the transformation process in both service and production operations. Includes analysis and application of various decisions regarding site selection, process and facilities design, capacity planning, scheduling techniques, materials management, and cost and quality control. Prerequisites: ECON 2301, ECON 2302, ORMS 3310 and Junior standing or above.

OPSY 4345 - Materials Management and Purchasing

3 sem. hrs. Management of ordering, storage and distribution of the materials and services purchased by the organization. Emphasis on skill and knowledge required in the practice of purchasing, inventory management and cost reduction in materials. Prerequisite: OPSY 4314 and Junior standing or above.

OPSY 4390 - Current Topics in Operations Management

3 sem. hrs. Selected topics for special study related to operational functions, processes, or issues. May be repeated for credit when topics vary. Prerequisites: Junior standing or above, and others depending on topic. Contact the Dean's office for information.

OPSY 4396 - Directed Individual Study

3 sem. hrs. Individual supervised study and a final report. Prerequisites: permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

Operations Research/Management Science

ORMS 3310 - Data Analysis and Statistics*

3 sem. hrs. A study of descriptive statistics, probability distributions, the normal distribution, confidence intervals and hypothesis testing, regression analysis and chi-square. Prerequisites: BUSI 0011, MATH 1314 and MISY 2305 or equivalents.

Philosophy

PHIL 1301 - Introduction to Philosophy

3 sem. hrs. An examination of major philosophical issues such as the existence of God, freedom and determinism, moral rights and obligations, and the nature and limits of human knowledge. TCCNS Equivalent: PHIL 1301 Meets the University Core Curriculum requirement for the Language, Philosophy, and Culture foundational component area.

PHIL 2303 - Introduction to Logic and Critical Thinking

3 sem. hrs. Basic principles and techniques used in understanding, constructing, and evaluating arguments. Topics covered may include formal methods of analyzing arguments, informal fallacies, scientific reasoning, and moral arguments. TCCNS Equivalent: PHIL 2303 Meets the University Core Curriculum requirement for the Mathematics foundational component area.

PHIL 2306 - Introduction to Ethics

3 sem. hrs. 1.5:1.5 This course includes a study of ethical theories and principles, and application of those theories and principles to ethical issues. I It may be used to satisfy the University Core Curriculum requirement in the Language, Philosophy and Culture foundation component area.

PHIL 3306 - History of Eastern Philosophy I

3 sem. hrs. An historical and critical examination of traditional Indian philosophical and religious systems (such as various versions of Hinduism, Jainism, and Buddhism) and their relevance for contemporary people and societies.

PHIL 3307 - History of Eastern Philosophy II

3 sem. hrs. A historical and critical examination of some of the philosophical and religious systems developed in China, Tibet, and Japan (such as various schools of Mahayana Buddhism, Taoism, Confucianism, and Zen Buddhism).

PHIL 3327 - American Philosophy

3 sem. hrs. An introduction to American philosophy and the influential movement known as Pragmatism. The course focuses on the works of C.S. Peirce, William James, John Dewey, and George Santayana. Issues addressed include skepticism, the rejection of

foundationalism, the role of belief in inquiry, verification and meaning, and the nature of truth.

PHIL 3342 - Philosophy of Love and Sex

3 sem. hrs. This course is a study of the ethics of human relationships. Topics include friendship, romance, marriage, sexual orientation, adultery, promiscuity, sexual consent, sexual harassment, rape, pornography, and prostitution.

PHIL 3343 - Philosophy of Law

3 sem. hrs. lecture An introduction to philosophical issues concerning the law, such as the nature of law, relations between law and morality, theories of legal responsibility, and the role of law in society.

PHIL 3344 - Social and Political Philosophy

3 sem. hrs. lecture A survey of classical and contemporary material in social and political philosophy, covering topics such as individual liberty and government intervention, the role of government, and social justice.

PHIL 3345 - The Meaning of Life

3 sem. hrs. An exploration of a variety of views concerning the meaning of life. Three kinds of responses to the question of life's meaning will be examined: theistic responses; non-theistic responses focusing on the creation of personal meaning within a natural universe; and responses that challenge the intelligibility of the question regarding the meaning of life.

PHIL 3346 - Elementary Formal Logic

3 sem. hrs. A course on technical methods and foundational issues in Philosophy, Computer Science, and Mathematics. Topics include the Propositional Calculus, First-Order Predicate Calculus, meta-theoretic results (such as consistency, soundness, completeness, and decidability), and Zermelo-Fraenkel Set Theory.

PHIL 3347 - Philosophy and Science Fiction

3 sem. hrs. An exploration of issues in contemporary philosophy such as the nature of life, personhood and self, knowledge and skepticism, time travel, and obligations to the non-human world. The course combines the reading of purely philosophical works with

an examination of contemporary works of science fiction (including novels, short stories, and films).

PHIL 3348 - Ethics, War, and Terrorism

3 sem. hrs. Why is it wrong to kill? Is killing an innocent person ever justified? Under what conditions can we justify war? How should we respond to terrorist threats? The course explores ethical theories in application to these and similar issues.

PHIL 4303 - Minds and Machines

3 sem. hrs. A study of the relationship of the mental to the physical as it pertains to the foundations of psychology, artificial intelligence, and robotics.

PHIL 4304 - Metaphysics

3 sem. hrs. An examination of issues in contemporary metaphysics, such as freedom of the will and determinism, the nature of causation, the mind-body problem, and the existence of abstract and concrete entities.

PHIL 4305 - Truth, Knowledge, and Justification

3 sem. hrs. In this course, we will discuss the following questions among others: What is the nature of truth? Should truth be understood as correspondence with reality? What is it to know something? Is knowledge of the external world possible at all? Can I conclusively rule out the possibility that I might be dreaming right now, or that I might be just a brain in a vat? Are there any privileged beliefs that can be said to constitute the foundation for all of our knowledge? Are the standards for rationality and justification absolute or rather relative to cultural norms? Can there be rational disagreement between equally intelligent people who share the same body of evidence? Online Classification: Face-to-Face No Web.

PHIL 4321 - Ancient Philosophy

3 sem. hrs. A survey of the ancient Western philosophical tradition, including the Presocratics, Plato, Aristotle, and the Hellenistic Philosophers.

PHIL 4322 - Modern Philosophy

3 sem. hrs. A study of some of the major philosophical developments of the 17^{th}-20^{th} centuries, focusing on topics such as the relation between mind and body, religious belief and the problem of evil, rationalism and empiricism, and the limits of human knowledge.

PHIL 4323 - Contemporary Philosophy

3 sem. hrs. lecture A course on important trends in contemporary philosophy beginning with the Fregean linguistic turn, and examining the major works of philosophers such as Frege, Russell, Wittgenstein, Quine, Davidson, Dummett, Putnam, Kripke, and Lewis.

PHIL 4330 - Philosophy and History of Science and Technology

3 sem. hrs. An exploration of important issues concerning the natural and formal sciences from the standpoint of historical disputes and technological advances. Issues include the nature of science and of scientific progress, the justification of scientific theories, the possibility of objective knowledge of the world, the distinction between science and pseudo-science, and the relationship between faith and science.

PHIL 4331 - Issues in Philosophy of Religion

3 sem. hrs. Standard philosophical methods will be used to explore issues such as the existence and nature of God, the problem of evil, and the relationship between morality and religion.

PHIL 4332 - Moral Issues in Contemporary Medicine

3 sem. hrs. An examination of moral issues that arise in medicine, focusing on topics such as euthanasia, genetic interventions, medical research involving vulnerable subjects, and the distribution of medical resources.

PHIL 4333 - Environmental Ethics

3 sem. hrs. An examination of our ethical obligations with respect to animals, plants, and environmental systems, and of the foundations of environmental law and policy. Can be cross listed with ESCI 4490, BIOL 4590 or BIMS 4590.

PHIL 4335 - Moral Philosophy

3 sem. hrs. lecture A study of moral theories, and of moral issues such as whether morality is subjective, whether there are moral facts, and the justification of practices such as capital punishment and abortion.

PHIL 4336 - Advanced Seminar in Philosophy

3 sem. hrs. In-depth exploration of philosophical topics, designed for philosophy majors, with emphasis on student research and presentations.

PHIL 4337 - Philosophy of Language

3 sem. hrs. lecture A philosophical investigation into the nature of language. Topics include meaning, truth, theories of mediated reference, theories of direct reference, and speech acts.

PHIL 4390 - Topics in Philosophy

3 sem. hrs. Study of important philosophical themes and figures. May be repeated for credit when topics vary. Topics may include, for example, Minds and Machines, Eastern Philosophy, Ancient Philosophy, Environmental Ethics, American Philosophy, and Moral Issues in Contemporary Medicine.

PHIL 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

Physics

PHYS 1401 - General Physics I

4 sem. hrs. (3:3) Introduction to Newtonian physics. Topics include Aristotelian physics and its overthrow, Newton's laws of motion and gravitation, and the motion of particles, rigid bodies and fluids. The idea of the universe as a law-governed system will be developed. Laboratory activities provide introduction to empirical methods in science. Prerequisites: Both MATH 1314 - College Algebra and MATH 1316 - Trigonometry or MATH 2413 - Calculus I (or higher). Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 1401 This course counts toward the natural science component of University Core Curriculum. Offered every Fall, Spring, Summer.

PHYS 1402 - General Physics II

4 sem. hrs. (3:3) Introduction to oscillatory and wave phenomena, electricity and magnetism. The classical theory of fields will be used to study electric and magnetic phenomena, including light, and their role in modern technology. Laboratory activities provide introduction to empirical methods in science. Prerequisite: PHYS 1401 or PHYS 2425. Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every

semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 1402 This course counts toward the natural science component of University Core Curriculum. Offered Fall, Spring, Summer.

PHYS 2425 - University Physics I

4 sem. hrs. (3:3) A calculus based introduction to Newtonian physics. Topics include Aristotelian physics and its overthrow, Newton's laws of motion and gravitation, and the motion of particles, rigid bodies, and fluids. The idea of the universe as a law-governed system will be developed. Laboratory activities provide introduction to empirical methods in science. Prerequisite: MATH 2413 or placement beyond MATH 2413. Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 2425 This course counts toward the natural science component of University Core Curriculum. Offered every Fall, Spring, Summer.

PHYS 2426 - University Physics II

4 sem. hrs. (3:3) Calculus based introduction to oscillatory and wave phenomena, electricity and magnetism. The classical theory of fields will be used to study electric and magnetic phenomena, including light, and their role in modern technology. Prerequisites: PHYS 2425 and MATH 2414 (or placement beyond MATH 2414). Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. TCCNS Equivalent: PHYS 2426 This course counts toward the natural science component of University Core Curriculum.Offered every Fall, Spring, Summer.

PHYS 3331 - Mechanics I^

3 sem. hrs. (3:0) Fundamentals of classical mechanics. Topics include particle dynamics in one, two and three dimensions: conservation laws; dynamics of a system of particles; motion of rigid bodies; central force problems; accelerating coordinate systems; Newton's theory of gravitation; Lagrange's and Hamilton's formulations of classical mechanics.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 2426. Corequisite: MATH 3315.

Offered every Fall.

PHYS 3332 - Electromagnetism^

3 sem. hrs. (3:0) Electrostatics; Laplace's equation; the theory of dielectrics; magnetostatic fields; electromagentic induction; magnetic fields of currents; Maxwell's equations.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 2426 - University Physics II Corequisites: MATH 3315 - Differential Equations OR MATH 2415 - Calculus III.

Offered every Fall.

PHYS 3333 - Thermodynamics^

3 sem. hrs. (3:0) Concept of temperature, equations of state; the first and the second law of thermodynamics; entropy; change of phase; the thermodynamics functions.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 2426 - University Physics II Corequisite: MATH 2415 - Calculus III

Offered every Fall.

PHYS 3334 - Modern Physics I^

3 sem. hrs. (3:0) A course in special relativity and elementary quantum mechanics. Topics include relativistic description of space-time, relativistic energy and momentum, the uncertainty principle, Schrödinger's equation, observables and operators, bound states, potential barriers, and the quantum description of the hydrogen atom.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 2426 . Corequisite: MATH 3315.

Offered every Fall, Spring.

PHYS 3490 - Selected Topics^

1-4 sem. hrs. Subject materials will be chosen from Electromagnetic Field Theory, Thermodynamics, Mathematical Methods of Physics, Waves and Optics, Advanced Modern Physics, Quantum Theory, Computational Physics, Geophysics, Environmental Physics and Medical Physics. May be repeated for credit if topics selected are different.

This course will be used for upper-level physics electives offered from other Texas Physics Consortium (TPC) schools. See their website (http://www.tarleton.edu/tpc/) for details. Prerequisites vary. Instructor's permission required.

Offered every Fall, Spring.

PHYS 4161 - Physics Research Project^

1 sem. hrs. (1:0) The first half of a two semester sequence. The student will work with a faculty member to develop and conduct a senior research project including a search of the relevant literature and presentation of the proposed research idea.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 3334 - Modern Physics I^

Offered every Fall.

PHYS 4162 - Physics Research Seminar^

1 sem. hrs. (1:0) The second half of a two semester sequence. The student will work with a faculty member to conduct a senior research project including giving an oral presentation of the final results and writing up the results in a form suitable for publication.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 4161 - Physics Research Project^

Offered every Spring.

PHYS 4330 - Mathematical Methods for Physicists^

3 sem. hrs. (3:0) Mathematical techniques from the following areas: infinite series; integral transforming; applications of complex variables; vectors, matrices, and tensors; special functions; partial differential equations; Green's functions; perturbation theory; integral equations; calculus of variations; and groups and group representatives.

This course offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Corequisite: MATH 3315 - Differential Equations.

Offered every Spring.

PHYS 4335 - Quantum Physics^

3 sem. hrs. (3:0) The Schroedinger equation; one dimensional systems; the Heisenberg uncertainty principle; magnetic moments and angular momentum; two and three dimensional systems; approximation methods; spin.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 3334 - Modern Physics I^ Corequisite: MATH 3315 - Differential Equations OR MATH 2415 - Calculus III.

Offered every Fall.

PHYS 4337 - Nuclear Physics^

3 sem. hrs. (3:0) The study of nuclear phenomena and properties including mass, stability, magnetic moment, radioactive decay processes and angular momentum. The use of nuclear techniques as applied to other scientific fields including electronics and medicine.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Prerequisite: PHYS 3334 - Modern Physics I^ Corequisite: PHYS 4335 - Quantum Physics^ Additional Corequisite: MATH 3315 - Differential Equations OR MATH 2415 - Calculus III.

Offered every Spring.

PHYS 4340 - Advanced Physics Lab^

3 sem. hrs. (2:3) A laboratory course focusing on experimental design, advanced data analysis and reduction, and experimental laboratory techniques and instrumentation. Experiments will be drawn from a variety of physics areas.

This course is offered through the Texas Physics Consortium (TPC). See their website (http://www.tarleton.edu/tpc/) for details. Corequisite: PHYS 3334 - Modern Physics I^. Corequisite: SMTE 0095 - Physics Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course.

Offered every Spring.

PHYS 4496 - Directed Independent Study

1-4 sem. hrs. Requires a formal proposal of study to be completed in advance of registration and to be approved by the supervising faculty, the Chairperson, and the Dean of the College. Offered upon sufficient demand.

Political Science

POLS 2304 - Introduction to Political Science

3 sem. hrs. Introductory survey of the discipline of political science focusing on the scope and methods of the field, and the substantive topics in the discipline including the theoretical foundations of politics, political interaction, political institutions and how political systems function. TCCNS Equivalent: GOVT 2304 Introduction to Political Science Online Classification: Face-to-Face 1-24%

POLS 2305 - U.S. Government and Politics*^

3 sem. hrs. A basic survey of American government, including fundamental political institutions, with special attention to the United States and Texas Constitutions. TCCNS Equivalent: GOVT 2305 Meets the University core requirement and the Texas state statutory requirement for U.S. and Texas constitutions

POLS 2306 - State and Local Government*^

3 sem. hrs. The politics, government, and administration of American states, counties, cities, and special districts, with special emphasis on Texas. TCCNS Equivalent: GOVT 2306 Meets the University core requirement and the Texas state statutory requirement for U.S. and Texas constitutions

POLS 2311 - Mexican American and Latinx Politics

3 sem. hrs. The study of Mexican American and Latinx politics within the American political experience. Topics include historical, cultural, socioeconomic, and constitutional issues that pertain to the study of Mexican Americans and other Latinx populations in the United States. Other topics such as political participation, governmental institutions, electoral politics, political representation, demographic trends, and other contemporary public policy debates will also be addressed. TCCNS Equivalent: GOVT 2311 Mexican American and Latinx Politics Face-to-Face 1-24%.

POLS 3303 - Contemporary Political Analysis

3 sem. hrs. Analysis of current problems in national and international politics. Emphasis is on methods of analysis, particularly the use of computers. Includes a segment on career opportunities for political science majors.

POLS 3311 - Women and Politics

3 sem. hrs. The course will examine public policies affecting women, political participation, women in public office, and political attitudes of women.

POLS 3312 - Campaigns and Elections

3 sem. hrs. A survey of the literature on campaigns and elections including theories of voter choice; effects of mass media and campaign finance regulations on the conduct and outcome of elections; effects of elections on policy; emphasis on U.S. national elections.

POLS 3313 - The Legislative Process

3 sem. hrs. Survey and description of the legislative process in the United States Congress with relevant comparisons to practices within the several states and foreign nations. Emphasis upon the law-making process explained in terms of structure, participants, groups, associations and power relationships.

POLS 3314 - Public Opinion

3 sem. hrs. An analysis of the kinds and distributions of opinions and attitudes in the mass public and the effects of those opinions on activities of policy makers, with special attention to problems of linking public opinion to public policy.

POLS 3315 - Political Parties

3 sem. hrs. Organization, history, and activities of political parties and functions they serve in national, state, and local politics in the United States and elsewhere.

POLS 3316 - The American Presidency

3 sem. hrs. A study of the federal executive branch with an emphasis upon the American Presidency with its relationships to other American political institutions and processes. Suggested background POLS 2305.

POLS 3317 - Judicial Politics

3 sem. hrs. This course examines the political factors that influence judicial selection, decision-making and the policy-making role of courts. Furthermore, attention is directed at the impact of court decisions and the structure of the judiciary.

POLS 3318 - Interest Groups

3 sem. hrs. lecture Role of interest groups in politics: types of groups and resources; internal dynamics; group strategies/tactics (including PACs); forms of indirect and direct lobbying; influence of groups in the political arena.

POLS 3319 - Religion and Politics

3 sem. hrs. The course will examine the intersection of religion and politics historically and during contemporary times with an emphasis on beliefs, behaviors, institutions, and policies.

POLS 3321 - Comparative Politics

3 sem. hrs. Concepts, theories and analytical frameworks for comparing different types of political systems around the world. Emphasis is placed on learning about different political systems and using the comparative method to evaluate and develop a richer understanding of politics, political culture, political behavior, and political institutions.

POLS 3331 - International Relations

3 sem. hrs. Examination of the structure and function of the international system focusing on the power relationships among states, international organizations, and the critical issues animating contemporary international relations.

POLS 3341 - Introduction to Public Administration

3 sem. hrs. Study of organization and management theories and practices of public administration affecting federal and subnational governments. Bureaucratic structures and procedures will be examined for their effects on policy, program development and evaluation.

POLS 3342 - Introduction to Public Policy

3 sem. hrs. A survey of the policy process in the United States. The course will examine factors affecting the development, implementation and impact of public policies as well as a discussion of policy alternatives and controversies.

POLS 3343 - Bureaucracy

3 sem. hrs. lecture Examines the concept of the political role of the bureaucracy and the impact of other government institutions on bureaucratic structures, functions and behavior. The role of bureaucracy in public policy making and the influence of politics on implementation is analyzed.

POLS 3351 - U.S. Constitution and Federalism

3 sem. hrs. The course will examine the development of the U.S. Constitution since 1789 through legal decisions and interpretations. The development, evolution, and interpretations of federalism are also addressed. (Note: This course will complete the Texas Teacher Certification requirement in government for those who already have three semester hours in U.S. Government and need three additional semester hours that include the government and constitution of Texas.)

POLS 3361 - Western Political Theory

3 sem. hrs. The fundamental concepts and problems of political theory, as viewed by the major classical philosophers and contemporary theorists, including justice, power, authority, obligation, freedom, equality.

POLS 3365 - Political Theory and Ideologies

3 sem. hrs. Major 19th and 20th-Century political theorists and ideological movements. Includes a review of capitalism, socialism, fascism, and liberalism.

POLS 4303 - Seminar in Political Science

3 sem. hrs. Capstone course for political science majors, examines significant developments and issue in American politics as they are addressed in the professional literature of political science. Offers the opportunity of an intensive study of as selected topic. Emphasis on supervised research on selected topic. Prerequisite: POLS 3303.

POLS 4311 - Urban Politics

3 sem. hrs. The institutions, political processes and policy issues of urban areas of the United States.

POLS 4312 - Government Budgeting and Finance

3 sem. hrs. Study of the politics and processes of governmental budgeting at local, state, and federal levels with emphasis on the interrelatedness of governmental units through budgeting.

POLS 4314 - Media and Politics

3 sem. hrs. Impact of mass media coverage on American political institutions, the election process, and public opinion in general and the appropriate role of media and news in a society.

POLS 4320 - The Politics of the European Union

3 sem. hrs. Examination of the institutional, economic and political forces that led to the creation and development of the European Union. Emphasis on the impact the European Union has had on world affairs.

POLS 4321 - Comparative Politics of Developing Nations

3 sem. hrs. lecture Analysis of contemporary issues within and amongst developing nations. Examines various institutions, political processes, and public policy debates in some or all of the following regions: Africa, Latin America, the Middle East, or Asia.

POLS 4322 - Transitions to Democracy

3 sem. hrs. Analysis of transitions to democracy from authoritarian rule. Various stages of the transition process and theories of democratization are assessed. Emphasis will be placed on "third wave" transitions to democracy.

POLS 4325 - Politics in Latin America

3 sem. hrs. Latin American governments and politics as related to such topical problems and processes as land reform and expropriation.

POLS 4327 - The Politics of War

3 sem. hrs. This course will examine the politics of war from ancient times to the present. Included in this survey are great generals and military strategists, from Sun Tzu to Napoleon to generals of the American Civil War. Students will study concepts of international law, the law of nations, and the laws of war. The course further examines military strategy and tactics of the 20th century.

POLS 4361 - American Political Thought

3 sem. hrs. A survey of the major developments in American political thought from the Colonial period to the present, followed by an analysis of important recent theoretical developments in American political thought.

POLS 4390 - Topics in Political Science

3 sem. hrs. May be repeated for credit when topic varies.

POLS 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

Portuguese

PORT 2315 - Portuguese for Spanish Speakers

3 sem. hrs. This course is designed specifically for students with no previous knowledge of Portuguese, but who already speak Spanish. It provides Spanish-speaking students with an opportunity to develop Portuguese language skills, assisted by their knowledge of the Spanish language. The course will also emphasize several aspects of the Portuguese-speaking countries, such as food, music, and history.

PORT 2317 - Language and Culture in Brazil

3 sem. hrs. This course is aimed at developing listening, speaking, reading and writing skills at an intermediate level and within a Brazilian cultural framework. The student will develop the ability to function in natural contexts, convey and understand messages with reasonable accuracy, and carry on more elaborate conversation in Portuguese. The course will also emphasize several aspects of Brazil and other Portuguese-speaking countries, such as history, politics and the struggle for the rights of minorities. Prerequisite: PORT 2315 or instructor permission.

Psychology

PSYC 2301 - General Psychology*

3 sem. hrs. An introduction to the fundamental concepts and theories in psychology. Topics include biological processes, development, learning, personality, abnormal behavior, therapy, and social interactions. TCCNS Equivalent: PSYC 2301 This course satisfies the University core requirement in social science.

PSYC 2314 - Lifespan Developmental Psychology*

3 sem. hrs. The study of normal physical, cognitive, social, and emotional development from infancy to late adulthood. Pre-req: PSYC 2301. TCCNS Equivalent: PSYC 2314

PSYC 2319 - Social Psychology*

3 sem. hrs. The scientific study of how a person's thoughts and behavior are influenced by others. Topics will include social cognition, attitudes, persuasion, interpersonal relationships, and group behavior. (Credit may not be given for both this course and SOCI 2326.) Cross listed with SOCI 2319. Pre-req: PSYC 2301. TCCNS Equivalent: PSYC 2319/SOCI 2326

PSYC 2390 - Topics in Psychology

3 sem. hrs. This is a lower-level special topics course. Various topics, which will change from semester to semester, are presented by Psychology department faculty. They cover topics of special interest which will not be made a regular on-going part of the curriculum. May be repeated for credit. Pre/Co-requisite: PSYC 2301. Online Classification: Face-to-Face 1-24%

PSYC 3325 - Close Relationships

3 sem. hrs. This course is designed as an overview to the field of close relationships. The major theories of close relationships will be emphasized, including examinations of evolutionary, attachment, interdependence, and cognitive approaches. Additional topics include attraction, relationship development and maintenance, infidelity, and relationship violence. Pre-req: PSYC 2301.

PSYC 3335 - Forensic Psychology

3 sem. hrs. This course examines the relationship between the practice of psychology and the functioning of the legal system. The course surveys many aspects of clinical forensic psychology, including assessment, treatment, and consultation services. Pre-req: PSYC 2301.

PSYC 3342 - Cognitive Psychology*

3 sem. hrs. A survey of current research and theory in the field of human cognition, emphasizing the information processing model. Topics include attention, memory, language, and problem solving. Pre-req: PSYC 2301. Online classification: Face-to-Face 1-24%.

PSYC 3343 - Learning and Behavior*

3 sem. hrs. The study of the fundamental principles of learning through a consideration of theories and constructs, such as associations, reinforcement, punishment, generalization, discrimination, and modeling. Pre-req: PSYC 2301. Online classification: Face-to-Face 1-24%.

PSYC 3346 - Psychology of Language

3 sem. hrs. The purpose of the course is to introduce students to a multidisciplinary study of language. This course will provide an introduction to psychological, sociolinguistic, and social-interactive theories of language use, acquisition/development, knowledge, context, perception, disorders, and related cognitive and social processes. Pre-req: PSYC 2301. Online classification: Face-to-Face 1-24%.

PSYC 3350 - Evolutionary Psychology

3 sem. hrs. Evolutionary psychologists argue that much of human behavior is the output of neural and psychological adaptations that evolved to solve recurrent problems in human ancestral environments. Some challenges addressed in this course involve survival, mating, familial relationships, and living in social groups. Pre-req: PSYC 2301.

PSYC 3360 - Health Psychology*

3 sem. hrs. This course will provide an overview of the field of health psychology, examining how psychological theories and research are applied to enhance health and well-being and to prevent and treat illness. Pre-req: PSYC 2301.

PSYC 3361 - Psychology of Personality*

3 sem. hrs. An introduction to major theories of personality. Personality processes and development are discussed from psychoanalytic, behavioral, humanistic, and other perspectives. Pre-req: PSYC 2301.

PSYC 3363 - Abnormal Psychology*

3 sem. hrs. An introduction to the study of abnormal behavior. Studies the etiology and characteristics of the major behavioral disorders, including current research findings and treatment practices. Competency in personality psychology, such as that obtained by completing PSYC 3361, is assumed for this course. Pre-req: PSYC 2301.

PSYC 3370 - Psychology of Religion

3 sem. hrs. This course examines religious experience and behavior from a psychological perspective. Topics include historical and theoretical perspectives, development of religious beliefs across the lifespan, religious conversion, social and group experiences, and the varieties of religious belief. Pre-req: PSYC 2301.

PSYC 3374 - Human Sexuality*

3 sem. hrs. The study of human sexual behavior from a biological and psychosocial perspective. Emphasizes current research methods and findings. Pre-req: PSYC 2301.

PSYC 3375 - Introduction to Clinical Psychology

3 sem. hrs. A survey of diagnostic and therapeutic strategies employed by clinical psychologists. The scientist-practitioner model is emphasized through the critical analysis of theories and empirical research that provide the foundation for determining effective treatments of mental disorders. Pre-req: PSYC 2301.

PSYC 3411 - Experimental Psychology*

4 sem. hrs. An introduction to the methods of scientific experimentation in psychology. Skills to critically analyze journal articles, design experiments, collect and analyze data, and write reports in APA style will be developed. Students are required to enroll in a laboratory section of this course. The laboratory component of this course offers applications of the principles discussed in the large lecture. Prerequisites: PSYC 2301 and MATH 1442 or its equivalent.

PSYC 4309 - History and Systems of Psychology*^

3 sem. hrs. A study of the development of modern psychology through an examination of major philosophic, scientific, and social-political antecedents. Contemporary positions are discussed within the context of broader theoretical frameworks. Prerequisite: PSYC 2301. Online Classification: Face-to-Face 1-24%.

PSYC 4310 - Psychology Capstone Seminar*

3 sem. hrs. All TAMU-CC Psychology students take a Capstone course in order to graduate. The Psychology Capstone Seminar, the final and required class that completes the Psychology curriculum, provides an opportunity for senior Psychology majors to demonstrate comprehensive learning in Psychology through intensive, integrative work on a specific topic in Psychology at an advanced level. The goal is to provide an enriching and culminating experience at the end of each student's undergraduate education. Core components of the Capstone courses include reading and discussing peer-reviewed and primary source work, completing a final project, and presentations of ongoing and final projects. Prerequisite: PSYC 2301 and PSYC 3411 (Experimental Psychology). Online Classification: Face-to-Face 1-24%

PSYC 4332 - Cross-cultural Psychology*

3 sem. hrs. This course is designed to provide students with both a theoretical and a practical understanding of the effects of culture on human thinking, values, and behavior. As such, it is focused on the effects of culture on the nature and behavior of individuals, their adaptations to institutions and environments, and their relations with others within and outside their culture. Knowledge presented in the class is drawn from both qualitative and quantitative research. Pre-req: PSYC 2301.

PSYC 4344 - Drug Use and Abuse

3 sem. hrs. Study of the physiological, psychological, and social effects of drug use and abuse. Following a review of basic neuroanatomy and pharmacology, the actions and known effects of specific drugs of use and abuse will be examined. Treatments and prevention issues related to substance abuse will also be discussed. Pre-req: PSYC 2301.

PSYC 4352 - Physiological Psychology*

3 sem. hrs. This course is an introduction to the physiological mechanisms that underline behavior with emphasis on the nervous, the endocrine and sensory systems. Prerequisites: PSYC 2301 - General Psychology*. Online Classification: Face-to-Face 1-24% and Fully Online.

PSYC 4354 - Sensation and Perception*

3 sem. hrs. Basic sensory processes as they relate to the sensory experience and to the construction of our conception of physical reality. Pre-req: PSYC 2301. Online Classification: Face-to-Face 1-24% & Fully Online.

PSYC 4367 - Gender Issues in Psychology

3 sem. hrs. This course is designed to introduce the undergraduate student to the theoretical and empirical issues related to the psychology of gender. Both traditional and contemporary theories that focus on the unique aspects in the psychological development of women as well as men will be examined. Pre-req: PSYC 2301.

PSYC 4372 - Psychological Testing

3 sem. hrs. Statistical and research basis for test construction. Instruction in use of group and individual tests in intelligence, achievement, interest and personality. Understanding of individual measures in these areas. Prerequisites: PSYC 2301 and MATH 1442 or its equivalent.

PSYC 4377 - Industrial/Organizational Psychology

3 sem. hrs. This course will provide an Introduction to Industrial and Organizational Psychology, a scientific discipline that studies human behavior in the workplace. Topics will include the history of Industrial/Organizational psychology, job analysis, psychological assessments, personnel decisions, training and development, organizational change, teamwork, motivation, leadership and work stress and health. Prerequisite: PSYC 2301. Face-to-Face 1-24%.

PSYC 4390 - Topics in Psychology

3 sem. hrs. May be repeated for credit when topics vary. Pre-req: PSYC 2301.

PSYC 4395 - Undergraduate Research

3 sem. hrs. A research project in psychology designed in consultation with a faculty director. The study is to be conducted by the student under the supervision and direction of the faculty member and may culminate in a formal report written in APA journal style. Pre-req: PSYC 2301. Offered by application.

PSYC 4396 - Directed Individual Study*

1-3 sem. hrs. See College description. Pre-req: PSYC 2301. Offered by application.

PSYC 4398 - Applied Experience*

3 sem. hrs. See College description. Pre-req: PSYC 2301. Offered by application.

Reading Education

READ 0399 - Basic Reading and Comprehension

3 sem. hrs. This is a reading course for students who need assistance in developing college level reading skills. Emphasis will be on improving reading comprehension, critical reasoning skills, recognition of the organization of ideas in written material, study skills and vocabulary development. The Higher Education Assessment (THEA) reading skills will be covered. Required for THEA liable undergraduate students. (Not counted toward graduation.) Course fee required.

READ 3310 - Principles and Practices of Early Reading Instruction

3 sem. hrs. This course explores theories of early language and literacy development of children. Course content addresses language development and literacy concepts essential for pre-reading areas, such as phonemic awareness, oral language development, listening

comprehension development, and alphabetic knowledge. The course explores ways educators can enhance language and literacy concepts utilizing art, music, and drama. READ 3310 emphasizes development of emergent literacy skills that lead to literacy skills taught in READ 3320.

READ 3320 - Principles and Practices of Reading Instruction

3 sem. hrs. The purpose of this course is to provide the preservice teacher with a solid foundation for effective literacy instruction. This course will review research-based teaching strategies, instructional materials for phonics, vocabulary, fluency, and comprehension will as methods and assessments for efficacious literacy instruction. The primary focus of course content will be on core (tier 1) classroom instruction with discussions of differentiated instruction and frameworks for responsive intervention also addressed. The targeted grade levels for this course are third through sixth grade.

READ 3321 - Principles and Practices of Reading Instruction, Grades 4 – 8

3 sem. hrs. This course will emphasize materials, methods, and beliefs for teaching reading in grades 4-8. Components of the course will include but not be limited to the five pillars of reading instruction identified by the National Reading Panel (2000): phonemic awareness, phonics, fluency, vocabulary, and comprehension.

READ 3351 - Reading Assessment and Intervention

3 sem. hrs. This course is an introduction to utilizing formal and informal reading assessments and intervention strategies in a classroom setting. Students will administer assessments in the areas of phonemic awareness, phonics, fluency, vocabulary, and comprehension. Students will then select and adapt appropriate scientifically proven instructional strategies, based upon assessment results, for working with readers of varying abilities and implement these through actual lessons. Prerequisite: READ 3310 & READ 3320, or READ 3353.

READ 3352 - Content Area Reading for Elementary Students

3 sem. hrs. This course focuses on recent issues, materials, methods, and strategies considerred essential for effective reading instruction in the elementary school content areas. Components of the course will include comprehension strategies, vocabulary development, reading-writing connections, and word study. The course will also include but not be limited to the five pillars of reading instruction identified by the National Reading Panel (2000): phonemic awareness, phonics, fluency, vocabulary, and comprehension. Prerequisite: READ 3310 and READ 3320.

READ 3353 - Content Area Reading for Secondary Students^

3 sem. hrs. The skills required of secondary students to deal with subject matter in the various content areas are presented. In addition, developmental and corrective processes that incorporate the identification and remediation of dyslexia and other reading disorders are presented.

READ 3355 - Teaching Reading in the Secondary School

3 sem. hrs. This course focuses on planning, developing, selecting, and organizing reading materials for secondary reading instruction. Prerequisite: READ 3353.

READ 3356 - Technology and Literacy

3 sem. hrs. Various software packages that have been developed for providing initial and tutorial instruction in the language arts are presented. In addition, instructional techniques for using these packages are covered. Prerequisites: READ 3320 and READ 3321.

READ 3380 - Children's and Adolescents' Literature

3 sem. hrs. Provides students with an understanding of children's and adolescent literature. Included in the class is the reading and study of literature and how to promote reading of literature in the schools. Extensive reading is required.

READ 4352 - Advanced Practices in Reading/ Language Arts

3 sem. hrs. The emphasis is on instructional approaches supported by current theory and research and supervised implementation in a school setting. Attention is given to word study, comprehension, critical reading and reasoning, and reading-writing connections. Components of the course will include but not be limited to the five pillars of reading instruction identified by the National Reading Panel (2000): phonemic awareness, phonics, fluency, vocabulary, and comprehension. Prerequisites: READ 3320, READ 3351, and READ 4380. This course must be taken concurrently with READ 4394.

READ 4394 - Field Experiences in Reading

3 sem. hrs. The culminating experience for those students working toward a specialization in reading. Students are provided supervised experience in field-based activities, in addition to on-campus activities. Prerequisites: READ 3310, READ 3320, READ 3351, READ 3352, and READ 3380.

READ 4696 - Directed Individual Study

1-6 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies.

Science, Mathematics and Technology Education

SMTE 0091 - Biological Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0092 - Biomedical Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0093 - Chemistry Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0094 - Geology Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0095 - Physics Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0096 - Environmental Science Laboratory Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0097 - Art Student Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 0098 - Theatre Student Safety Seminar

0 sem. hrs. This non-credit course is designed as an on-line offering that must be passed by students each semester and at a grade of 100%. Students will be responsible for taking safety courses with different course numbers of SMTE, as each lab must meet different safety requirements as specified by the A&M System, depending on the types of hazardous materials used in each lab. Students will not be charged a fee for taking these courses.

SMTE 1350 - Fundamentals of Mathematics I*^

3 sem. hrs. (3:0) The conceptual framework for understanding and applying properties, models, and operations related to various number systems in problem solving settings. Prerequisite: MATH 1314. Fall, Spring, Summer. TCCNS Equivalent: MATH 1350

SMTE 1351 - Fundamentals of Mathematics II*^

3 sem. hrs. (3:0) The conceptual framework for understanding and applying properties, models, and operations related to various data systems in problem solving settings. Prerequisite: SMTE 1350 and TSIA-Math/ACT/SAT score required for teacher certification. See math.tamucc.edu/placement.html for scores. Fall, Spring, Summer. TCCNS Equivalent: MATH 1351

SMTE 3315 - Foundational Approaches to the Physical Sciences

3 sem. hrs. (2:2) Physical science topics such as simple machines, atoms, molecules, electricity and magnetism, sound, and light. Laboratory involvement will emphasize techniques of problem solving, data gathering, and data application. The course is taught following an inquiry based format and is recommended for future K-8 level science educators. Corequisite: SMTE 0096 - Environmental Science Laboratory Safety Seminar - Required every semester for lab-based courses. The Safety Seminar must be completed before the Census Date of the semester to participate in the lab portion of this course. Offered fall, spring and summer semesters every year.

SMTE 3316 - Foundational Approaches to the Life Sciences^

3 sem. hrs. (2:2) Emphasis on biological concepts including cells, plants, invertebrate and vertebrate structural systems. Laboratory investigations focus on techniques of problem solving, data gathering, and data applications. The course is taught following an inquiry based format and is recommended for future K-8 level science educators. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall, spring and summer semesters every year.

SMTE 3352 - Fundamentals of Mathematics III*^

3 sem. hrs. (3:0) The conceptual framework for understanding and applying properties, models, and operations related to various geometric systems in problem solving settings. Prerequisite: SMTE 1351 and TSIA-Math/ACT/SAT score required for teacher certification. See math.tamucc.edu/placement.html for scores. Fall, Spring, Summer.

SMTE 4217 - Secondary Approaches to the Life Sciences

2 sem. hrs. (2:0) Study of secondary science teaching and learning from the standpoints of theory and practice, curriculum objectives, materials and evaluation. The course will emphasize contemporary issues by focusing on biological content ranging across the sub-disciplines of molecular biology, physiology, evolution and environmental science while

teaching in a relevant and engaging context that includes web searches, laboratory activities, and student-centered inquiry activities Offered fall semester every year.

SMTE 4270 - Science Education Topics I^

2 sem. hrs. (2:0) Presentation of the conceptual framework for understanding and applying science content in life sciences including biology, ecology and evolution using the national standards for science education and Texas Essential Knowledge and Skills (TEKS). The course is taught using scientifically researched literature and content knowledge in an inquiry based format and is recommended for future 4-8 and 7-12 level science educators. Offered spring semester every year.

SMTE 4273 - Historical Development of the Sciences

2 sem. hrs. (2:0) Study of human endeavors leading to the present body of scientific knowledge placed in a historical and philosophical context. Portions of the materials will be presented in a format conducive to adaptation for middle school and high school. Prerequisites: BIOL 1407 - Biology II, CHEM 1412 - General Chemistry II, EDUC 3311 - School and Society^ or approval of instructor. Offered on sufficient demand.

SMTE 4320 - Secondary Science Laboratory Techniques

3 sem. hrs. (2:3) This course is designed to assist the 4-8 and 7-12 future science teacher in developing content knowledge, skills and mastery of designated laboratory and research techniques through scientific experimentation in areas such as chemistry, biology and physics. State and national laboratory safety mandates will also be addressed. Prerequisites: BIOL 1407 - Biology II, CHEM 1412 - General Chemistry II, EDUC 3311 - School and Society^ or approval of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester every year.

SMTE 4370 - Mathematics Education Topics I

3 sem. hrs. (3:0) Presentations of contemporary issues in mathematics education. Topics include history of mathematics education, state and national standards for mathematics education, cognitive development, the importance of culture, language and gender in learning mathematics, authentic assessment, and interdisciplinary curriculum.

SMTE 4382 - Basic Mathematics From An Advanced Viewpoint

3 sem. hrs. (3:0) Capstone course for students pursuing grades 4-8 certification in mathematics. Presents basic mathematical concepts in the context of advanced

mathematics courses. The course includes historical development of significant ideas in mathematics and science, interpretations of mathematical topics at multiple levels, and the use of technology to generate and convey understanding of mathematical ideas. Prerequisites: MATH 2305, MATH 3312, and completion of at least 90 hours. Spring.

SMTE 4490 - Selected Topics

1-4 sem. hrs. Subject materials variable. May be repeated for credit when topics are significantly different. Faculty approval required. May be offered any semester: students should consult the online course schedule.

SMTE 4496 - Directed Independent Study

1-4 sem. hrs. Requires a formal proposal of study to be completed in advance of registration and to be approved by the supervising faculty, the Chairperson, and the Dean of the College. Offered any semester upon request by a student and consent of the instructor.

Sociology

SOCI 1301 - Introduction to Sociology*

3 sem. hrs. An introduction to the basic concepts, methods, and theories used in Sociology. Topics illustrate the systematic understanding of social interaction, social organization, and social institutions. Reciprocal relationships between individuals and society are examined. Topics may include – but are not limited to – socialization, culture, social stratification, race and ethnicity, sex and gender, deviance, family, work, and social change. TCCNS Equivalent: SOCI 1301 This course satisfies the University core requirement in social science.Online Classification: Face-to-Face 1-24% and Fully Online.

SOCI 2301 - Social Problems

3 sem. hrs. A survey and exploration of the causes and consequences of major social problems in the U.S. society, including contemporary issues of poverty, unemployment, income inequality, health care, crime, climate change, and other issues of social class, racial, ethnic, and gender inequality.

SOCI 2319 - Social Psychology

3 sem. hrs. The scientific study of how a person's thoughts and behavior are influenced by others. Topics will include social cognition, attitudes, persuasion, interpersonal

relationships, and group behavior. (Credit may not be given for both this course and PSYC 2326.) Cross listed with PSYC 2319. TCCNS Equivalent: SOCI 2326/PSYC 2319

SOCI 3310 - Sociology through Film

3 sem. hrs. lecture The examination of film as a culture artifact to illustrate sociological concepts, theories, and perspectives. Specific attention will be given to narratives of film as they illustrate culture, aging, social class, gender, race/ethnicity, identity, and other sociological concepts.

SOCI 3312 - Racial and Ethnic Relations

3 sem. hrs. The study of cultural, religious, ethnic and racial groups, and the treatment accorded them in society. Prejudice, discrimination and the outcomes of discrimination in relation to both dominant and subordinate groups are considered.

SOCI 3320 - Sociology of Gender

3 sem. hrs. An examination of the roots, nature and social construction of gender roles including socialization of men and women, gender role relationships from the perspectives of sociology. Issues of family, education, work and the economy, religion, politics and law, feminist organizations, feminist theory, and men's and women's movements will be considered.

SOCI 3321 - Mexican American Women

3 sem. hrs. A study of the Chicanas and the trends in society and Mexican-American culture affecting their lives and behaviors.

SOCI 3340 - Sociology of the Family

3 sem. hrs. The study of the family, relationships among its members, and the relationship of family to other social institutions.

SOCI 3349 - Sociology of Deviant Behavior

3 sem. hrs. A systematic and critical study of the nature, patterns, and processes of violations of significant social norms by members of society. Specific attention is given to violations such as drug abuse, violence in and outside the family, and white-collar offenses.

SOCI 3350 - Sociology of Education

3 sem. hrs. Employing a sociological lens to examine formal education in the United States and other countries, students will explore various schools of thought and controversies surrounding education in modern societies. They will examine important issues related to formal education, such as the expansion of schooling, equality of educational opportunity, unequal achievement of groups of students, the reproduction of inequality in education, schools' roles in the transmission of culture, and the social organization of schools.

SOCI 4301 - Social Theory

3 sem. hrs. Combines an analysis of the major ideas and theories in sociology and their relationship to social research with an understanding of social processes and structures. Prerequisite: SOCI 1301 or permission of instructor. (Required for Majors.) Offered Fall semesters only.

SOCI 4310 - Sociology of Work and Occupations

3 sem. hrs. The study of work as a social phenomenon, including the social organization of work, occupations, and professions in society. The labor force, work culture, workers mobility, career lines, and leisure in contrast to work are considered.

SOCI 4312 - Social Class and Inequality^

3 sem. hrs. The study of social inequality in society, with emphasis on the social class structure of the United States, its origins, development, and consequences for individuals, groups, and society. Prerequisite: SOCI 1301 and SOCI 3312 or permission of instructor.

SOCI 4315 - Complex Organizations

3 sem. hrs. The development of a theoretical and applied understanding of those social institutions where most of us will be employed. Topics include organizational effectiveness, decision making, designs, politics, cultures, as well as gender and racial inequality.

SOCI 4320 - Sociology of Sports

3 sem. hrs. This course critically examines the relationships between organized sports and the rest of society. It will undertake a sociological analysis of how organized sports affect, and are affected by, major social institutions such as the economy, racial and gender relations, mass media, and religion, to mention but a few.

SOCI 4325 - Medical Sociology

3 sem. hrs. Examination of the social contexts of physical and mental health, illness and medical care. Topics include the social, environmental, and occupational factors in health and disease; socialization of health care providers; doctor-patient relationships; the structure and processes of health care organizations; and health care and social change.

SOCI 4331 - Juvenile Delinquency

3 sem. hrs. Examination of the extent and pattern of juvenile crime today. History and theory of delinquency and society's response to it. (Credit may not be given for both this course and CRIJ 4331.) Cross listed with CRIJ 4331.

SOCI 4335 - Criminology

3 sem. hrs. An examination of the major sociological explanations for crime, criminal behavior, and the social responses to crime. (Credit may not be given for both this course and CRIJ 4335.) Cross listed with CRIJ 4335.

SOCI 4385 - Senior Seminar in Sociology

3 sem. hrs. This is a capstone course required of all students graduating with a major in sociology. The course is designed to enable faculty to assess each student's expertise in applying sociological concepts and practices. Students demonstrate this expertise through the completion of a final project that combines a minimum of classroom hours with substantial research activity. The course is team taught by the entire sociology faculty. Students are allowed considerable flexibility in selecting either survey research or evaluation research for their project.(Offered Spring Only.)

SOCI 4390 - Topics in Sociology

3 sem. hrs. A consideration of various topics on social behavior and social structure. May be repeated when topics vary.

SOCI 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

SOCI 4398 - Applied Experience

3 sem. hrs. See College description. Offered on application.

SOCI 4445 - Social Research Methods

4 sem. hrs. A survey of the basic research techniques and methods used in sociology including content analysis, field research, sampling, surveys, polls, and computerized data analysis. Prerequisite: SOCI 1301 or permission of instructor. (Offered Fall Only.)

Social Work

SOCW 2361 - Introduction to Social Work

3 sem. hrs. An introductory survey of the field of social work including the nature, function, and types of social work practice. This course is designed to acquaint the student with the history, terminology, scope, and values of the profession of social work. Prerequisite: PSYC 2301 or SOCI 1301 or permission of instructor. TCCNS Equivalent: SOCW 2361

SOCW 3310 - Approaches to Social Welfare

3 sem. hrs. Origin, development, and present status of social service programs with particular emphasis on the relationship of program resources, human needs, and the methods through which services are provided.

SOCW 3320 - Social Services in the Community

3 sem. hrs. An introduction to the organizations and agencies involved in social service delivery. Exploration of the range and characteristics of the human service delivery system with particular emphasis on the social work profession. Prerequisite: SOCW 3310 or permission of instructor.

SOCW 3350 - Social Work Practice

3 sem. hrs. Social Work practice from a generalist perspective of social work intervention. Data collection, assessment, intervention, planning/implementation, and evaluation are covered. Prerequisite: SOCW 3301 or permission of instructor.

SOCW 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application. Prerequisite: consent of instructor.

SOCW 4398 - Applied Experience

3 sem. hrs. One semester course of field work in a selected agency. (See college description. Offered on application.) Prerequisite: consent of instructor.

Spanish

SPAN 1100 - Introduction to Service Learning

1 sem. hrs. This is a one-credit course in which students in Spanish 1311 or 1312 may enroll and participate. This service learning course aims to promote collaborative learning between college students learning Spanish and people in the community. Available upon application. Repeatable up to 2 hours. Online Classification: Face-to-Face 1-24%

SPAN 1311 - Spanish I

3 sem. hrs. Introduction to listening, speaking, reading and writing skills within a Spanish cultural framework. For students without previous knowledge of the language. (Language laboratory required. One hour per week.) *A lab fee is required for these courses. TCCNS Equivalent: SPAN 1311

SPAN 1312 - Spanish II

3 sem. hrs. Continued practice in listening, speaking, reading and writing skills within a Spanish cultural framework. (Language laboratory required. One hour per week.) A lab fee is required for these courses. Spanish 1311 or equivalent required. TCCNS Equivalent: SPAN 1312

SPAN 2311 - Spanish III

3 sem. hrs. Study of more complex Spanish sentence structure to further listening, speaking, reading and writing skills at an intermediate level within a Spanish cultural framework. Prerequisite: SPAN 1312, equivalent through credit by examination, or placement by departmental examination. TCCNS Equivalent: SPAN 2311

SPAN 2312 - Continuing Spanish

3 sem. hrs. Continued development and review of all language skills at an intermediate level within a Spanish framework with an emphasis in the linguistic and cultural perspective. Prerequisite: SPAN 2311, equivalent through credit by examination, or placement by departmental examination. TCCNS Equivalent: SPAN 2312

SPAN 2313 - Spanish for Heritage Speakers

3 sem. hrs. An introductory course designed for bilingual students who wish to enhance their linguistic skills (speaking, listening, reading and writing). This course will focus on

the cultural and historical aspects related to the heritage Spanish speaker. TCCNS Equivalent: SPAN 2313

SPAN 2315 - Language and Culture for Heritage Learners

3 sem. hrs. This course is designed to guide Spanish heritage language learners, as well as advanced learners of Spanish, in the development of their oral proficiency, written communication, and grammatical accuracy while exploring different cultural aspects from the Spanish-speaking world. It is highly recommended for students who have taken SPAN 2313 and/or who are transitioning into upper-division Spanish courses. This course may be used to satisfy the university core curriculum requirement in Language, Philosophy, and Culture. Prerequisite: SPAN 2313, equivalent, or faculty approval. TCCNS Equivalent: SPAN 2315 Online Classification: Face-to-Face 1-24%

SPAN 3302 - Spanish Composition

3 sem. hrs. A course designed to develop analytical perspectives in literary criticism and to strengthen reading and writing skills in Spanish through intensive reading of Spanish, Spanish American, and Chicano fiction. Prerequisite: SPAN 2312, equivalent, or faculty approval.

SPAN 3303 - Spanish Conversation

3 sem. hrs. A course designed to strengthen the student's oral proficiency in the language through selected readings, videos and oral presentations. Prerequisite: SPAN 2312, equivalent, or faculty approval.

SPAN 3304 - Spanish Civilization

3 sem. hrs. This course has been designed to provide a general overview of the cultural, linguistic, and historical experience of the Spanish people within its larger European context. Conducted in Spanish unless otherwise stated.

This course may be used to satisfy the university core curriculum requirement in Language, Philosophy, and Culture. Prerequisite: SPAN 2312, equivalent, or faculty approval.

Online classification: Face-to-Face 1-24%.

SPAN 3305 - Latin American Civilization

3 sem. hrs. This course is designed to provide a general overview of the cultural, linguistic, and historical experience of Latin American people before and after Columbus. Conducted in Spanish unless otherwise stated.

This course may be used to satisfy the university core curriculum in Language, Philosophy, and Culture. Prerequisite: SPAN 2312, equivalent, or faculty approval.

Online Classification: Face-to-Face 1-24%.

SPAN 3307 - Spanish Literature I

3 sem. hrs. A critical approach to the study of early Spanish literature from the Middle Ages through the Eighteenth Century. Literary selections include masterpieces that establish and reflect Spain's literary tradition within its larger European context. This course may be used to satisfy the university core curriculum requirement in literature. Conducted in Spanish.

SPAN 3308 - Spanish Literature II

3 sem. hrs. A continuation of a critical approach to the study of Spanish literature from the Nineteenth Century through the present. Representative works of Spanish Romanticism, Realism, Naturalism, and contemporary literature are studied within their larger European context. This course may be used to satisfy the university core curriculum requirement in literature. Conducted in Spanish.

SPAN 3309 - Spanish American Literature I

3 sem. hrs. A critical approach to the study of early Spanish American literature from the Pre-Columbian Period through the Nineteenth Century. Selected readings in all literary genres, major themes, writers, and early literary movements will be studied within their larger Latin American context. This course may be used to satisfy the university core curriculum requirement in literature. Conducted in Spanish.

SPAN 3310 - Spanish American Literature II

3 sem. hrs. A continuation of a critical approach to the study of Spanish American literature from the Twentieth Century through the present. Representative works of Latin American writers and literary movements: Modernism, Realism, Avant-Garde, Regionalism, Magic-Realism are studied within their larger Latin American context. This course may be used to satisfy the university core curriculum requirement in literature. Conducted in Spanish.

SPAN 3311 - Spanish Phonetics

3 sem. hrs. A course designed to study the production and discrimination of the Spanish sound system with a general overview of the geographical and social distribution of phonemic and allophonic variants.

SPAN 3312 - Spanish Grammar

3 sem. hrs. The course will serve to expand vocabulary, further develop writing skills; understand, apply, and use Spanish grammatical structures, and communicate more accurately in written and oral Spanish within a Hispanic cultural context.

SPAN 3313 - Introduction to Translation

3 sem. hrs. This course is an introduction to the theory, methods and practice of English to Spanish and Spanish to English translation of general texts from different fields. Challenges related to culture and language, as well as professional ethics will be examined.

SPAN 3315 - Civilizations of the Spanish-Speaking World

3 sem. hrs. This course has been designed to provide a general overview of the historical, sociocultural and political experience of peoples from the Spanish-Speaking world, both from Spain and Spanish America. Prerequisite: SPAN 2312, equivalent, or faculty approval.

SPAN 3316 - Spanish for the Professions

3 sem. hrs. The course stresses Health, Business and Legal terminology in Spanish to enhance communication skills and cultural knowledge that will help to serve the South Texas Spanish speaking population as well as to conduct interactions with Spanish speakers and/or businesses through the United States and the world. Prerequisite: SPAN 2312, equivalent, or faculty approval.

SPAN 3317 - Introduction to Hispanic Linguistics

3 sem. hrs. This course introduces the study of language, the main subfields of Hispanic linguistics, and their application to other sciences. Advanced proficiency in Spanish required.

SPAN 3320 - Introduction to Spanish Literature

3 sem. hrs. A critical approach to the study of Spanish literature from the Middle Ages through the present. Representative works of Spanish literature are studied within their larger European context. It is highly recommended that students take any of the following before taking this course: SPAN 2313, 2315, 3302, 3303 have advanced proficiency or faculty permit. Conducted in Spanish, unless otherwise stated.

This course may be used to satisfy the University Core Curriculum requirement in Language, Philosophy, and Culture.

Online classification: Face-to-Face 1-24%

SPAN 3325 - Introduction to Latin American Literature

3 sem. hrs. A critical approach to the study of Latin American literature from the Pre-Columbian Period through the present. Selected readings in all literary genres, major themes, writers, and literary movements will be studied with a wide Latin American context. It is highly recommended that students take any of the following before taking this course: SPAN 2313, 2315, 3302, 3303, have advanced proficiency or faculty permit. Conducted in Spanish, unless otherwise stated. This course may be used to satisfy the University Core Curriculum requirement in Language, Philosophy, and Culture. Online classification: Face-to-Face 1-24%

SPAN 4100 - Service Learning

1 sem. hrs. This is a one-credit course designed specifically for students who are preparing themselves to serve the community using their Spanish language skills. Students in this course will familiarize themselves with the methodology of a particular field (heritage language teaching, translation, interpreting, etc) to be able to interact and serve Spanish-speaking individuals in the community. Available upon application. Repeatable up to 3 hours. Online classification: Face-to-Face 1-24%

SPAN 4301 - Spanish Civil War and Literature

3 sem. hrs. Significance of the Civil War for Spanish, European, and world history. Effect of war on literary and cultural life of the country and the response of writers from Spain and Latin America. Conducted in Spanish. Conducted in Spanish.

SPAN 4302 - Mexican Narrative

3 sem. hrs. Examination of representative novels and short stories reflecting the emergence of a post-revolutionary society in Mexico. Conducted in Spanish.

SPAN 4303 - Spanish in the Southwest

3 sem. hrs. Cultural and linguistic dimensions of Spanish dialects of the Southwestern United States, with special attention to Texas Spanish and its sociolinguistic perspectives in the bilingual community at large. Prerequisites: SPAN 2312 or equivalent.

SPAN 4304 - Miguel de Cervantes' Don Quijote

3 sem. hrs. An advanced course designed to provide an introduction to Miguel de Cervantes' Don Quijote.

SPAN 4305 - Latin American Novel

3 sem. hrs. This course explores major novels from Latin America from the 20th century to the present. It examines the different problems, discourses, voices, contexts, and geographies that define this genre in Latin America.

SPAN 4306 - Modern Spanish Literature

3 sem. hrs. A course that focuses on modern Spanish literature. It is highly recommended that students take any of the following before taking this course: SPAN 2313, 2315, 3302, 3303, have advanced proficiency or faculty permit. Conducted in Spanish, unless otherwise stated. Online classification: Face-to-Face 1-24%

SPAN 4313 - Spanish Interpretation

3 sem. hrs. This course presents an introduction to methodologies, requirements, terminology, and practice of interpretation, with emphasis on simultaneous, consecutive, and sight interpretation.

SPAN 4320 - Spanish in the Americas

3 sem. hrs. A study of the Spanish that was brought to the Americas, its development, propagation and contact with native-American languages, including the sociocultural factors that have contributed to the linguistic variation in contemporary Spanish-speaking societies.

SPAN 4322 - Medical, Scientific and Technical Translation

3 sem. hrs. An advanced course in translation concentrating on medical, scientific and technical translation. The course is designed to extend student's knowledge of translation theory and consolidate their skills in specialized translation. Prerequisite: SPAN 3313.

This course is part of the Translation Certificate. Student must obtain a grade of C or better to continue with the Translation Certificate.

SPAN 4327 - Methods in Foreign Language Instruction

3 sem. hrs. This course is designed to study the current methods in foreign languages, their application in maximizing language proficiency, and the role of the students' culture and language during the learning process.

SPAN 4390 - Topics in Spanish

3 sem. hrs. Study of specialized topics in language or literature. These courses may also be designed to develop terminology and overall Spanish proficiency regarding specific professions: Business, Medical, Criminal Justice, Sociology, etc. May be repeated when topics vary.

SPAN 4396 - Directed Individual Study

1-3 sem. hrs. See College description. Offered on application.

SPAN 4398 - Applied Experience

3 sem. hrs.
A practical work experience related to the Spanish area and related careers. It is intended to provide an opportunity for a student to gain first-hand experience in an unfamiliar field. Consequently, Applied Experience credit may not be granted for a student's regular work assignment or for previous work experience. Registration is by application. The application must include a clearly written description of the duties and responsibilities involved in the Applied Experience project, and be signed by the student, the on-site supervisor, and the faculty supervisor. Completed applications must be received in the Dean's Office by the last class day of the semester preceding intended registration. This course is graded "credit" or "no credit." No more than three semester hours of Applied Experience credit may be counted toward the baccalaureate degree. Undergraduate Applied Experience course will include no less than one hundred hours and no more than 150 hours of work experience per semester.

Online classification: Face-to-Face 1-24%

SPAN 4421 - Business, Commercial, and Legal Translation

4 sem. hrs. An advanced course in translation concentrating on business, commercial and legal texts. The course is designed to extend student's knowledge of translation theory

and consolidate their skills in specialized translation. Prerequisite: SPAN 3313. The course will include a service-learning component. This course is part of the Translation Certificate. Student must obtain a grade of C or better to continue with the Translation Certificate.

Special Education

SPED 2397 - Special Education Field Experience

3 sem. hrs. This course requires students to participate in schools and programs that serve individuals with disabilities on and off campus. Students will be actively involved in the learning situation.

SPED 3325 - Strategic Instruction for Students with High-Incidence Disabilities

3 sem. hrs. This course provides an introduction and demonstration of specific skills necessary for teaching students with high-incidence disabilities.

SPED 3330 - Individualized Education Programs for Students with Disabilities

3 sem. hrs. This course emphasizes the design and implementation of individualized educational programs (IEP) for students with disabilities.

SPED 3335 - Applied Learning Theory

3 sem. hrs. This course is designed to develop and extend the student's knowledge of the principles of applied learning theory as it relates to students with extensive and pervasive support needs.

SPED 3340 - Individuals with Severe Disabilities^

3 sem. hrs. This course is an introductory study of the adaptations, approaches, and supports necessary to meet the educational needs of students who have communication, intellectual, motor, sensory, medical impairments, and/or other extensive and pervasive support needs. There are no prerequisite courses required to enroll in this course.

SPED 4310 - Students with Exceptionalities*

3 sem. hrs. This course is designed to familiarize the student with the various conditions of individuals with disabilities.

SPED 4315 - Motor Development for Students with Exceptional Needs

3 sem. hrs. A comparative overview of the physical development and motor-activity needs of students with disabilities.

SPED 4320 - Community-based Instruction for the Students with Exceptionalities

3 sem. hrs. Strategies and procedures for teaching community-based instruction to individuals with disabilities, including independent living and socialization skills, are discussed.

SPED 4345 - Behavioral Supports and Interventions for Students with Disabilities*

3 sem. hrs. This introductory course will focus on positive behavioral supports and behavior intervention techniques. Course content includes information on: definitions, characteristics, prevalence, causes, assessment, prevention of behavioral difficulties, functional behavior assessment, appied behavior analysis, education service delivery, advocacy, and other current issues in the field.

SPED 4696 - Directed Individual Study

1-6 sem. hrs. Programs will be designed for individual cases through special permission of the Department Chair and Dean. May be repeated for credit when the topic varies.

Sport Management

SMGT 2301 - Practicum in Sport Organizations I

3 sem. hrs. This course is designed to expose sport management majors to the profession by working with and assisting an organization in the sport or recreational industry. This will provide the student with opportunities to apply knowledge and theory related to sport management and help students to understand expectations and responsibilities and the reality of working in the sport industry. This will include, but is not limited to, performing managerial functions, such as planning, organizing, leading and evaluating, as well as, facility and event management, marketing, promotion, and market research. Students are expected to engage in the professional affiliation experience and complete accompanying academic requirements during the semester that they have made application. This experience will carry 3 hours of academic credit and will require a minimum of 100 contact hours at the fieldwork site.

SMGT 2314 - Introduction to Sport Management

3 sem. hrs. The study of operating principles for programs in intercollegiate athletics, professional sports, recreational sports, and community sport associations. This course is recommended prior to courses in the Sport Management Specialization.

SMGT 2315 - Sport and Social Issues

3 sem. hrs. Students examine the psychosocial and ethical factors involved in effective sport management. This course examines race, gender, social class, politics, religion, and other factors that affect sport in society.

SMGT 3301 - Practicum in Sport Organizations II

3 sem. hrs. This course is designed to give sport management majors advanced practice and participation in working in the sport and recreational industry. This will include, but is not limited to, performing managerial functions, such as planning, organizing, leading and evaluating, as well as, facility and event management, marketing, promotion, and market research. Students are expected to engage in the professional affiliation experience and complete accompanying academic requirements during the semester that they have made application. This is an experiential course that allows the mid-level sport management major to build on the competencies developed SMGT 2301 through experience in hands-on supervisory and leadership positions and focused reflection through academic work. Students may have the opportunities available in the course to develop more advanced knowledge, skills and values held by professionals in the sport management industry. The practical work for this course is predominately completed on campus. Prerequisite: SMGT 2301. This experience will carry 3 hours of academic credit and will require a minimum of 100 contact hours at the fieldwork site.

SMGT 3320 - Sport Communication

3 sem. hrs. The purpose of this course is two-fold: (a) to explore sport communication theories and how they relate to current issues and topics within the sport communication realm, particularly as they address mass media communication and the larger sport environment; and (b) to examine more practical concepts, activities, and behaviors related to sport communication and apply them to professional and collegiate sports.

SMGT 3325 - Governance and Ethics in Sport

3 sem. hrs. This course is designed to provide knowledge and awareness of the structures, rules and laws governing various sport organizations as well the participants.

SMGT 3330 - Promotion of Sport

3 sem. hrs. This course is designed to provide the sport manager with an understanding of the main marketing issues within the sport industry. Special emphases are placed on the application and assessment of marketing sport within the private and public sectors. Prerequisite: SMGT 2314

SMGT 3335 - Legal Issues in Sport

3 sem. hrs. Provides general knowledge of the judicial system and current legal issues in sport including risk management, eligibility, discrimination, drug testing, and Title IX. Pre-Req: SMGT 2314.

SMGT 3366 - Managing Sport and Leisure Services

3 sem. hrs. Introduction of issues related to managing sport and leisure services in a variety of settings such as universities, municipal recreation, corporate wellness centers, in government or private sectors. Pre-Req: SMGT 2314

SMGT 3367 - Sport Tourism

3 sem. hrs. The course is designed to provide an introduction to sport events from a tourism strategic planning/marketing perspective. Throughout this course, students will be exposed to sport event production strategies for tourism and their impacts on event stakeholders. Students will examine specific sport tourism events and analyze their strategies for destination branding; sport tourism facility and event financing; host-guest interactions; environmental, political, economic, and socio-cultural impacts. Pre-Req: SMGT 2314.

SMGT 4308 - Sport Facilities and Event Management

3 sem. hrs.

This course focuses on the major components of both facility and event management – planning, financing, marketing, implementation and evaluation. This course will provide a working knowledge of how to manage sport facilities and how to plan, manage, implement and evaluate sport events Pre-Req: SMGT 2314.

SMGT 4309 - Financial Administration in Sport

3 sem. hrs. This course is designed to provide knowledge of financial planning and administration. This includes, but not limited to, basic budget terminology, sources of financing for operating and capital expenditures, expenditure policies, auditing and the grant process. Pre-Req: SMGT 2314.

SMGT 4351 - Sport Entrepreneurship

3 sem. hrs. This course will provide an analysis of entrepreneurship in sport and the sport industry. Emphasis will be placed on the structure and framework of entrepreneurial endeavors and the theory and practice of entrepreneurs in sport. Topics covered will include: idea generation, business strategy, entrepreneurial activities, establishing business operations, venture capitalism, business plan writing, financing and marketing a start-up and the legal challenges of growing a business. Pre-Req: SMGT 2314.

SMGT 4365 - Managing Personnel in Sport Organizations

3 sem. hrs. This course is designed to expand the student's understanding of various management techniques and their application to sport organizations and administration. Topics include organizational behavior, human resources management and labor policies. Pre-Req: SMGT 2314.

SMGT 4693 - Professional Field Experiences I

6 sem. hrs. The professional field experience (minimum of 200 hours) is designed to provide the student the opportunity to apply knowledge and theory related to kinesiology, health, physical fitness and sport. The underlying objective behind the fieldwork and internship assignments is for students to gain on-the-job opportunities to integrate their classroom knowledge with professional responsibilities. Students must enroll in both KINE 4693 - Professional Field Experience I and complete requirements of this course.

SMGT 4694 - Professional Field Experiences II

6 sem. hrs. Professional Field Experiences II is designed to provide the student with additional opportunities to apply knowledge and theory related to kinesiology, health, physical fitness and sport that was gained in SMGT 4393 Professional field experience I. Students must have taken SMGT 4693 prior to enrolling in SMGT 4694 complete all the academic requirement.

Theatre

THEA 1120 - Theatre Practicum 1

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Linked with THEA 1342 - Costume Technology. Co-requisites: THEA 1371 Costume Technology and SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 1120

THEA 1121 - Theatre Practicum 2

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Linked with THEA 1330 - Theatre Stagecraft. Co-requisites: THEA 1330 Theatre Stagecraft and SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 1121

THEA 1310 - Theatre Appreciation

3 sem. hrs. Survey of theatre including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in productions may be required. TCCNS Equivalent: DRAM 1310 Meets Fine Arts requirements for the University Core Curriculum Program.

THEA 1330 - Theatre Stagecraft

3 sem. hrs. Study and application of the methods and components of theatrical production which may include one or more of the following: theater facilities, scenery construction and painting, properties, lighting, and sound. Co-requisites: THEA 1121 Theatre Practicum 2 and SSMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 1330

THEA 1341 - Stage Makeup

3 sem. hrs. A practical exploration of basic stage makeup techniques. The student will also investigate the relationships of character to makeup and begin to understand the work needed to design makeup for a production. Co-requisite: SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 1341

THEA 1351 - Acting I

3 sem. hrs. The development of basic skills and techniques of acting, including sensory awareness, ensemble performing, character analysis, and script analysis. Emphasis on the mechanics of voice, body, emotion, and analysis as tools for the actor. TCCNS Equivalent: DRAM 1351

THEA 1352 - Acting II

3 sem. hrs. A continuation of Acting I with emphasis on characterization and working with extended realism. The student will study the theories of Constantin Stanislavski. Prerequisite: THEA 1351. TCCNS Equivalent: DRAM 1352

THEA 1371 - Costume Technology

3 sem. hrs. Introduction to the process and application of the fundamental skills of costume production, modification, and maintenance. Co-requisites: THEA 1120 Theatre Practicum 1 and SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 1342

THEA 2120 - Theatre Practicum 3

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Co-requisite: SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 2120

THEA 2121 - Theatre Practicum 4

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Co-requisite: SMTE 0098 Theatre Student Safety Seminar. TCCNS Equivalent: DRAM 2121

THEA 2336 - Voice for the Actor

3 sem. hrs. Principles, practices, and exercises in awareness, relaxation, freedom, flexibility, and expressiveness in the actor's vocal instrument. TCCNS Equivalent: DRAM 2336

THEA 3120 - Theatre Practicum 5

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3121 - Theatre Practicum 6

1 sem. hrs. Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3165 - The Design and Technical Portfolio.

1 sem. hrs. A basic course in the development of the student portfolio for the areas of design and technology with emphasis in the theatrical job market or graduate school. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3300 - Stage Movement

3 sem. hrs. Students will gain insights into the physical skills, practices, exercises, and staging techniques developed and used by actors and directors in theatrical performance, with an emphasis on relaxation, freedom, expressiveness, spatial relationships, and composition. Prerequisites: THEA 1351, THEA 1352. TCCNS Equivalent: DRAM 1322

THEA 3302 - Creative Dramatics

3 sem. hrs. Theories and practices incorporating the techniques of creative drama in the elementary, middle, and high school classroom. Especially recommended for elementary education, recreation, and the social sciences.

THEA 3303 - Theatre in the Public Schools

3 sem. hrs. Theories and practices of incorporating theatre activities in the public schools. Especially recommended to students of elementary and secondary education, recreation and the social sciences.

THEA 3310 - Contemporary Theatre

3 sem. hrs. An overview of the nature and function of theatre in our contemporary society with discussion of representative plays and playwrights, theatrical styles, and avant-garde theatre. Students will explore multicultural, political, and experimental themes, attend theatrical productions, and meet with actors, designers, and directors to discuss contemporary practices.

THEA 3311 - Script Analysis

3 sem. hrs. Students will learn the principles, techniques, and processes of dramatic structure found in written scripts as seen through the perception of the stage director, actor, and designer. A written intensive analysis of each script studied during the semester will be required. Focus will be on the theories of Aristotle and Eugene Scribe's "Well Made Play Formula". Prerequisites: THEA 1330 and THEA 1352.

THEA 3312 - Stage Combat I

3 sem. hrs. (1:2) Stage combat is a unique form of acting and movement; integral to the training of the professional actor and an extremely marketable skill. This course is an introduction to the stage fight discipline. It is important as actors that we develop a keen sense of duality in performance; a seemingly impromptu, theatrically engaging moment of violence built upon a foundation of safe, consistent physical dialogue. In this way, we

can enhance the physical lives of all the characters we play; especially those engaged in acts of violence. This course explores many fundamental acting techniques in a new light including responsibility to a partner, listening and responding, projection, articulation, spatial awareness and above all intent. May be repeated for credit.

THEA 3335 - UIL Debate and Speech

3 sem. hrs. This course will prepare students to coach High School speech events as extra-curricular and co-curricular activities. The class will focus primarily on Texas University Interscholastic Leagues (UIL competitions) but will also cover events sponsored by the Texas Forensics Association (TFA) and the National Forensics League (NFL). Areas covered will include oral interpretation, extemporaneous speaking, and debate.

THEA 3340 - Audition Preparation

3 sem. hrs. Provides the student with the information and skills needed for auditioning in both professional and educational theatre. Prerequisites: THEA 1351, THEA 1352.

THEA 3350 - Production Management

3 sem. hrs. This course is a survey of stage management and theatre administration. Topics to be studied include stage management, production management, professional unions, publicity/marketing, box office and house management. Prerequisites: THEA 1330, THEA 1371, and THEA 3311.

THEA 3370 - History of the Theatre I

3 sem. hrs. Historical investigation of the nature and function of theatre from primitive rituals through the Renaissance periods with discussions of representative plays/playwrights, theatrical styles and stage design. Prerequisite: THEA 3311.

THEA 3371 - History of the Theatre II

3 sem. hrs. Historical investigation of theatre from the Restoration era to the present. Focus on the nature and function as well as the critical analysis of theatre and design, various movements, and influential people. Prerequisite: THEA 3311.

THEA 3373 - Principles of Design

3 sem. hrs. Builds upon the student's practical lab experience and understanding of theatrical design begun in costume construction and theatre stagecraft. Students will

explore the creative process of theatre production as it pertains to lighting, set, sound, props, and costume design projects. Prerequisite: THEA 1371 Costume Technology, THEA 1330 Theatre Stagecraft. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3375 - Acting III: Period Styles

3 sem. hrs. Specific training for actors in period plays. Emphasis on training the actor for the Classical, Renaissance, Shakespearean, and Modern Periods. Prerequisites: THEA 1351, THEA 1352.

THEA 3380 - History of Theatrical Styles

3 sem. hrs. A survey and research-oriented course which studies the major impact of the visual, artistic, historical, and social period movements. The course will focus on the approach that the actor, designer, director, and playwright take in developing the understanding of the environment of a play's location and time period. Prerequisite: Approval of Instructor.

THEA 3381 - Drawing and Rendering for the Stage

3 sem. hrs. Examination of the uses of the various materials used and the development of the techniques employed in the creation and presentation of theatrical renderings and models. Prerequisite: Approval of Instructor. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3382 - Drafting and Computer-Aided Design for the Stage

3 sem. hrs. Practical examination and practice in theatrical drafting conventions with an emphasis on the development of hand drafting techniques and CAD (computer-aided design). Prerequisite: THEA 1330 Theatre Stagecraft. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 3385 - Musical Theatre

3 sem. hrs. The focus of the course is on musical theatre history, exploring trends in the genre, audition techniques, characterization, staging and choreography.

THEA 3386 - Playwriting

3 sem. hrs. Playwriting is a fundamentals course in writing for the stage. The course will cover playwriting for monologues, 10 Minute Plays, and One Act Plays. Completion of Script Analysis is strongly suggested but not required. May be repeated for credit.

THEA 3387 - Dramaturgy

3 sem. hrs. This class will provide a brief overview of many of the skills and tools that dramaturgs possess. We will study the history of the field and learn about currently working dramaturgs, while also covering the foundational skills of historical research, structural analysis, and theoretical application. Completion of Script Analysis is strongly suggested but not required. May be repeated for credit.

THEA 4100 - Senior Seminar

1 sem. hrs. A seminar class for the graduating senior. The student will be given the opportunity to address individual weaknesses and strengths in preparation for graduate school or entering the job market.

THEA 4200 - Senior Capstone

2 sem. hrs. The course is designed to provide the graduating senior an opportunity to complete a final project in the acting/directing or design/tech focus areas. The student's project will be juried by the entire faculty and include a research and production component.

THEA 4312 - Stage Combat II

3 sem. hrs. (1:2) Stage combat is a continuation of the skills of acting and movement; integral to the training of the professional actor and an extremely marketable skill. This course is an advanced weaponary course in the stage fight discipline. It is important as actors that we develop a keen sense of duality in performance; a seemingly impromptu, theatrically engaging moment of violence built upon a foundation of safe, consistent physical dialogue. In this way, we can enhance the physical lives of all the characters we play; especially those engaged in acts of violence. May be repeated for credit. Prerequisite: THEA 3312 Stage Combat I

THEA 4313 - Theatre Technologies

3 sem. hrs. Designed to provide a forum for intensive study of a particular aspect of modern theatrical technologies. Various topics may be selected based on current industry trends, student needs and available resources. Prerequisites: THEA 1330 Theatre Stagecraft, THEA 3381 Drawing and Rendering for the Stage and THEA 3382 Drafting

and Computer-Aided Design for the Stage. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4314 - Collaborative Approaches to Design

3 sem. hrs. An advanced design course where the student will examine the process of design from the standpoint of the relationship created within the design team. Through class projects, the student will participate in a design process which fosters communication of ideas, written analysis and collaboration in pursuit of a unified design in all aspects of production. Prerequisite: THEA 3373 Principles of Design. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4323 - Oral Interpretation of Children's Literature

3 sem. hrs. A study, primarily through the medium of performance, of various types and forms of literature for children. Strongly oriented toward teaching literature in the elementary school classroom. (Credit may not be given for both this course and COMM 4323 or ENGL 4370.)

THEA 4333 - Technical Direction

3 sem. hrs. An advanced technical class geared for the student who wishes to receive training and employment as a technical director. Prerequisite: Approval of Instructor.

THEA 4360 - Stage Direction I

3 sem. hrs. The study and practical application of directing principals for the beginning director. Elements of script analysis, blocking, movement, character development, tempo, and design will be investigated as part of the directing process. The student will direct a ten-minute play for public performance. Prerequisite: THEA 1352, THEA 3311.

THEA 4361 - Stage Direction II

3 sem. hrs. An advanced study in directing with actual experience in organization, interpretation, casting, and producing the one-act play. The student will direct a one-act play for public performance. Prerequisite: THEA 4360.

THEA 4365 - Costume Design

3 sem. hrs. A study of the theory and practice of costume design utilizing the human form as a design element for the stage. Encompasses theatre form, style, and drafting and

drawing techniques. Students are required to work on University Theatre productions as part of this course. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4366 - Scene Painting

3 sem. hrs. The examination and practice of the various materials and techniques of professional scenic painting, including material mixing, faux techniques, and textural applications.

THEA 4370 - Set Design

3 sem. hrs. A study of the theory and practice of set design. Students will learn the fundamentals of theatre design and will apply this knowledge to projects. Projects will encompass theatre form, style, and concept utilization. Students are required to work on University Theatre productions as a part of this course. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4371 - Acting for the Camera

3 sem. hrs. Emphasizes the practice of various acting styles for television, video, and film. The student will receive practical experience in commercial styles, public service announcements, television and video style acting, and film scene study. (Credit may not be given for both this course and COMM 4371.)

THEA 4372 - Theatre Practicum

3 sem. hrs. Advanced practice and participation in set construction, lighting implementation, and stagecraft. Students will build upon skills in the areas of theatre production and design for production in the University Theatre. Class meets twice weekly with additional crew/lab work requirements as well. Students are required to work on University Theatre productions as a part of this course. May be repeated twice for credit. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4373 - Improvisation Skills Level I

3 sem. hrs. Improvisation Skills Level I is a fundamentals of improvisation course that teaches the guidelines for successful improvisation skills. The course emphasizes the basics of successful improvisation as it pertains to Theatre, Communication, and the student who wants to improve their communication skills. May be repeated for credit.

THEA 4374 - Improvisation Skills Level II

3 sem. hrs. Improvisation Skills Level II is a continuation of Improvisation course level I that instructs the student in the guidelines for advanced improvisation skills. The course teaches the skills necessary for advanced individual and group improvisation. Emphasis is on ensemble performance. May be repeated for credit. Prerequisite: THEA 4373 Improvisation Skills Level I

THEA 4375 - Lighting Design

3 sem. hrs. A study of the theory and practice of lighting design. Practical experiences in University Theatre are included to provide exposure to the total design and implementation of lighting design. Students will become familiar with the techniques and aesthetics of lighting theatrical performances and will apply skills to create designs for projects and actual plays. Students are required to work on University Theatre productions as a part of this course. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4380 - Advanced Stage Makeup

3 sem. hrs. A study of the theory and practice of designing makeup for the stage. Students will learn about aesthetics, application, and techniques of stage makeup. Students will do makeup designs as projects in the class. Students are required to work on University Theatre productions as part of this course. Co-requisite: SMTE 0098 Theatre Student Safety Seminar.

THEA 4384 - Theatre Production

1-3 sem. hrs. An applied production experience in which students perform in a play, work back stage or on a stage crew, or learn to design a play or musical from conception to final production. Students enrolling in the course but not cast in the shows will work backstage (technical production) or in another production capacity. Enrollment is by application only, and must be approved by the instructor in advance of registration. As part of the application process the number of credit hours will be determined by the instructor. May be repeated for credit.

THEA 4390 - Topics in Theatre

1-3 sem. hrs. Study of specialized topics and themes in the areas of acting, directing, and theatre history. May be repeated when topics vary.

THEA 4396 - Directed Individual Study

1-3 sem. hrs. See College description. By application. Prerequisite: Approval of Instructor.

THEA 4398 - Applied Experience

3 sem. hrs. See College description. By application. Prerequisite: Approval of Instructor.

University Studies

UNIV 1100 - Career and Academic Planning

1 sem. hrs. Career and Academic Planning assists students in confirming career and educational choices based on strengths-based career assessments, research on career interests, and clarification of majors and degree options. Through in-class activities, discussions, and presentations, students will explore the variety of educational opportunities available to them at the university to support their career and academic interests. In addition, students will be introduced to decision-making and goal-setting strategies to identify and set achievable academic and career goals.

UNIV 1101 - First-Year Seminar I*

1 sem. hrs. Students are introduced to college level work and responsibilities, and provided with appropriate support and resources to successfully navigate their first semester. Required of full-time first-year students; to be taken as a component of a student's first learning community.

UNIV 1102 - First-Year Seminar II*

1 sem. hrs. Continuation of UNIV 1101. Students participate in academic discourse and prepare for their future coursework and careers. Required of full-time first-year students; to be taken as a component of a student's second learning community.

UNIV 4350 - University Studies Capstone

3 sem. hrs. This course emphasizes writing, research, professionalization, and workforce preparation. Students will be responsible for developing a reflective writing portfolio that showcases their academic specialization and preparation within the University Studies program. The course will also cover the practical skills of obtaining employment, including writing resumes, effectively interviewing, and effectively searching for available jobs.

Women and Gender Studies

WGST 3301 - Introduction to Women and Gender Studies

3 sem. hrs. An introduction to the study of women and gender across disciplines and cultures. Designed to engage students in some of the most important methodological and theoretical debates regarding women's experiences and the construction of knowledge about women historically and today. Literary, anthropological, sociological, historical, scientific, and managerial perspectives may be included.

WGST 4380 - Senior Seminar in Women and Gender Studies

3 sem. hrs. This seminar explores the relationship between theory and application in the field of women and gender studies. This includes the study of feminist theories and methodologies with special attention to the application of these to current debates and social issues. In addition, students must complete a research paper or applied experience project that is relevant for their major field of study.