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 5312 - Foundations of Accounting*

3 sem. hrs. Theoretical and applied facets of financial and managerial accounting for business. The course includes preparation and communication of financial information as well as the uses of accounting data in planning and controlling activities of business firms and other types of organizations. (This is a core course.) Not open to students who have completed six semester hours of accounting. (This is a core course.) Not open to students who have completed six semester hours of accounting.

ACCT 5315 - Accounting Topics*

3 sem. hrs. A continuation of financial and managerial accounting with emphasis on applications, and analysis and interpretation of financial statements. Prerequisites: ACCT 5312 or equivalent.

ACCT 5317 - Oil, Gas and 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 gas taxation and analysis of oil and gas financial statements. Prerequisites: graduate standing and ACCT 3311 or equivalent. ACCT 5317 – Oil, Gas and Energy Accounting Prerequisites: graduate standing and ACCT 3311 or equivalent.

ACCT 5332 - Controllership*

3 sem. hrs. Development and integration of budgets, variable budgets, cash budgets, capital budgets, and cost-volume-profit analysis for operational planning and financial controls. Case Study orientation. Prerequisite: ACCT 5312 or equivalent.

ACCT 5337 - Taxes and Business Strategy*

3 sem. hrs. A framework to analyze how tax rules affect decision-making. Cases and problems, taken from historical and current developments in tax planning, develop understanding of how changes in tax rules influence the behavior of various constituents in the broad business and regulatory environment. Prerequisites: ACCT 5312 or equivalent.

ACCT 5340 - Forensic Accounting*

3 sem. hrs. The course will cover the concepts and skills of forensic accounting investigations. The course focuses on the methods and technological tools used to detect occupational fraud. These include the steps in conducting an investigation, use of technological tools, witness and suspect interviewing techniques, investigation report writing, and expert testimony. Prerequisites: graduate standing and ACCT 3340 or ACCT 4311 or equivalent.

ACCT 5341 - Advanced Auditing and Assurance Services*

3 sem. hrs. This course is designed as a discussion-based seminar and case analysis to provide graduate students with an understanding of auditing theory, practice, and research methods. This course continues from Auditing Principles and Procedures (ACCT 4311) by implementing the auditing principles, standards, procedures, and practices learned in that course and applving them in case analysis. Topics include research of professional accounting and auditing standards, technical memo writing, professional ethics, professional judgment, sampling, forensic examinations, integrated audits, gualitv control reviews, assurance services, and other contemporary issues in auditing. Prerequisites: Accounting foundation courses or their equivalent.

ACCT 5345 - Ethics for Texas CPA Candidates and Business Executives

3 sem. hrs. The 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 education requirement of the Texas State Board of Public Accountancy (TSBPA); however, it will not be counted 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.

ACCT 5351 - Strategic Cost Management*

3 sem. hrs. A conceptual approach to the use of cost accounting information to support decision-makers as they develop, communicate, implement, evaluate and modify organizational strategy. The linkage between cost management and strategy is facilitated by examining such tools as: cost driver, value chain, and organizational design analyses. Prerequisites: accounting foundation courses or their equivalent.

ACCT 5355 - Information Systems in Accounting*

3 sem. hrs. A study of current topics in accounting information systems. Topics include the role of accounting information systems and their applications in a variety of computer environments including the Internet, service organizations, and centralized and decentralized environments. Prerequisites: accounting foundation courses or their equivalent.

ACCT 5370 - Seminar*

1-3 sem. hrs. Seminar in an identified topic in accounting. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

ACCT 5371 - Professional Accounting Research*

3 sem. hrs. Course presents practice of general accounting research. Content includes study of professional research using authoritative standards and databases. The course develops procedures for identifying the applicable accounting issues, locating appropriate authority, and communicating the results of professional research. Through comprehensive case studies, students will obtain hands-on experience in researching and evaluating technical accounting, tax, and audit issues. Prerequisites: Accounting foundation courses or their equivalent.

ACCT 5381 - Accounting Theory*

3 sem. hrs. A study of diverse accounting theories and concepts. Includes an intensive study of the underlying framework of financial accounting. Contemporary accounting issues are emphasized focusing on proper financial statement presentation and disclosure. Includes the study of similarities and differences between U.S. GAAP and International Financial Reporting Standards and the related convergence projects. Prerequisites: accounting foundation courses or their equivalent.

ACCT 5391 - Integrative Seminar in Accounting*

3 sem. hrs. The use of case studies to explore the integration of financial accounting, auditing, taxation, managerial accounting and accounting information systems to assess their relationship individually and collectively to business decision-making. Must be taken at the end of the program after completion of all advanced, non-elective courses. In unusual circumstances, it may be taken concurrently with the final non-elective courses with the written permission of the Director of Master's Programs.

ACCT 5396 - Directed Individual Research or Readings

1-3 sem. hrs. Contact the Director of Master's Programs.

Art

ARTS 5191 - Graduate Professional Practices Seminar

1 sem. hrs. A graduate seminar devoted to professional practices, in a contemporary context, for artistic production and academic pedagogy in Studio Art. Professional practices covered may include but are not limited to development of artist statements, teaching philosophy statements, curriculum vitae, websites, and application dossiers for galleries, grants, and residencies along with the investigation into non-profit organizations, the role of the arts in civic economic development, and curatorial practices for a range of arts institutions from artist-run to museums. This course receives one hour of credit per semester. The course may be repeated three times for credit .

ARTS 5192 - Graduate Critique Seminar

1 sem. hrs. An interdisciplinary graduate seminar in Studio Art devoted to the critique of artistic production in a contemporary cultural context. This course consists of structured peer-centered critiques. Students will become adept in both the language of critique and critique structures. Works are examined in an interdisciplinary context allowing students to comprehend their work through multiple perspectives while also providing opportunities for cross-disciplinary collaboration. This course receives one hour of credit per semester. The course may be repeated three times for credit.

ARTS 5301 - Workshop in Art

1-3 sem. hrs. Current trends and approaches in art with emphasis on contemporary processes and techniques in studio work. May be repeated when topics vary. Offered on sufficient demand. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5312 - MFA Studio in Art: Ceramics

3 sem. hrs. Individual study and direction in ceramics. Enrollment in the MFA program required. May be repeated. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5313 - MFA Studio in Art: Drawing

3 sem. hrs. Individual study and direction in drawing. Enrollment in the MFA program required. May be repeated. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5314 - MFA Studio in Art: Graphic Design

3 sem. hrs. Individual study and direction in graphic design. Enrollment in the MFA program required. May be repeated.

ARTS 5315 - MFA Studio in Art: Painting

3 sem. hrs. Individual study and direction in painting. Enrollment in the MFA program required. May be repeated. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5316 - MFA Studio in Art: Photography

3 sem. hrs. Individual study and direction in photography. Enrollment in the MFA program required. May be repeated. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5317 - MFA Studio in Art: Printmaking

3 sem. hrs. Individual study and direction in printmaking. Enrollment in the MFA program required. May be repeated. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5318 - MFA Studio in Art: Sculpture

3 sem. hrs. Individual study and direction in sculpture. Enrollment in the MFA program required. May be repeated. Co-requisite:SMTE 0097 Art Student Safety Seminar.

ARTS 5320 - Graduate Critique Seminar

3 sem. hrs. An interdisciplinary fine art graduate seminar devoted to the analysis of artistic production in a contemporary cultural context, consisting of peer-centered critiques. Students will become adept in both the language and structures of critique. In addition to graduate level artistic production, students will conduct research and present scholarly articles relevant to their work for class discussion. Works are examined in an

interdisciplinary context allowing students to comprehend their studio practice through multiple perspectives and opportunities for cross-disciplinary collaboration.

ARTS 5391 - MFA Seminar in Art

3 sem. hrs. Various thematic discussions and projects pertaining to studio work under the guidance of a studio faculty member, and possible guest lecturers and artists.

ARTS 5392 - Art Theory and Methods

3 sem. hrs. The course will cover key developments in the evolution of art historiography, aesthetic theory and methods. Students will be engaged in discussions related to the practice of art history from an historiographical perspective and will conduct verbal and written analyses in connection with primary and secondary sources derived from canonical scholarship. The course will include discussion of theoretical and methodological texts from antiquity and the Middle Ages, to the early Modern period, the Enlightenment, the nineteenth and twentieth centuries, to postmodernity and the contemporary era. These analyses will consider notions of aesthetics, historiography, deconstruction, authorship, various modes of identity formation, and globalization. Students will become proficient in a wide range of aesthetic, historiographical, theoretical, and methodological practices related to fine arts disciplines.

ARTS 5393 - Seminar in Art History and Aesthetics

3 sem. hrs. Study in specific areas of art history and aesthetics. May be repeated when topics vary. Prerequisite: an upper-division course in art history.

ARTS 5394 - Directed Research

3 sem. hrs. This course entails a faculty-led research project as related to selected Studio Art and Design topics, focused on reading and writing. Students will conduct research utilizing relevant archival material and databases along with direct contact with contemporary artists, art historians, critics, curators, and other cultural professionals as appropriate. Students can enroll in this course in any semester within the MFA program with the approval of the graduate student's thesis committee. The course is offered during any semester upon request by the student and with the consent of the instructor.

ARTS 5395 - MFA Thesis

3 sem. hrs.

This course concentrates on research and writing in creative scholarship as related to the Candidate's discipline, concentration area(s), and research. The MFA Candidate is responsible for a written Thesis that provides textual support for their Exhibition or Project, executed under the MFA Project course. Candidates can enroll with the approval of the Thesis Committee. A specific syllabus for the Candidate's chosen discipline and concentration(s) will be provided to them under this course.
This syllabus is a binding contract between Professor and the MFA Candidate. It is the Candidate's responsibility to thoroughly read and understand all rules, expectations and guidelines. Co-requisite: SMTE 0097 Art Student Safety Seminar. Online Classification: Face-to-Face 1-24%.

ARTS 5396 - Individual Study

1-3 sem. hrs. A carefully planned special study on an academic topic not offered as part of the regular graduate curriculum. Directed Individual Study (DIS) is a tutorial, directed and evaluated by a member of the graduate art faculty. Enrollment is restricted to graduate students who have demonstrated both academic ability and the capacity for independent work. Complete applications must be filed and approved by a committee of the graduate art faculty and the Dean of Liberal Arts in advance of registration. Prerequisites: 1) At least 6 semester hours of graduate course work in the field at Texas A&M University-Corpus Christi. 2) A minimum GPA of 3.0 on all work in the field at Texas A&M University-Corpus Christi. 3) At least one previous course with the supervising instructor. A maximum of 6 semester hours of 5396 may be counted towards the graduate degree. Offered on application to the program coordinator. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5397 - Graduate Teaching Assistant Practicum

3 sem. hrs. Practical training in instruction for MFA graduate students under the declared Graphic Design discipline. This course is designed for graduate students to assist an assigned program faculty mentor and their undergraduate students. As a practicum course, the graduate student will spend the majority of their time in the classroom when class is in session. The graduate student, in the role of lead instructor, is expected to deliver course content and lectures designed by the program faculty mentor and to assist undergraduate course students in obtaining course learning objectives.

ARTS 5398 - MFA Project

3 sem. hrs. This course concentrates on creation and execution in creative scholarship as related to the MFA Candidate's discipline, concentration area(s), and research. Candidates can enroll with approval of their Thesis Committee. A specific syllabus for

the Candidate's chosen discipline and concentration(s) will be provided to them under this course. Prerequisite: Approval of the student's supervisory committee. Co-requisite: SMTE 0097 Art Student Safety Seminar.

ARTS 5399 - Gallery and Museum Practices

3 sem. hrs. Study of the functions of galleries and museums: curating, preparation, grantsmanship, crating, documentation, and publicity. Visits to galleries and museums will be made around South Texas as well as Houston. Co-requisite: SMTE 0097 Art Student Safety Seminar.

Bilingual/ESL/Multicultural

BIEM 5343 - Foundations in Bilingual Education

3 sem. hrs. A study of bilingualism and bilingual education in the United States with attention to rationale, philosophy, and program models.

BIEM 5344 - Methods of Teaching Bilingual Children

3 sem. hrs. Methods and techniques of teaching bilingual students in elementary schools. Emphasis is on teaching Spanish language arts.

BIEM 5345 - Developmental Linguistics

3 sem. hrs. Language acquisition and development with special reference to their implications for teaching monolingual and bilingual students.

BIEM 5346 - Pedagogical implications of Bilingual/ESL*

3 sem. hrs. Overview of curriculum alignment in the bilingual classroom. Includes analysis of language assessment instruments and the pedagogical implications associated with the education of culturally and linguistically diverse students. Students who have taken BIEM 5346 may not enroll in BIEM 6346.

BIEM 5347 - Methods of Teaching English As a Second Language

3 sem. hrs. Advanced studies in methodology and techniques available for teaching learners whose native language is not English. Some attention to sociolinguistics is considered.

BIEM 5349 - Contrastive Analysis

3 sem. hrs. A descriptive/contrastive approach to the study of Spanish and English linguistic structures. Introduces basic concepts of language, linguistics, and bilingualism.

BIEM 5390 - Professional Seminar

1-3 sem. hrs. Contemporary issues in Bilingual/ESL Multicultural Education: topics vary with professional identification of participants.

BIEM 5397 - Practicum-multicultural Education

3 sem. hrs. This course is designed to provide the student with in-depth knowledge and skills in the content areas as they apply to the education of language minority children in appropriate multicultural, multilingual, and multilevel settings.

BIEM 5696 - Directed individual Study

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

BIEM 6346 - Pedagogical Implications of Bilingual/ESL

3 sem. hrs.

Overview of curriculum alignment in the bilingual classroom. Includes analysis of language assessment instruments and the pedagogical implications associated with the education of culturally and linguistically diverse students. Students who have taken BIEM 5346 may not enroll in BIEM 6346.

Biology

BIOL 5102 - Graduate Defense Seminar

1 sem. hrs. Presentation of research conducted for MS degree. Should be taken the last semester of resident graduate study. Open only to MS Thesis and Non-thesis Degree Candidates in Biology. Students can enroll in any semester with the approval of their graduate advisory committee chair. Offered any semester upon request by a student and consent of the instructor chair of the student's graduate advisory committee.

If BIOL 5102 is not completed by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester.

BIOL 5304 - Virology

3 sem. hrs. (3:0) Survey of bacteriophages and major pathogenic plant and animal viruses including Baltimore classification, viral replication, and emerging viral diseases. Emphasis on analysis and review of primary literature on viruses. Prerequisites: BIOL 2416 - Genetics, BIOL 2421 - Microbiology and CHEM 3412 - Organic Chemistry II, or equivalents. Offered spring semester of odd-numbered years.

BIOL 5308 - Biogeography

3 sem. hrs. (3:0) Selected reading, discussion and projects concerning the geographic distribution of plants and animals. Prerequisites: BIOL 3428 - Principles of Ecology or BIOL 3414 - Vertebrate Biology, or equivalent. Offered on sufficient demand.

BIOL 5309 - Systematics

3 sem. hrs. (3:0) Theories, methods, molecular and evolutionary basis of systematic biology; and rules and relationships of nomenclature used in classification. Offered spring semester of odd-numbered years.

BIOL 5310 - Physiological Adaptations in Animals

3 sem. hrs. (3:0) A study of the physiological adaptations of animals to their environment, including osmoregulatory and temperature regulatory mechanisms. Prerequisite: BIOL 3430 - Physiology, or equivalent. Offered fall semester of odd-numbered years.

BIOL 5311 - Cellular Bases of Behavior

3 sem. hrs. (3:0) Using vertebrate and invertebrate animal models, this graduate-level course explores how behaviors emerge from the activity of neural circuits and how experience modulates these circuits. Prerequisite: An introductory neurobiology course is recommended. Offered fall semester every year.

BIOL 5319 - Biology of Marine Mammals

3 sem. hrs. Introduction to marine mammals, with a focus on their interactions with their biotic and abiotic environment. Prerequisites: Permission of instructor and approval by thesis/dissertation advisory committee.

BIOL 5322 - Molecular Genetics

3 sem. hrs. (3:0) In-depth study of the molecular basis of genetic interactions; focus on molecular mechanisms of mutation, suppression and recombination. Prerequisites: CHEM 3412 - Organic Chemistry II, BIOL 2416 - Genetics, and BIOL 3403 - Molecular Biology, or equivalents. Offered on sufficient demand.

BIOL 5329 - Plant Adaptations

3 sem. hrs. (3:0) Emphasis on living gymnosperms and angiosperms and their adaptive significance. Offered on sufficient demand.

BIOL 5334 - 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.

BIOL 5335 - Aquatic Microbiology

3 sem. hrs. (3:0) Types and distribution of microorganisms in aquatic environments. Interactions with other organisms. Role in nutrient cycling, degradation of organic substances, pollution, water purification. Prerequisite: BIOL 2421 - Microbiology, or equivalent. Offered spring semester of odd-numbered years.

BIOL 5340 - Genomics, Proteomics and Bioinformatics

3 sem. hrs. (3:0) Integrative biological study using genome-wide approaches and bioinformatics. The "-omics" technologies (Genomics, Proteomics, Metabolomics, etc) will be reviewed. Applications to understanding biological function in various biological disciplines will be emphasized. Offered during fall. Cross listed with MARB 6342. Prerequisites: BIOL 2416 - Genetics, and BIOL 3410 - Cell Biology or CHEM 4301 - Biochemistry I, or equivalents. Offered fall semester every year.

BIOL 5355 - Public Aquarium and Animal Care Operations

3 sem. hrs. This course examines the unique requirements needed for aquariums and zoos to balance animal care and health with public display for general education and conservation research. 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 5392 - Thesis Proposal

3 sem. hrs. Thesis track students must complete a proposal for their thesis project. A proposal is considered complete when it is approved and signed by all members of the student's graduate advisory committee. Open only to thesis track students in the MS Biology program. Qualified students can enroll in any semester with the approval of their graduate advisory committee chair. Offered any semester upon request by a student and consent of the chair of the student's graduate advisory committee.
A course section will be created for the student to enroll.
If BIOL 5329 is not completed by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester.

BIOL 5393 - Thesis Research

3 sem. hrs. Implementation of the Thesis Proposal, and the production of a rough draft of the thesis submitted for initial editing and comment. A course section will be created for the student to enroll. Students can enroll in any semester with the approval of their graduate advisory committee chair. Prerequisite: BIOL 5392 - Thesis Proposal. Offered any semester upon request by a student and consent of the chair of the student's graduate advisory committee.

If BIOL 5393 is not completed by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester.

BIOL 5394 - Thesis Submission

3 sem. hrs. The final draft of the thesis is completed, approved by the graduate advisory committee, and is readied for distribution. Students can enroll in any semester with the approval of their graduate advisory committee chair. Prerequisite: BIOL 5392 - Thesis Proposal. Prerequisite or Corequisite: BIOL 5393 - Thesis Research. Offered any semester upon request by a student and with the consent chair of the student's graduate advisory committee.
A course section will be created for the student to enroll.
If BIOL 5394 is not completed by the end of the semester, a grade of "IP" will be

awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the studet must enroll and and complete this course in a subsequent semester.

BIOL 5396 - Directed Independent Study

1-3 sem. hrs. Study in areas of current interest. Credit is not given for research on the thesis project. A total of six semester hours of Directed Independent Study may be counted toward the MS degree. Offered any semester upon request by a student and consent of the instructor.

BIOL 5397 - Directed Research

3 sem. hrs. (3:0) For students in the MS Biology Professional track. Field, laboratory, and/or library research that results in the production of the professional paper, its approval by the graduate advisory committee, and its final submission. Students can enroll in any semester with the approval of their graduate advisory committee chair. This course must be successfully completed for the professional track student to complete the MS degree. Offered any semester upon request by a student and consent of the chair of the student's graduate advisory committee.
A section will be created for the student to enroll.
IF BIOL 5397 is not completed by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punative grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester.

BIOL 5406 - Immunology

4 sem. hrs. (3:3) An in-depth study of immunology. Emphasizes function and interaction of specific cells, cytokines, lymphokines, antibodies and molecules that are the essential components of the immune system. The course includes up-to-date coverage of both innate and adaptive immunity, and the immune system in health and disease. Prerequisite: BIOL 2421 - Microbiology or equivalent. BIOL 3410 - Cell Biology or BIOL 3345 - Cell Physiology are strongly 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 5408 - Microbial Ecology

4 sem. hrs. (3:3) Relationships between microorganisms and their biotic and abiotic environments. Role of microorganisms in biogeochemical cycling. Methodology in

microbial ecology. Biotechnological aspects. 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 5410 - Mammalogy

4 sem. hrs. (3:3) The course is designed for graduate students in biology wanting to acquire a more detailed working knowledge and appreciation of mammalian diversity in structure, function, ethology, and ecology. Knowledge and skills acquired in this course will be useful to field and laboratory studies in ecology, evolution, animal behavior, biogeography, wildlife management, and related disciplines. 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 5411 - Ethology

4 sem. hrs. (3:3) Adaptive aspects of animal behavior. 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 5414 - Growth and Development

4 sem. hrs. (3:2) Special topics involving growth and development in plants and animals. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered on sufficient demand.

BIOL 5415 - Biology of Estuarine Organisms

4 sem. hrs. Systematics, distribution, and ecology of estuarine macrofauna and macroflora. Weekend field trips and individual study required. Prerequisite: BIOL 3413. Corequisite: SMTE 0091.

BIOL 5417 - 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 (or equivalent). 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 5420 - Application of Molecular Techniques

4 sem. hrs. (2:4) Application of DNA-RNA technology to selected scientific problems. Emphasis on current research techniques. Prerequisites: BIOL 3403 - Molecular Biology and CHEM 3411 - Organic Chemistry I, or equivalents. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered on sufficient demand.

BIOL 5422 - Plant Taxonomy

4 sem. hrs. (3:3) Experimental and analytical approaches to plant variation and evolution, breeding systems, cyto- and molecular genetics, hybridization and phylogeny. The course will present a foundational approach to the methods, research and terminology of plant systematics and summarize information on the most recent knowledge of evolutionary relationships as well as practical information vital to field work. 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 5425 - Ornithology

4 sem. hrs. (3:3) The course is designed for graduate students in biology wanting to acquire a more detailed working knowledge and appreciation of avian diversity in structure, function, ethology, and ecology. Knowledge and skills acquired in this course will be useful to field and laboratory studies in ecology, evolution, animal behavior, biogeography, wildlife management, and related disciplines. 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 5429 - Marine Botany

4 sem. hrs. (3:3) Marine plants are a diverse group that includes unicellular algae, seaweeds, seagrasses, salt marshes, and mangrove forests. The goal is to present taxonomic, physiological, chemical, and ecological aspects of marine plants, their adaptations, and how abiotic and biotic factors interact in their communities. The use of recent journals and original scientific research will allow the student to evaluate anthropogenic effects to these communities and develop methods of restoration and management. 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 5430 - Marine Plankton

4 sem. hrs. (3:3) Investigation of the systematics, distribution, and ecology of marine plankton. Cross listed with MARB 6430. 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 5431 - Phycology

4 sem. hrs. (3:3) Study of the major groups of freshwater and marine algae; morphology, ecology, systematics, life cycles, and physiology. Laboratories emphasize collection, identification, and culturing techniques. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of even-numbered years.

BIOL 5432 - Ichthyology

4 sem. hrs. (3:3) The study of fish encompassing species diversity, natural history, and evolutionary and ecological relationships of fishes. This course will consist of four major parts: (1) Evolution, (2) Systematics, (3) Biology, and (4) Ecology of fish. Laboratory identification of marine and freshwater fishes from the University archives and collected during field excursions. 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 5435 - Biological Microtechniques

4 sem. hrs. (2:4) The theory and practice of using histochemical and microscopic techniques to prepare tissues and small specimens for research analysis. Prerequisites: CHEM 3411 - Organic Chemistry I, or equivalent. 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 5436 - Marine Ecological Processes

4 sem. hrs. (3:3) Advanced studies in structure and habitats of marine environments. Emphasis on factors influencing distribution of marine organisms, including field trips to areas along the Texas coast. Prerequisite: BIOL 3428 - Principles of Ecology, or equivalent. 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 5442 - Herpetology

4 sem. hrs. (3:3) A global perspective and current research topics on the biology of amphibians and reptiles. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered summer semester of even-numbered years.

BIOL 5446 - Tropical Ecology and Conservation

4 sem. hrs. (3:3) This is an overview course in major ecosystems in both the New and Old World tropics, the ecological principles at work in these systems, and the current threats and conservation approaches being used. It will be a hybrid course including lectures and journal readings/discussion (seminar-style). Prerequisite: BIOL 3428 or permission of instructor. Corequisite: SMTE 0091.

BIOL 5452 - 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. 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 5590 - Special Topics

1-5 sem. hrs. (1:0-3:4) An advanced study of a biological topic. May be repeated with full credit in another area of biology. Topics vary by semester. 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 5609 - Field and Sampling Techniques

6 sem. hrs. (3:9) Experience in field studies, organizing field notes, collecting and methods of preserving organisms for teaching and museum purposes. The course includes field ecological sampling methods, environmental data collection, safety, logistics, and proper scientific equipment operation. Requires permission of the 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.

BIOL 5940 - Project Research

1-9 sem. hrs. (ind. study) Research related to the MS project. Open only to degree candidates in biology with consent of the graduate advisor. This course may be repeated as needed but a maximum of 4 hours can be applied to the MS degree in biology. Course is taken as credit/non-credit. Students can enroll in any semester with the approval of their graduate advisory committee chair. Offered any semester upon request by a student and consent of the instructor.

Biomedical Sciences

BIMS 5311 - Principles of Oncology^

3 sem. hrs. (3:0) This course is a study of the profile of cancer cells, and the various causes of human cancer. Contribution of heredity, environmental factors, and infectious agents to oncogenesis will be studied. The latest published information on cancer screening, diagnosis, and treatment will be discussed. Various types of cancer will be presented. Prerequisite: BIOL 2416 - Genetics, or equivalent. Limited to individuals who have not taken BIMS 4311 - Biology of Cancer for undergraduate credit. Offered fall semester of even-numbered years.

BIMS 5323 - Neurosciences

3 sem. hrs. (3:0) The anatomy and physiology of the vertebrate nervous system with emphasis on functions and actions of the central nervous system. Prerequisites: CHEM 3412 - Organic Chemistry II, or equivalent. Limited to individuals who have not taken BIMS 4323 - Neurobiology for undergraduate credit. Offered spring semester every year.

BIMS 5327 - Toxicology

3 sem. hrs. (3:0) This course will provide students requisite knowledge to design and supervise appropriate tests in vivo and in vitro in order to investigate the toxicity of substances and to assess the implications of the results. Students will be expected to have an appreciation of the toxicity of a number of representative compounds and be able to apply their knowledge to the evaluation of chemicals in pharmaceutical preparations, agriculture, food and consumer products, the work place and the environment. Limited to individuals who have not taken BIMS 4327 - Introduction to Toxicology for undergraduate credit. Offered summer semester every year.

BIMS 5330 - Biology of Aging^

3 sem. hrs. (3:0) An examination of one phase of the developmental process - the aging organism. Perspectives of aging in human beings and other organisms are reviewed.

Topics include: demographics of human aging; research methodologies and measurements; development of age-related diseases; theories of aging; and anti-aging interventions. Prerequisites: CHEM 3412 - Organic Chemistry II, CHEM 4402 - Biochemistry II, and BIOL 3430 - Physiology, or equivalents. Limited to individuals who have not taken BIMS 4330 - Biological Basis of Aging for undergraduate credit. Offered on sufficient demand.

BIMS 5333 - Public Health Entomology

3 sem. hrs. (3:0) The medical, veterinary and forensic importance of arthropods: especially their relationships with host organisms, their role as hosts and vectors of disease-causing organisms, and strategies for their control. Involves discussion of research papers on these topics. Limited to individuals who have not taken BIMS 4333 - Medical Entomology for undergraduate credit. Offered on sufficient demand.

BIMS 5334 - Medical Genetics

3 sem. hrs. (3:0) A study of genetic influences on health and disease. Prerequisites: CHEM 3412 - Organic Chemistry II and BIOL 2416 - Genetics, or equivalents. Limited to individuals who have not taken BIMS 4334 - Human Genetics for undergraduate credit. Offered on sufficient demand.

BIMS 5374 - Molecular Medical Microbiology

3 sem. hrs. (3:0) Study of common pathogenic microorganisms in eukaryotic animals. Includes bacterial, viral, parasitic, and fungal infections, with emphasis on epidemiology, immunity, pathogenesis and treatment. Stress placed on case studies and didactic lectures, with presentations of updates on molecular basis of diseases based on current literature. Prerequisite: BIOL 2421 - Microbiology, or equivalent. BIOL/BIMS 4406 - Immunology is strongly recommended. Limited to individuals who have not taken BIMS 4374 - Medical Microbiology for undergraduate credit. Offered fall semester every year.

BIMS 5375 - Microbial Pathogenesis^

3 sem. hrs. (3:0) Study of the mechanisms by which microorganisms invade a host and produce pathological symptoms associated with disease. Emphasis is on the chemical and molecular interaction between various pathogens and host cells, especially immune responses. Involves discussion of research papers on these topics. Prerequisite: BIOL 2421 - Microbiology, or equivalent. Limited to individuals who have not taken BIMS 4375 - Mechanisms of Microbial Pathogenesis for undergraduate credit. Offered summer semester of even-numbered years.

BIMS 5396 - Directed Independent Study

1-3 sem. hrs. Study in an area of current interest. Credit is not given for research on the thesis project. A total of six semester hours of Directed Independent Study may be counted toward the MS degree. Prerequisite: Consent of the instructor. Offered any semester upon request by a student and consent of the instructor.

BIMS 5410 - Cells and Tissues

4 sem. hrs. (3:3) Analysis of tissues: their cellular and sub-cellular components, and the unique properties that emerge when they interact to form organs. Lecture and laboratory emphasize normal mammalian tissues, and students explore other aspects of tissue biology through individual research projects. Prerequisite: Completion of a college-level course in anatomy is strongly recommended. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Limited to individuals who have not taken BIMS 4410 - Histology for undergraduate credit. Offered fall semester of even-numbered years.

BIMS 5590 - Special Topics

1-5 sem. hrs. (1:0-3:4) Variable content. Advanced study of a biomedical topic that may include current literature research. May be repeated for credit when topics are sufficiently different. 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.

Business Law

BLAW 5330 - Environmental Law and Policy

3 sem. hrs. This course offers a broad-based assessment of legal and legislative environmental issues affecting American industry and culture. Emphasis on key political, economic, social, legal and regulatory issues affecting current environmental law.

BLAW 5345 - Business Ethics

3 sem. hrs.

The 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. Offered online only. Students who receive credit for ACCT 4345 or ACCT 5345 cannot also receive credit for BLAW 5345.
This course does not meet the requirements of the Texas State Board of Public Accountancy Rule 511.58 for those students who plan to take the CPA Exam.

BLAW 5370 - Seminar

1-3 sem. hrs. Seminar in an identified topic in business law. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

BLAW 5396 - Directed individual Research Or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Chemistry

CHEM 5302 - Current Trends in Chemistry

3 sem. hrs. (3:0) The study and discussion of current topics and research efforts in chemistry. The course is intended to provide teachers with background and understanding that will enrich their classroom presentations in the chemistry curriculum. May be repeated for credit when topics vary. Offered on sufficient demand. no

CHEM 5303 - Research in the Chemical Sciences

3 sem. hrs. 3:0 Studies and analysis of pertinent literature. May be repeated for credit, but credit may count only once towards the degree plan. Course is taken as credit/no credit. Offered on sufficient demand.

CHEM 5317 - Advanced Instrumental Analysis

3 sem. hrs. 3:0 Advanced study of instrumental methods of analysis: spectroscopy, chromatography, and electrochemical methods. Prerequisite: CHEM 3418 Offered on sufficient demand.

CHEM 5321 - Molecular Ecology

3 sem. hrs. 3:0 A laboratory intensive graduate course that emphasizes the use of biochemical and molecular techniques to address ecological questions. Field sampling,

sample preparation, biochemical and molecular genetic assays, statistical analysis and computer-based modeling techniques are used in a project-based approach to assess population genetic diversity, structure and migration rates in a key ecosystem species. Such estimates are of increasing concern for conservation and habitat management. Offered on sufficient demand.

CHEM 5322 - Supramolecular Chemistry

3 sem. hrs. 3:0 The course introduces advanced topics covering the areas synthetic molecular receptors, host-guest chemistry, biochemical self-assembly, crystal engineering and molecular templation. Supramolecular chemistry has been called "chemistry beyond the molecule" focusing on intermolecular interactions and forces leading to the formation complexes and superstructures in solution and in the solid-state. The material takes a classical approach to chemical pedagogy that instills the excitement of modern research areas in the chemical sciences. The course is designed at an advanced level for graduate students. Organic Chemistry II (CHEM 3412) Offered on sufficient demand.

CHEM 5341 - Advanced Organic Chemistry

3 sem. hrs. 3:0 The course introduces advanced topics covering the areas of molecular structure and thermodynamics as well as reactivity, kinetics, and mechanisms of organic molecular architectures and ensembles. The material takes a classical approach to chemical pedagogy that instills the excitement of modern research areas in the chemical sciences. The course is designed at an advanced level for graduate students. Organic Chemistry II (CHEM 3412). Offered on sufficient demand.

CHEM 5352 - Computational Chemistry

3 sem. hrs. The course will include the investigation of the uses and outcomes of computational chemistry, including both classical (non-quantum) simulations of molecular systems and quantum mechanical modeling of molecules. Emphasis will be on constructing an appropriate molecular model, performing the appropriate calculation, and interpreting the results of the calculation. Offered on sufficient demand.

CHEM 5361 - Organic Geochemistry

3 sem. hrs. (3:0) An introduction to the properties and cycling of natural organic materials will be presented to benefit graduate students studying marine systems. The course is designed to follow the geologic cycle of organic matter, from production in living organisms to burial in sediments and preservation in the depositional record. Specific topics include factors controlling preservation in sediments, methanogenesis,

diagnetic alterations of organic compounds, fossil fuel production and degradation, life in the deep biosphere, biomarkers for ancient life, and isotopic variations in the sedimentary record. Offered on sufficient demand.

CHEM 5362 - Chemical Oceanography

3 sem. hrs. 3:0 This course will cover both chemical processes in the oceanic environment and how biology, geology and physics affect the chemistry. Topics include air-sea interactions, water column chemistry, and reactions in sedimentary environments. Students are expected to participate in the teaching process through their involvement in small groups, class discussions, and modeling/simulation exercises.
Prerequisites: CHEM 1311, CHEM 1312, or permission of instructor. Offered on sufficient demand.

CHEM 5369 - Advanced Molecular Spectroscopy

3 sem. hrs. 3:0 The course is taught at the graduate level with the curriculum focusing on the advanced spectroscopic methods of molecular structure determination. The course aims to present foundational theoretical concepts of different molecular spectroscopy techniques including nuclear magnetic resonance, infrared, ultraviolet-visible, and mass spectroscopies and how these techniques are used to interpret spectra of unknown and structurally complex molecular analytes. This includes modes of absorption and emission, qualitative and quantitative uses and potential problems and limitations. The course has been designed for students who have completed organic chemistry II lecture and laboratory during their undergraduate career. Offered on sufficient demand.

CHEM 5375 - Stable Isotope Biogeochemistry

3 sem. hrs. This course teaches stable isotope systematics of five common light elements - carbon, nitrogen, hydrogen, oxygen and sulfur in biological, geological, and systems. Course material includes basic principles, analytical methods, thermodynamic and kinetic fractionations, and applications of stable isotope analyses in a wide range of natural systems. This course is recommended to graduate students in chemistry, geology, biological sciences, and coastal and marine system science. Prerequisite: CHEM 1412, or permission of the instructor. Offered on sufficient demand.

CHEM 5392 - Thesis Proposal

3 sem. hrs.

Review of the literature on a thesis topic. Completion of a written research proposal including proposed experimental design. Prerequisites: Open only to degree candidates in chemistry. Requires consent of the graduate advisor.

Note: If proposal is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Spring, Summer, Fall.

CHEM 5394 - Thesis Submission

3 sem. hrs. 3:0

Thesis defense and completion of the thesis manuscript including acceptance of the final copy by the advisory committee. May be repeated; no more than three hours may be taken per semester. Prerequisites: Open only to degree candidates in chemistry. Requires consent of the graduate advisor and qualitative grade for CHEM 5392 Thesis Proposal.

Note: If thesis is not approved by the advisory committee by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Spring, Summer, Fall.

CHEM 5397 - Directed Research

3 sem. hrs. 3:0

Chemistry Professional Track students only. Collection, organization and submission of research data. To receive a qualitative grade, the student must successfully defend the professional project, the student's graduate committee must accept the professional paper, and a final copy must be on file in the Dean's Office. If the semester ends before these are accomplished, an "In Progress" is recorded and the course must be repeated. Prerequisite: Consent of the student's graduate advisor.
Note: If professional paper is not approved by the graduate committee by the end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Spring, Summer, Fall.

CHEM 5417 - Advanced Environmental Chemistry

4 sem. hrs. (3:3) Advanced study of the impact of chemistry on the environment. Topics will include the chemistry of the natural environment and the modifications to that environment brought about by human activities. Includes readings in current literature

and research on an environmental issue. Includes a laboratory component. Prerequisite: CHEM 1412.

CHEM 5421 - Aquatic Chemistry

4 sem. hrs. (3:3) A study of the chemistry of natural and polluted waters. Topics include chemical kinetic and equilibrium principles as applied to natural and polluted waters, and the ecotoxicological aspects of aquatic chemistry. In addition, critical readings in current literature and research on environmental issues will be discussed. Includes a laboratory component.

CHEM 5431 - Environmental Instrumental Analysis

4 sem. hrs. (3:3) A presentation of standard instrumental tools and instrumental methods used for the characterization of environmental pollutants and their distribution in the environment. Includes a laboratory component.

CHEM 5490 - Advanced Topics

1-4 sem. hrs. (1:0-3:2) Subject materials variable. Advanced topics including current literature research. May be repeated for credit when topics are sufficiently different. Prerequisite: Permission of instructor.

CHEM 5596 - Directed Independent Study

1-5 sem. hrs. Study in areas of current interest. (A total of six hours of Directed Independent Study may be counted toward the MS degree.)

CHEM 5940 - Project Research

1-9 sem. hrs. Student research on a project of interest. This variable credit hour course may be repeated in different semesters. Student may count up to six hours of CHEM 5940 toward the Chemistry Thesis Track or Professional Track with approval from the program coordinator. Graded CR/NC. Spring, Summer, Fall.

CHEM 5993 - Thesis Research

1-9 sem. hrs. Chemistry Thesis Track students only. Collection, organization, and analysis of research data. Prerequisite: Consent of the graduate advisor. Spring, Summer, Fall.

CHEM 6321 - Molecular Ecology

3 sem. hrs. A laboratory intensive graduate course that emphasizes the use of biochemical and molecular techniques to address ecological questions. Field sampling, sample preparation, biochemical and molecular genetic assays, statistical analysis and computer-based modeling techniques are used in a project-based approach to assess population genetic diversity, structure and migration rates in a key ecosystem species. Such estimates are of increasing concern for conservation and habitat management. Offered on sufficient demand.

CHEM 6362 - Chemical Oceanography

3 sem. hrs. This course will cover both chemical processes in the oceanic environment and how biology, geology and physics affect the chemistry. Topics include air-sea interactions, water column chemistry, and reactions in sedimentary environments. Students are expected to participate in the teaching process through their involvement in small groups, class discussions, and modeling/simulation exercises. Offered on sufficient demand. Prerequisites: CHEM 1411, CHEM 1412, or permission of instructor.

CHEM 6375 - Stable Isotope Biogeochemistry

3 sem. hrs. This course teaches stable isotope systematics of five common light elements - carbon, nitrogen, hydrogen, oxygen and sulfur in biological, geological, and systems. Course material includes basic principles, analytical methods, thermodynamic and kinetic fractionations, and applications of stable isotope analyses in a wide range of natural systems. This course is recommended to graduate students in chemistry, geology, biological sciences, and coastal and marine system science. Prerequisite: CHEM 1412, or permission of the instructor.

CHEM 6417 - Advanced Environmental Chemistry

4 sem. hrs. Advanced study of the impact of chemistry on the environment. Topics will include the chemistry of the natural environment and the modifications to that environment brought about by human activities. Includes readings in current literature and research on an environmental issue. Includes a laboratory component. Prerequisite: CHEM 1412

CHEM 6421 - Aquatic Chemistry

4 sem. hrs. A study of the chemistry of natural and polluted waters. Topics include chemical kinetic and equilibrium principles as applied to natural and polluted waters, and the ecotoxicological aspects of aquatic chemistry. In addition, critical readings in current

literature and research on environmental issues will be discussed. Includes a laboratory component.

Coastal and Marine System Science

CMSS 5340 - Ocean Resources

3 sem. hrs. 3:0

Investigation of topics related to the discovery, distribution, and exploitation of marine resources of the ocean with a focus on the Gulf of Mexico, including the impact of resource exploitation on biological systems, and the development of marine policy. Usually offered in Fall of odd years.

CMSS 5392 - Thesis I: Thesis Proposal

3 sem. hrs. 3:0 Thesis students must submit a completed proposal for their thesis project. A course section will be created for the student to enroll. Upon successful completion and submission of the proposal signed by the graduate committee of the student, students may then register for CMSS 5393 Thesis Research. Open only to M.S. Thesis Degree Candidates in CMSS.

CMSS 5393 - Thesis II: Thesis Research

3 sem. hrs. 3:0 Implementation of the Thesis Proposal, and the production of a rough draft of the thesis submitted to the graduate committee of the student for initial editing and comment. A course section will be created for the student to enroll. Prerequisite: CMSS 5392 - Thesis Proposal.

CMSS 5394 - Thesis III: Thesis Submission

3 sem. hrs. 3:0 Completion of the final draft of the thesis, signed by the graduate committee of the student and ready for binding and distribution. A course section will be created for the student to enroll. Prerequisite: CMSS 5393 Thesis Research. May be taken concurrently with CMSS 5393 Thesis Research.

CMSS 5596 - Directed Independent Study

1-5 sem. hrs. Study in areas of current interest. A total of six semester hours of Directed Independent Study may be counted towards the CMSS M.S. degree. Fall, Spring, Summer.

CMSS 5940 - Thesis Project Research

1-9 sem. hrs. Research related to the CMSS M.S. thesis project. Open only to M.S. students in CMSS with consent of the graduate advisor. Up to six hours may count as credit toward regular graded (non-research, non-variable credit) elective coursework for M.S. degree requirement in Coastal and Marine System Science.

CMSS 6303 - Natural Systems Analysis

3 sem. hrs. (3:0) Statistical analysis for data collected in several variables. Topics include sampling from multivariate normal distribution, multivariate analysis of variance, discriminant analysis, principle components, and factor analysis. Prerequisite: MATH 6315 - Statistical Methods in Research I*^, undergraduate equivalent, or consent of instructor. Usually offered every Fall.

CMSS 6305 - Natural Systems Modeling

3 sem. hrs. (3:0) Modeling and analysis of deterministic and stochastic dynamical systems, including investigation of model behavior and stability. Theory will be applied to research natural environmental and biological systems such as multi-species systems, carbon circulation in the biosphere, Nutrients-Phytoplankton-Zooplankton models, etc. Prerequisites: MATH 6315- Statistical Methods in Research I and MATH 6316 Statistical Methods in Research II, or permission of instructor. Usually offered every Spring.

CMSS 6307 - Coastal and Marine Systems

3 sem. hrs. 3:0

Description of coastal and oceanic ecosystems to provide an overview of the fundamental concepts of the abiotic and biotic components, physical-chemical processes, and interactions with environmental and human systems. Usually offered every Spring.

CMSS 6308 - Coastal Geoenvironments and Change

3 sem. hrs. (3:0) Investigations of the origin, character, and processes of coastal geoenvironments with an emphasis on tracking historical and projecting future changes, including examination of the interactions of geological and biological processes and impacts of human activities on coastal depositional systems.

CMSS 6310 - Fundamentals of Remote Sensing

3 sem. hrs. 3:0 Fundamental theory of satellite/airborne remote sensing techniques, sensor performance and calibration, and the scientific applications for land, ocean and atmosphere observations. Topics include physical principles of remote sensing, radiometry, sensors and sensor technology from infrared to microwave sensing, and scientific applications for land, ocean and atmosphere observations. Cross listed with ESCI 6310. Usually offered in Fall of odd years.

CMSS 6312 - Communicating Science Seminar

3 sem. hrs.

Covers communication topics ranging from proposal writing to professional presentations with a minor emphasis on additional non-traditional communication formats. Must be taken to fulfill degree plan requirements by all Marine Biology graduate students and is recommended in the first spring of the degree.

CMSS 6323 - Experimental Design

3 sem. hrs. (3:0) Fundamental concepts of mathematical ecology and the design and analysis of environmental experiments. Students Learn SAS programming and procedures to compute ecological metrics, data management techniques, exploratory analysis, power, sample size, checking assumptions, and analysis of variance models to compute a priori and post hoc hypothesis tests. Prerequisite: Math 5315 Statistical Methods in Research I, undergraduate equivalent, or consent of instructor. Usually offered every Spring.

CMSS 6327 - Physical Oceanography

3 sem. hrs. (3:0) Succinct review of basic concepts of physical oceanography followed by general presentations and discussions in three selected areas: global ocean circulation, circulation along the Gulf of Mexico continental shelf, and ocean-atmosphere interaction and impacts on climate. A significant portion of the class is based on student guided reading assignments. Prerequisites: Direct interest in physical oceanography, background that includes introductory college physics and basic mathematical knowledge of calculus and simple differential equations, or approval of class instructor.

CMSS 6333 - Paleo Systems

3 sem. hrs. (3:0) Study of the interrelationships of ancient organisms and their environment through interpretation of the fossil record, analog communities, and oceanographic data, such as carbon and oxygen isotopes. Theories and methods of reconstructing terrestrial, marine and freshwater biotic communities and environments.

Review of classic paleoecological and paleoceanographic studies as well as current research. Prerequisites: BIOL 3428 Principles of Ecology, GEOL 1401 Historical Geology, and ESCI 3351 Oceanography, or GEOL 4316 Marine Geoscience

CMSS 6334 - Geological Oceanography

3 sem. hrs. (3:0) Integrated examination of the geology and geochemistry of the marine environment. Evolution of ocean basins, continental margins and plate boundaries; geology of oceanic crust; controls on the types, origin, and distribution of marine sediments; and introduction to paleoceanography. Prerequisites: ESCI 3351 Oceanography, or GEOL 4316 Marine Geoscience, or permission of instructor. Usually offered in Spring of even years.

CMSS 6352 - Environmental Forecasting

3 sem. hrs. (3:0) Statistical techniques (classic and Bayesian) and new artificial intelligence based techniques, such as neural networks, for the analysis of environmental systems with large datasets. Prerequisite: CMSS 6305. Usually offered in Fall of odd years.

CMSS 6357 - Global Geochemical Cycles and Change

3 sem. hrs. (3:0) Integrated examination of global-scale geochemical cycles operating within and between the four components of the Earth system (atmosphere, hydrosphere, biosphere, and solid Earth) and their role in the evolution of our planet. Prerequisites: CHEM 1411 General Chemistry I, CHEM 1412 General Chemistry II and CHEM 3411 Organic Chemistry I. Usually offered in Spring of odd years.

CMSS 6358 - Ocean and Estuarine Acidification

3 sem. hrs. This course focuses on introducing the concept of acidification of marine ecosystems (estuaries and oceans) and biological and ecological responses to the acidification; the geological past will also be examined in the context of current ocean acidification. Numerical simulations using the software CO2SYS and interpretation of open-access global databases on global ocean and estuarine acid-base dynamics will be introduced in this class. Prerequisites: CHEM 1411 and CHEM 1412 or their equivalents.

CMSS 6359 - Marine Ecosystem Dynamics

3 sem. hrs. (3:0) Investigation of the interactions between organisms and physical processes that regulate marine ecosystem functions. Usually offered every Fall.

CMSS 6360 - COMPUTER PROGRAMMING IN EARTH SYSTEM SCIENCES

3 sem. hrs. This course is to enhance the programming skills of graduate students under various scientific programming environments. The focus is on the data analysis and problem-solving using Python, R, MATLAB and IDL. The contents of the course include the basic concepts of the operating systems and high-level programming languages, basics of programming in Python, general data analysis methods and tools, common scientific data formats, publication quality scientific graphics, the critical steps of building a large programming project.

CMSS 6362 - Global Change and Its Impact on Aquatic Ecosystems

3 sem. hrs. (3:0) This course will introduce students to the effects of climatic and anthropogenic change on aquatic ecosystem structure and function. Includes readings from the current literature and development of a research proposal. Cross-listed with MARB 6362.

CMSS 6370 - Coastal Management and Ocean Law

3 sem. hrs. (3:0) Intensive study of the 1972 National Coastal Zone Management Act and subsequent coastal management programs. The Texas program, which is administered by the General Land Office, will be dealt with in depth as the central focus of the course. Statutory law relating to citizen, state, and federal rights and duties as they impact coastal and maritime law will be studied including applicable Texas real property law. Students will use case law studies relating to those rights and duties and Public Trust Doctrine cases to gain an integral part of understanding the responsibilities of governments and rights of citizens. Usually offered every Fall.

CMSS 6372 - Environmental Sustainability Economics

3 sem. hrs. (3:0) This course will introduce the fundamental concepts of neoclassical microeconomics and ecological economics and apply them to environmental and sustainability issues. Usually offered in Fall of even years.

CMSS 6401 - Mathematical Concepts for System Science

4 sem. hrs. (3:3) Course focused on calculus, linear algebra, and differential equations used in coastal, marine, and environmental settings. The course is designed for entering doctoral students in the CMSS program as well as other interested science graduate students of the College of Science and Engineering. Course concepts are approached within the context of coastal and marine systems. Prerequisites: Introductory Statistics

MATH 1342 or 1442 and Calculus I MATH 2413, or equivalents, or permission of instructor.

CMSS 6590 - Advanced Topics

1-5 sem. hrs. An advanced study of an environmental systems topic. May be repeated with full credit in another area of environmental systems.

CMSS 6596 - Directed independent Study

1-5 sem. hrs. Study in areas of current interest. A total of six semester hours of Directed Independent Study may be counted towards the Ph.D. degree.

CMSS 6996 - Research

1-9 sem. hrs. Independent research conducted under supervision of an advisor. Open to Coastal and Marine System Science students who have not yet passed the qualifying exam and with consent of their graduate advisor. The course is graded with an S or U, and may be repeated.

CMSS 6998 - Dissertation Research

1-9 sem. hrs. Research related to Ph.D. dissertation project. Open only to degree candidates having passed the qualifying exam in Coastal and Marine System Science with consent of their graduate advisor. The course is graded with an S or U, and may be repeated.

CMSS 6999 - Dissertation Defense

3-9 sem. hrs. Open only to degree candidates in Coastal and Marine System Science with consent of their graduate advisor. Students should enroll in this course during the last semester of the CMSS PhD program. To successfully complete this course the student must pass the dissertation defense as well as have a final copy of the dissertation signed by the full graduate committee and approved for binding and distribution. A course section will be created for the student to enroll. A grade of Credit/No Credit will be assigned for the class with the possibility to assign the grade of IP or In Progress. If a grade of IP is assigned, the course must be repeated the following semester(s) until the course is passed.

Communication

COMM 5301 - Introduction to Communication Scholarship

3 sem. hrs. This is a practical introduction to scholarship in the Communication discipline with emphasis in: reading and understanding academic source material; finding source material in scholarly literatures; writing academic research papers; editing and revising your own work; and presenting scholarship. Completing this course will prepare you to think, write, and present ideas as an advanced scholar in the Communication discipline.

COMM 5302 - Seminar in Communication Theory

3 sem. hrs. This course represents an advanced treatment of theory in the Communication discipline. Theoretical traditions and theories discussed in this course are used by scholars to explain and/or interpret communication processes in such areas as interpersonal, intercultural, organizational, and media settings

COMM 5303 - Research Methodology

3 sem. hrs. This course is designed as an intellectual and practical introduction to communication research at the graduate level, including epistemological, intellectual, and practical issues associated with qualitative, quantitative, and critical methods research.

COMM 5304 - Cultural Studies

3 sem. hrs. This course examines theoretical approaches to cultural studies; focus on interdisciplinary research of media audiences and covering a range of methods and theoretical frameworks; concentration varies.

COMM 5306 - Instructing and Consulting

3 sem. hrs. This course will draw upon academic research in instructional communication to provide a foundation for aligning the instructional skills and knowledge necessary for achieving organizational strategic goals and objectives.

COMM 5307 - Communication and Organizations

3 sem. hrs. This course surveys traditional and contemporary readings in organizational communication. Readings cover such topics as the relationship of communication and organizational structure, process, stakeholders, leadership, decision making, culture, and identity.

COMM 5308 - Communicating Leadership

3 sem. hrs. This course focuses on the process of influence that takes place through communication to achieve goals or to produce change from a collective of people. This course will include instruction on the various approaches to leadership, process of leadership, and the role that leadership plays in a variety of contexts.

COMM 5309 - Seminar in Interpersonal Communication

3 sem. hrs. This seminar focuses on terminology, key theories, and functions of interpersonal communication as it pertains to the formation and maintenance of relationships.

COMM 5310 - Seminar in Intercultural Communication

3 sem. hrs. This course explores the relationship between communication and culture through scholarly readings, discussions, and critiques in three subfields of Intercultural Communication: cultural communication, cross-cultural communication, and intercultural communication.

COMM 5311 - Seminar in Persuasion Theory

3 sem. hrs. This course investigates traditional and contemporary theories of persuasion and is an in-depth study of the major concepts of persuasive communication.

COMM 5312 - Seminar in Gender Communication

3 sem. hrs. This seminar focuses on terminology, key theories, and cutting-edge research within the study of gender communication.

COMM 5314 - Small Group Decision Making

3 sem. hrs. This course will focus on the theory and practice of small group decision making, by considerating both effective work groups and small groups that have made faulty decisions.

COMM 5315 - Family Communication

3 sem. hrs. Overview of theory and research on communication in the family. Content focuses on definitions, frameworks, perspectives, theories, and outcomes tied to the study of communication processes within the family.

COMM 5330 - International Leadership

3 sem. hrs. Introduces graduate and advanced students to the study of leadership in international and intercultural settings with the emphasis on the context of mediated communication.

COMM 5331 - Seminar in Nonverbal Communication

3 sem. hrs. This seminar will educate students about the history, key theories, types and functions of nonverbal communication, or message with words.

COMM 5335 - Advanced Crisis Communication

3 sem. hrs. Examines crisis communication from the perspective of academic researchers and practitioners. Includes the analysis of crisis communication research, reviews the elements of an effective crisis communication plan, and centers on case study analysis of best and worst practices in crisis planning, prevention, and response.

COMM 5340 - Public Relations Theory

3 sem. hrs.

A discussion of theories of excellence in public relations and crisis communication through the exploration of models, roles, communication, media, ethics, and culture to serve as a foundation for professional practice.

COMM 5346 - Seminar in New Media

3 sem. hrs. Explores contemporary instances of new and emerging media platforms, especially as facilitated through digital media technologies, as they continue to disseminate more widely as portals of communication. Students will engage with specific issues in new media through the lenses of various cultural theories in order to gain a greater understanding of the scope of new media, its culture, and the relationships that exist between machines and humans, as well as those between society and technology.

COMM 5390 - Special Topics in Communication

3 sem. hrs. This course is an intensive exploration of selected topics in communication study. May be repeated when topics vary.

COMM 5395 - Thesis

3 sem. hrs. The thesis is independent research under the direction of a student's graduate committee, and to result in a completed thesis project, it should be taken in two separate

semesters for a total of 6 credit hours dependent upon thesis proposal. Prerequisite: Approval of a student's Faculty Mentor. Grade assigned will be "credit" (CR) or "no credit" (NC).

COMM 5396 - Individual Study

1-3 sem. hrs. This Individual Study course is designed to provide inquiry and research opportunities in an area of special interest otherwise not available in course offerings. Two individual study courses may be applied toward the degree with the approval of the student's Faculty Mentor.

COMM 5399 - Internship

3 sem. hrs. Practical experience in the communication field through placement in an communication or media internship position. Students must have completed at least 6 hours of graduate coursework in communication and have a minimum GPA of 3.5 to apply for the internship course. Prerequisites: Approval of the Internship Coordinator and Graduate Coordinator for the Department of Communication & Media. Only 3 hours of internship may be counted toward the graduate program and, with internship credit, the hours outside the program that can be counted toward the degree decreases to 3 hours.

Computer Science

COSC 5300 - Introductory Topics in Computer Science

3 sem. hrs. This course introduces students to the leveling topics in computer science. This course serves the needs of certain topics students lack for pursuing a Master's degree in computer science. Grade assigned will be "credit" (CR) or "no credit" (NC). Prerequisite: None. On demand

COSC 5313 - Foundations of Computer Organization and Architecture

3 sem. hrs. A study of internal computer concepts with respect to the functioning of the hardware subsystems and their roles in the computing process. An in-depth study of machine and assembly language. (Does not count toward total hours required for MS in Computer Science.) Fall, Spring.

COSC 5320 - Design and Implementation of Computerized instructional Systems

3 sem. hrs. (3:0) Provides a broad introduction to the development of computer-based learning environments. Covers the theory and practice of using the computer both in the classroom and individually for learning. Covers a wide range of possibilities from

multimedia presentation of material to constructive environments and computer-based instructional systems. Prerequisite: Permission of the Instructor. (Does not count toward total hours required for MS in Computer Science.) Summer.

COSC 5321 - Data Structures

3 sem. hrs. A study of the logical structures used for the organization, storage and retrieval of data. These structures are addressed from both memory-resident and file-resident points of view. Algorithms for the creation, searching, and manipulation of standard data structures used in computing are stressed. (Does not count toward total hours required for MS in Computer Science.) Fall, Spring.

COSC 5331 - Foundations of Computer System Software

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. (Does not count toward total hours required for MS in computer science.) Prerequisite: COSC 5313. Co-requisite: COSC 5321.

COSC 5390 - Internship

3 sem. hrs. Individual contract agreement involving student, faculty, and cooperating agency (discipline-related business, nonprofit organization, or government agency) to gain practical experience appropriate to computer science in off-campus setting. Grade assigned will be "credit" (CR) or "no credit" (NC). Prerequisite: None. On demand

COSC 5395 - Graduate Project and Technical Report

3 sem. hrs. (3:0) An applied research project in computing from problem definition to implementation in an area of particular interest to the student that relates to the course of study. Prerequisites: COSC 5370, COSC 5393 and formal approval of graduate project proposal. Offered on credit/no-credit basis only, with grade of IP until completed. Credit will not be recorded until technical report is accepted by the Graduate Project Committee. (See graduate project procedure under MS degree requirements.) Fall, Spring, Summer.

COSC 5398 - Thesis I

3 sem. hrs. This course is for Computer Science MS students choosing the thesis option. Upon choosing a thesis advisor, students will register for this course. This course is only credit/no credit. Students will be given a grade of In-Progress until successfully

completing their thesis. Prerequisite or Corequisite: COSC 6393 and permission of instructor.

COSC 5399 - Thesis II

3 sem. hrs. This course is for Computer Science MS students choosing the thesis option. Students will continually register for this course until successful completion of their thesis. A grade of In-Progress will be assigned until either successful completion or failing to register. If failing to register students will receive a grade of No Credit for all 5399 and 5398 courses. Prerequisite: COSC 5398.

COSC 5999 - Advanced Research in Computer Science

1-9 sem. hrs. Advanced work in a specialized area of computer science. Does not count as credit toward a degree in computer science. Course is taken as credit/non-credit. Prerequisite: Approval of the Instructor.

COSC 6324 - Digital 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. Fall, odd years

COSC 6326 - Computer Vision

3 sem. hrs. (3:0) This graduate course introduces concepts and techniques for machine vision. Particular emphasis will be placed on methods used for object recognition, machine learning, content-based image retrieval, image matching, 3D vision, tracking and motion analysis. Prerequisite: COSC 6324 Digital Image Processing. Spring, even years

COSC 6327 - Introduction to Computer Graphics

3 sem. hrs. (3:0) This graduate course provides students with a foundation in 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: graphics hardware, rendering, perspective, lighting, and geometry.

COSC 6328 - Advanced Computer Graphics

3 sem. hrs. (3:0) This course covers advanced computer graphics techniques. Students will be introduced to state-of-the-art methods in computer graphics. This course will focus on techniques for real-time rendering and animation. Prerequisite: COSC 4328 or COSC 6327 or equivalent. Spring.

COSC 6334 - Design and Analysis of Algorithms

3 sem. hrs. (3:0) An advanced course that concentrates on the design and analysis of algorithms used to solve a variety of problems. The methods of design covered include such topics as: divide-and-conquer, the greedy method, dynamic programming, search and traversal techniques, and backtracking. Prerequisites: COSC 5321, MATH 2413, and MATH 2305. Spring.

COSC 6336 - Database Management Systems

3 sem. hrs. (3:0) A study of contemporary database management concepts. Performance (indexing, query optimization, update optimization), concurrency, security and recovery issues are discussed. Also includes the study of front-end environments that access the database. Prerequisites: COSC 5321. Spring.

COSC 6337 - Data Mining

3 sem. hrs. (3:0) An introduction to fundamental strategies and methodologies for data mining. Topics include data preprocessing, mining frequent data patterns, classification, clustering, and outlier detection. Summer

COSC 6338 - Machine Learning

3 sem. hrs. Machine learning is a set of techniques that have been successfully used in the past few decades for data analysis, process automation, function optimization, model building, and many others. These techniques have been explored in a diversity of fields such as robotics, self-driving cars, big data, control of autonomous systems, image analysis, object recognition, data mining, business, and financial forecasting, transportation systems, antenna design, medical care systems, and many others. ML is a subdivision of artificial intelligence that gives machines the ability to learn and adapt with different acquired knowledge and experience. In this course, a student will learn about state of the art on machine learning and get to know how they can carry out these evolving learning algorithms. ML algorithms attempt to mimic how the human brain works. We plan to develop many exercises on how these ML algorithms work in practical applications in both industry and basic science. We plan to cover topics such as artificial network networks, fuzzy logic, hybrid systems, search and optimization, classification,

clustering and deep learning. Students will gain experiences on some programming tools and a variety of applications of machine learning.

COSC 6339 - Deep Learning

3 sem. hrs. This course introduces concepts and techniques for deep learning. The objective of this course is to introduce the fundamental theory and application of deep learning. Particular emphasis will be placed on regularization and optimization of deep learning models, Convolutional network, recurrent neural networks, autoencoders and generative models. In addition, the students will learn how to apply the methods to solve real-world problems in several areas including remote sensing, geospatial, and medical applications and develop the insight necessary to use the tools and techniques to solve any new problem.

COSC 6340 - Human-Computer Interaction

3 sem. hrs. (3:0) This graduate course introduces concepts and techniques for Human Computer Interaction. Attention will be paid to using non-traditional inputs such as cameras and microphones. Students will learn tools for using these inputs to create interactions with users. Prerequisite: COSC 5331. Spring.

COSC 6350 - Advanced Topics in DBMS

3 sem. hrs. (3:0) The study of emerging database technologies. Topics are chosen from data warehousing, distributed databases, spatial databases and web-based applications. Prerequisites: COSC 6336. Fall.

COSC 6351 - Advanced Computer Architecture

3 sem. hrs. (3:0) An overview of computer architecture, which stresses the underlying design principles and the impact of these principles on computer performance. General topics include design methodology, processor design, control design, memory organization, system organization, and parallel processing. Prerequisite: COSC 5331. Fall.

COSC 6352 - Advanced Operating Systems

3 sem. hrs. (3:0) Introduction to advanced concepts in operating systems and distributed systems. Topics include distributed system architectures, interprocess communication, distributed mutual exclusion, distributed synchronization and deadlock, agreement protocols, distributed scheduling and process management, distributed shared memory, distributed file systems, multiprocessor system architectures and operating systems,

recovery and fault tolerance. Prerequisite: COSC 5331 or an equivalent undergraduate course in Operating Systems.

COSC 6353 - Compiler Design and 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: MATH 2305. Fall.

COSC 6354 - Artificial Intelligence^

3 sem. hrs. (3:0) Fundamental concepts and techniques for the design of computer-based, intelligent systems. Topics include: a brief history, methods for knowledge representation, heuristic search techniques, programming in LISP or Prolog. Prerequisites: COSC 5321 and MATH 2305. Fall.

COSC 6355 - Data Communications and Networking

3 sem. hrs. (3:0) Areas studied include principles of computer-based communication systems, analysis and design of computer networks, and distributed data processing. Prerequisite: COSC 5331. Fall.

COSC 6356 - Theory of Computation

3 sem. hrs. (3:0) An introduction to theoretical foundations of modern computing. Topics include finite state machine concepts, formal grammars, and basic computability concepts. Prerequisites: COSC 5321 and MATH 2305. Summer.

COSC 6357 - Wireless Sensor Networks

3 sem. hrs. (3:0) This is a graduate level course on wireless sensor networks; one of the fastest developing areas in computer science and engineering. The focus of this course is on the design of optimized architectures and protocols for such unique networks. Topics include the design principles of wireless sensor networks, energy management, MAC protocols, naming and addressing, localization, routing protocols, applications of wireless sensor networks, and associated challenges and measures.

COSC 6360 - Parallel Computing

3 sem. hrs. (3:0) Introduction to the hardware and software issues in parallel computing. Topics include motivation and history, parallel architectures, parallel algorithm design,

and parallel performance analysis. Students will be introduced to a variety of parallel computing paradigms including message passing systems and shared memory systems. Prerequisite: COSC 5331.

COSC 6361 - Parallel Algorithms

3 sem. hrs. (3:0) Introduces and evaluates important models of parallel and distributed computation. Topics include a selection of parallel algorithms for various models of parallel computation, combinational circuits, parallel prefix computation, divide and conquer, pointer based data structures, linear arrays, meshes and related models, and hypercubes. Prerequisites: Either COSC 6360 or an equivalent undergraduate course in Algorithms. On demand

COSC 6362 - Mobile Software Development

3 sem. hrs. 3:0 Survey of software development on mobile platforms including both native and cross-platform applications with topics such as: prototyping, programming, testing, debugging, and deploying. Coverage of software life cycle on mobile platforms and how mobile hardware differs from traditional computers. Prerequisite: COSC 5321

COSC 6365 - Current Trends in Programming

3 sem. hrs. 3:0 This is a survey of current trends in computer programming. The focus of this course is on the development of computer programs utilizing the latest technologies and paradigms. Topics include state-of-the-art in problem solving and software development, programming techniques and approaches, programming languages, development tools and environments, and software deployment methods. Prerequisite: COSC 5321 On demand

COSC 6370 - Advanced Software Engineering^

3 sem. hrs. (3:0) Areas studied include engineering principles and their application to the design, development, testing, and maintenance of large software systems, tools and processes for managing the complexities inherent in creating and maintaining large software systems. Prerequisite: COSC 5321 or equivalent. Fall.

COSC 6374 - Computer Forensics^

3 sem. hrs. (3:0) This course will introduce students to the fundamentals of computer forensics and various software tools used in cyber-crime analysis. Students will be introduced to established methodologies for conducting computer forensic investigations,

as well as to emerging international standards for computer forensics. Applicable laws and regulations dealing with computer forensic analysis will also be discussed. Spring.

COSC 6375 - Information Assurance^

3 sem. hrs. (3:0) An introduction to information security and assurance. This course covers the basic notions of confidentiality, integrity, availability, authentication models, protection models, secure programming, audit, intrusion detection and response, operational security issues, physical security issues, personnel security, policy formation and enforcement, access controls, information flow, legal and social issues, classification, trust modeling, and risk assessment. Fall.

COSC 6376 - Network Security^

3 sem. hrs. (3:0) This course is a study of networking basics and security essentials with respect to information services provided over a computer network. The course covers the technical details of security threats, vulnerabilities, attacks, policies, and countermeasures such as firewalls, honeypots, intrusion detection systems, and cryptographic algorithms for confidentiality and authentication and the development of strategies to protect information services and resources accessible on a computer network. Prerequisites: COSC 6375 and approval of the Instructor. Spring.

COSC 6377 - Applied Cryptography

3 sem. hrs. (3:0) This course includes an introduction to cryptographic algorithms and protocols for encrypting information securely, techniques for analyzing vulnerabilities of protocols, approaches to digital signatures and information digests, and implementation approaches for the most significant cryptographic methodologies. Fall.

COSC 6379 - Advanced Information Assurance^

3 sem. hrs. (3:0) This course encompasses a broad range of topics involving information security, communications security, network security, risk analysis, operational security, health information privacy, criminal justice digital forensics, homeland security, the human element and social engineering, and applicable national and international laws. An in-depth information assurance capstone project or research paper will be required of each student to satisfy the information assurance graduate option requirements. Prerequisites: COSC 6375. Fall.

COSC 6380 - Data Analytics

3 sem. hrs. This course will introduce state-of-the-art techniques to process and analyze different types of data, generate insights and knowledge from data, and make data-based decisions and predictions. Real-world examples will be used to familiarize students with the theory and applications. Main topics include data preprocessing, probability theory, tests of hypothesis, and various data analysis techniques (e.g., clustering, classification, prediction/forecasting, etc.) for different types of data including static, time-series, spatial, and spatiotemporal.

COSC 6393 - Research Methods in Computer Science

3 sem. hrs. (3:0) This course provides students with a range of experiences in conducting and communicating research. Students will learn major research methods and techniques. Experiences will be gained in all stages of research: reviewing literature, writing a proposal, designing an approach, and reporting results. Critical-reading/writing assignments and class discussions on state-of-the-art research in Computer Science will provide students with major research aspects. Spring

COSC 6396 - Directed Independent Study

3 sem. hrs. Study in areas of current interest. (A maximum of six hours may be counted toward the MS degree.) Fall, Spring, Summer.

COSC 6590 - Selected Topics

3 sem. hrs. Variable content study of specific areas of computer and information systems. May be repeated for credit when topics vary. Offered on sufficient demand.

Counseling and Educational Psychology/Counselor Education

CNEP 5304 - Introduction to Counseling^

3 sem. hrs. This course is an orientation to the profession of counseling, its history, professional standards, code of ethics, credentials, areas of specialization, and the development of skills necessary to create a helping relationship. It covers the counselor's professional identity in a variety of settings and roles. Opportunities are provided for students to discover through self-awareness their suitability for the helping profession.

CNEP 5306 - Career Counseling^

3 sem. hrs. This course covers classic and contemporary theories of career development, counseling, and decision making, including; the use of career/occupational resources, testing, computer-assisted guidance systems, career development planning, assessing

factors contributing to career development, advocating for diverse clients, using assessment tools, facilitating client skill development, and using ethical and culturally relevant strategies for addressing career development including the clients' life experiences. Career services in various settings will be discussed. Multicultural issues and needs of special populations will be presented. There are no prerequisites for this course.

CNEP 5308 - Counseling Theories

3 sem. hrs. This course is designed to provide an overview of the theoretical foundations associated with best-practices for counseling treatment planning and intervention. Topics addressed in this course include the historical development and contemporary application of counseling theories, review of key concepts that influence client change, essential features of the therapeutic process, and considerations for culturally-relevant and setting-specific applications. Students will be expected to complete designated readings, work in small groups, complete experiential activities, and demonstrate learning across several modes of evaluation. There are no prerequisites for this course.

CNEP 5309 - Grief and Loss Counseling

3 sem. hrs. This course is designed to provide students with an understanding of issues on death, dying, loss, and the impact of grief. Topics addressed in this course include various types of loss, including non-death related, conceptualizations of grief and mourning across the lifespan, evidence-based interventions to support the dying and bereaved individuals, and strategies for identifying and intervening with those who have clinically significant complicated grief. Students will be expected to explore their own grief reactions as well as examine the societal, cultural, and familial expectations surrounding grief and death rituals. There are no prerequisites for this course.

CNEP 5310 - Career and Vocational Assessment

3 sem. hrs. A course designed to provide educational diagnosticians and counselors with the knowledge and skills required to choose, administer and interpret aptitude, interest and other appropriate instruments used in making career and vocational decisions.

CNEP 5312 - Addictions Counseling

3 sem. hrs. This course is designed to provide students with the knowledge and skills necessary to address a wide range of issues in the context of addiction counseling, treatment, and prevention programs, as well as in a broader mental health counseling context. Topics addressed in this course include: the history and development of

addiction counseling; principles and philosophies of addiction-related self-help; neurological, behavioral, psychological, physical, and social effects of psychoactive substances and addictive disorders on the user and significant others; cultural factors related to addiction and additive behavior. Students will examine specific treatment strategies applicable to the biopsychosocial issues related to addictions, as well as current ethical and professional issues in the field. Students will be expected to articulate strategies for helping clients identify the effects of addiction on life problems and effectively partner with clients to reduce the persisting negative effects of substance use, abuse, dependence, and addictive disorders. There are no prerequisites for this course.

CNEP 5313 - Theories and Techniques in Substance Abuse Counseling

3 sem. hrs.

This course is designed to provide students with an understanding of addictions treatment and the counseling dynamics involved, as well as the significance and impact of addictions within our society. Topics addressed in this course include: theories and models of addiction related to substance use as well as behavioral and process addictions; techniques and interventions related to treating substance abuse and other addictions; principles, models, and documentation formats of biopsychosocial case conceptualization and treatment planning; and regulatory processes and substance abuse policy relative to service delivery opportunities in addiction counseling. Students will be expected to describe various methods of screening, assessment, and testing for addiction; articulate pertinent legal and ethical considerations specific to addiction counseling; and evaluate and identify individualized strategies and treatment modalities relative to clients' stage of dependence, change, or recovery.

CNEP 5314 - Theory and Practice of Multicultural Counseling^

3 sem. hrs.

This course is designed to familiarize students with the cultural differences of special populations of people. Emphasis on ethical use of appropriate counseling techniques for use with the major racial/ethnic groups and other special populations of people such as those who are physically or emotionally disabled, older, of different genders or of different sexual orientation. Topics addressed in this course include: theories and models of multicultural counseling; multicultural counseling competencies; cultural identity development; worldview, power, privilege, and oppression, social justice, and advocacy. Students will be expected to articulate effective strategies for working with and advocating for diverse populations; recognize the impact of heritage, attitudes, beliefs, and acculturative experiences on individuals' view of self and others; and identify and

eliminate barriers, prejudices, and processes of intentional and unintentional oppression and discrimination at the individual and institutional level. There are no prerequisites for this course.

CNEP 5315 - Consultation and Responsive Services in Schools

3 sem. hrs. This course is designed to train school counseling students to provide both indirect services to children and adolescents via effective consultation and direct responsive services in the school setting. Topics addressed in this course include consultation models, crisis counseling models, crisis intervention, and school counselor roles in consultation and crisis response. Students will be expected to develop interventions in which consultation is the primary method of delivery, appropriately respond to crisis situations encountered in a school environment, create responsive services programming based on applicable data, and demonstrate skills needed for effective consultation and responsive services, and articulate the connection between consultation and responsive services. There are no prerequisites for this course.

CNEP 5316 - Developmental School Counseling

3 sem. hrs. This course is designed to provide students with an understanding of the planning, design, implementation, and evaluation of comprehensive, developmental school counseling programs. The course includes student collaboration with existing school counseling programs to facilitate student professionalism and competence in consultation, strategy selection and implementation, program delivery, and community referral. This course is a requirement for eligibility to take the TExES school counselor examination.

CNEP 5317 - Play Therapy: a Counseling intervention

3 sem. hrs. This course is designed for the purpose of studying the theory, techniques, and issues related to counseling children using play therapy. The class will consist of lecture, group discussion, video presentations, experiential activities and case studies. Designed for both school and community counselors.

CNEP 5318 - Consultation in School Settings

3 sem. hrs. This course is designed to train school counseling students to provide indirect services to children and adolescents through effective consultation with parents, teachers, administrators and external referral sources. The emphasis of the course is on the acquisition of skills that follow a logical consultation model. The course has a didactic and experiential learning component. Students will become sensitized to socio-cultural

diversity issues as they impact consultation, and to the ethical and legal issues pertaining to working in the schools. Current research will be used to guide the consultation process.

CNEP 5319 - Introduction to Clinical Mental Health Counseling

3 sem. hrs. Research, identification, and design of systemic models of prevention and intervention that foster the healthy development of individuals in school and community settings. Focus will be both on assessment and implementation of culturally respectful approaches that invite collaboration with the family, school, community, and other contextual resources of children, adolescents, and adults.

CNEP 5320 - Introduction to Marriage, Couple, and Family Counseling^

3 sem. hrs. This course is designed to provide an introduction to marriage, couple, and family counseling. Topics addressed in this course include history and development of marriage, couple, and family counseling; theories and models of family systems and dynamics; theories and models of marriage, couple, and family counseling; and sociology of the family, family phenomenology, and family of origin theories. In addition, roles and settings of marriage, couple, and family counselors as well as professional credentialing and preparation of marriage, couple, and family counselors will be addressed. Students will be expected to successfully complete a variety of tasks, including projects, presentations, examinations, and role plays. There are no prerequisites for this course.

CNEP 5321 - Advanced Strategies in Process Addictions and Substance Abuse

3 sem. hrs. This course is designed to equip students with advanced strategies, techniques, and interventions for treating substance use disorders as well as behavioral and process addictions. Topics addressed in this course include: the diagnostic process and use of current diagnostic classification systems found in the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD); assessment of biopsychosocial and spiritual history relevant to addiction; classifications and contraindications of commonly prescribed psychopharmacological medications for appropriate medical referral and consultation; psychological tests and assessments specific to addiction counseling; and the importance of vocation, family, social networks, and community systems in the treatment and recovery process for substance use disorders, behavioral addictions, and process addictions. Students will be expected to effectively assess, diagnose, and treat a variety of addictive disorders and process addictions using contemporary evidence-based practices. Prerequistes: CNEP 5313.

CNEP 5322 - Strategies in Family Counseling^

3 sem. hrs. This course is designed to focus on clinical applications of major theoretical models of family counseling. Topics addressed in this course include principles and models of assessment and case conceptualization from a systems perspective; interventions and techniques of marriage, couple, and family counseling; and conceptualizing and implementing treatment. Students will be expected to demonstrate application of various approaches, including both case conceptualization and interventions, from a variety of theoretical models via case studies, role plays, and other course activities. Prerequisite: CNEP 5320.

CNEP 5323 - Counseling for Holistic Wellness

3 sem. hrs. This course provides an introduction and critical review of contemporary theory and research in models of holistic wellness including consideration of experiential and interventions that address lifestyle variables. The course also discusses the role of the professional counselor as interventionist in a variety of applied settings in assisting clientele in moving toward optimal health (not just absence of illness), through an integration of physical , psychological, social, spiritual and personal choice components of physical health and lifestyle management.

CNEP 5324 - Counseling Couples

3 sem. hrs. This course is designed to familiarize students with the assessment and treatment of couple relationships. Major topics include but are not limited to research- and efficacy-based treatment models, legal and ethical standards, couples sexual counseling, premarital counseling and preventive psychoeducational approaches, gender and issues of diversity impacting couple relationships, research relevant to couple counseling, and societal trends. Pre-requisite: CNEP 5320

CNEP 5326 - Family Counseling for Child and Adolescent-Focused Issues

3 sem. hrs. This course is designed to focus on evidence-based family treatment of problems that are child- and adolescent-focused. Topics addressed in this course include principles and models of assessment and case conceptualization from a systemic perspective; use of appropriate assessments in family therapy; impact of trauma and addictions on families; evidence-based models and interventions in family counseling for problems that are child- and adolescent-focused; and conceptualization planning of intervention strategies in family counseling. Students will be expected to demonstrate the ability to utilize assessments, conceptualize treatment, and plan specific interventions to

address child and adolescent related issues in family counseling. Prerequisite: CNEP 5320

CNEP 5327 - Ethical and Legal Issues in Counseling

3 sem. hrs. This course offers in-depth consideration of ethical and legal issues that affect the practice of counseling in clinical mental health counseling; marital, couple, and family counseling; addictions counseling; and school counseling settings. The course will assist students in understanding and formulating sound positions on a variety of major issues related to the field of counseling. Students are expected to be familiar with a variety of ethical codes as well as laws regulating the profession. Students will be expected to utilize ethical-decision-making models and codes of ethics to analyze cases, analyze content appropriate to their program emphases, apply relevant codes of ethics and laws, and demonstrate understanding of critical legal and ethical content.

CNEP 5328 - Abnormal Human Behavior

3 sem. hrs. This course is designed to provide an overview of the principles of understanding the dysfunction in human behavior and development, including the impact of disaster, crises, and other trauma-causing events on developmental processes. Students will learn how dysfunctional behavior manifests and factors that increase one's vulnerability to abnormal human behavior. The primary topics of this course include theories of normal and abnormal personality development and the effects of crisis, disasters, and other trauma on diverse individuals across the lifespan. Students will be expected to demonstrate understanding of abnormal personality development as well as the impact of trauma-causing events on personality development via successful completion of tasks in various assignments which may include case studies, presentations, and examinations. There are no prerequisites for this course.

CNEP 5329 - Cultural Immersion: Diversity of Spanish Speakers

3 sem. hrs. This course addresses cultural issues in Spanish-speakers such as concept of family, authority and social organization, communication method, thought, formality of address and spirituality. This course will be offered both as an online course and a study abroad experience. Students who have an opportunity to travel may take this course when it is offered in a Spanish-speaking country.

CNEP 5330 - Professional and Technical Spanish

3 sem. hrs. This on-line course is an orientation to counseling clients in Spanish. Students will become familiar with terms to use to facilitate a session in

Spanish. Professional counseling concepts include mental health, counseling techniques, communication skills, understanding and problem solving, goal setting, and consultation with other professionals.

CNEP 5331 - Strategies and Interventions for Spanish-Speaking Clients

3 sem. hrs. This online course provides training in mental health strategies and interventions in counseling. The focus is on theories and techniques appropriate with Spanish-speaking clients.

CNEP 5332 - Spanish-Speaking Internship I

3 sem. hrs. The Internship I experience requires a minimum of 100 clock hours of supervised counseling, including 50 hours of direct service with Spanish-speaking clients. Students will provide counseling to community members in the CNEP Counseling and Training Clinic or other designated location under faculty supervision.

CNEP 5333 - Spanish-Speaking Internship II

3 sem. hrs. The Internship II experience requires a minimum of 100 clock hours of supervised counseling, including 50 hours of direct service with Spanish-speaking clients. Students will provide counseling to community members in the CNEP Counseling and Training Clinic or other designated location under faculty supervision. Students who have an opportunity to travel complete Internship II clinical work in a study abroad program in a Spanish-speaking country

CNEP 5351 - Learning and Motivation

3 sem. hrs. Learning theory and its relationship to student motivation. Applies psychology of learning to teaching.

CNEP 5354 - Developmental Issues in Human Personality and Behavior

3 sem. hrs.

This course is designed to address both historical and contemporary research in personality theory from a lifespan developmental perspective. Topics addressed in this course include normative patterns of personality development and adjustment; Major factors and conditions which are related to successful human adaptations including adult-child relations, personality defense mechanisms, developmental stages and abnormal behavior in addition to theories of personality. Social and Cultural foundations of personality development will also be covered. Students will be expected to demonstrate

understanding of personality development across the lifespan as well as social/cultural influences on personality development through successful completion of various assignments which may include case studies, presentations, and examinations. There are no prerequisites for this course.

CNEP 5361 - Group Counseling

3 sem. hrs.

This course is designed to provide the student with both a theoretical and an experiential approach to group counseling dynamics and processes including therapeutic factors and group effectiveness, characteristics and functions of group leaders, recruiting, screening, and selecting group members, group settings and types of groups, ethical and cultural strategies for designing and facilitating groups, and a minimum of 10 clock hours of participation in a small group activity. There are no prerequisites for this course.

CNEP 5364 - Advanced Group Counseling

3 sem. hrs. Advanced techniques and activities for students who have had at least one course in groups or who have group counseling experience. Prerequisite: CNEP 5361.

CNEP 5365 - Stress Management and Integrated Wellness

3 sem. hrs. This is a course designed to teach practical skills for managing stress and integrating wellness practices into the daily lifestyle. Students will be exposed to current knowledge base and experiential best practices for identifying stressors in their environment and developing strategies for their personal and client use.

CNEP 5366 - Introduction to Clinical Hypnosis^

3 sem. hrs. This course is designed to teach the following: history, and definition of hypnosis; myths; signs of trance; principles of suggestion; simple induction procedures; specific applications of hypnosis in private and school related issues.

CNEP 5371 - Psychometrics

3 sem. hrs. This course is designed to provide the student with a basic knowledge for testing and measurement in the counseling field. Topics addressed in this course include historical perspectives concerning the nature and meaning of assessment and testing in counseling, methods of effectively preparing for and conducting initial assessment meetings, use of assessments for diagnostic and intervention planning purposes, basic concepts of standardized and non-standardized testing, norm-referenced and criterion-

referenced assessments, group and individual assessments, validity and reliability in assessments, the use of assessments relevant to academic/educational, career, personal, and social development, use of environmental assessments and systematic behavioral observations, use of symptom checklists and personality and psychological testing, use of assessment results to diagnose developmental, behavioral, and mental disorders, and ethical and culturally relevant strategies for selecting, administering, and interpreting assessment and test results, and program evaluation and the use of findings to effect program modifications. Covers functions of testing in education; educational and social issues related to testing and use of test results; theoretical aspects of psychometrics; selection of commercial standardized tests; and common commercial standardized tests. Students will be expected to demonstrate knowledge of the foundation and history of psychometric assessment, knowledge of the psychometric properties of assessments, including validity, reliability, and norming groups, knowledge of how to select, administer, interpret, and report the results of psychometric assessments, how to conduct a biopsychosocial assessment, and how to conduct a program evaluation and interpret the results. There are no prerequisites for this course.

CNEP 5374 - Individual intelligence Testing

3 sem. hrs. Testing, scoring, and interpretation procedures for the Wechsler scales.

CNEP 5375 - Clinical Mental Health Counseling Strategies^

3 sem. hrs. This course is designed to be a competency-based course with a primary focus on the practice and acquisition of specific techniques and interview skills. Topics addressed in this course include essential interviewing and decision-making skills, evidence-supported counseling strategies, culturally responsive modalities for initiating, maintaining, and terminating counseling, treatment planning, and strategies for promoting wellness and self-care. The student will demonstrate the ability to implement these competencies through discussion, conceptualization assignments, and experiential activities. Pre-requisite: CNEP 5384

CNEP 5381 - Psychodiagnosis and Treatment Strategies

3 sem. hrs. This course is designed to cover types of human distress, as described in the Diagnostic and Statistical Manual of Mental Disorders, including the development of tools for the understanding and critical appraisal of abnormal human behavior across the life-span. Strategies and techniques for working with clients in a variety of settings are considered. The primary topic in this course is the diagnostic process, including differential diagnosis and the use of current diagnostic classification systems. Students will be expected to demonstrate understanding of the diagnostic process and treatment

planning via successful completion of tasks in multiple case studies, mid-term examination, and final evaluation. Prerequisites: A minimum of 12 semester hours of core counseling courses must be completed, including CNEP 5304, and CNEP 5308.

CNEP 5384 - The Counseling Process

3 sem. hrs. This course is designed to teach students how to use beginning counseling skills. Topics addressed in this course include counselor characteristics and behaviors that influence the counseling process, essential interviewing, counseling, and case conceptualization skills, and self-care strategies appropriate to the counselor role. Students will be expected to demonstrate the ability to understand and use basic micro-skills in counseling practice, and demonstrate knowledge of counselor characteristics and behaviors that can affect the counseling process. They will also be expected to demonstrate the practice and understanding of self-care via intentional personal wellness activities. Prerequisites: A minimum of 12 semester hours of core counseling courses must be completed, including CNEP 5304 and CNEP 5308. Must earn a grade of "B" or better to pass.

CNEP 5385 - Bridge Supervision

1 sem. hrs. Supervised counseling experience during breaks between academic semesters. Counseling setting must be the same as the practicum/internship setting either the previous or following semester. The course, while not required for the degree, is required for all students who obtain hours towards the practicum/internship requirements during between-semester breaks. Prerequisite: Completion of 5397 Practicum.

CNEP 5390 - Professional Seminar

1-3 sem. hrs. Contemporary issues in Counseling/Educational Psychology; topics vary with professional identification of participants. May be repeated when topics vary. Grade assigned will be “credit” (CR) or “no credit” (NC).

CNEP 5397 - Practicum

3 sem. hrs.

This course is designed to provide 100 clock hours of supervised counseling experiences, including 40 hours of direct service with clients. Clinical setting must be approved by the Clinical Coordinator. The semester prior to enrollment the student must complete the practicum application process. Students will be expected to demonstrate satisfactory counseling skills as well as a professional counseling identity as evidenced by a grade of

B or above in the course and satisfactory ratings on professional behavior ratings. Students who earn a grade below C will be required to re-take the course.
Prerequisites: CNEP 5381, CNEP 5384, and CNEP 5327

CNEP 5399 - Specialized internship Experience

3 sem. hrs. A supervised field experience in counseling and counseling-related activities. An internship application must be completed and submitted to the instructor. Grade assigned will be “credit” (CR) or “no credit” (NC).

CNEP 5696 - Directed individual Study

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

CNEP 5698 - Internship

3 sem. hrs. This course, to be taken twice (6 hours), is designed to provide 600 clock hours of supervised counseling experiences, including 240 hours of direct service with clients. The clinical setting must be approved and appropriate to the student's emphasis. Students will be expected to provide direct counseling services appropriate to their program specialties and to fulfill additional roles common to the role of a counselor in their specialty as evidenced by evaluations from supervisors. Prerequisites for this course include successful completion of CNEP 5397 (and prerequisites thereto) as well as designated emphasis courses: Addictions: CNEP 5312; Marriage and Family Counseling: CNEP 5320; School Counseling: CNEP 5316; Clinical Mental Health: CNEP 5375.

CNEP 6305 - Advanced Theories in Individual and Group Counseling

3 sem. hrs. Historical, theoretical, legal, ethical, and philosophical foundations in counseling with an emphasis on counseling and cultural issues, change theory, systems, and theory efficacy. Overview of major counseling theories includes identifying one's personal theory. Projects include evaluation of theories with multicultural populations. Admission to doctoral program required for enrollment.

CNEP 6310 - Advanced Counseling Strategies

3 sem. hrs. In-depth study of various counseling strategies appropriate to the development levels of elementary, middle, and secondary school students, adults, couples, and families. Includes case conceptualization and efficacy of theories and treatment strategies of National and International crises, disaster, and other trauma-causing events, short term

and intermediate intervention strategies and advocacy methods with at-risk and multicultural populations.

CNEP 6315 - Professional, Legal, and Ethical Issues

3 sem. hrs. Examination of professional, legal, ethical, topical, and political issues in the counseling profession. Includes focus on counselor's identity, relevant cultural concerns, and the counselor educators, role and responsibilities. Course material includes research writing projects and an Individual Development Plan (IDP).

CNEP 6316 - Research, Writing and Publishing in a Multicultural Society

3 sem. hrs. Study of the professional standards of writing, publishing and presenting proposals in a diverse society. Topics include a review of contemporary research on diverse populations. Special emphasis is placed on student gaining knowledge and skill for conducting and communicating the results of scholarly inquiry through processes of editing, consultation and peer review processes.

CNEP 6319 - Applications of Family Counseling in School and Community Settings

3 sem. hrs. Research, identification, and design of systemic models of prevention and intervention that foster the healthy development of individuals in school and community settings. Focus will be both on assessment and implementation of culturally respectful approaches that invite collaboration with the family, school, community, and other contextual resources of children, adolescents, and adults.

CNEP 6320 - Advanced Appraisal Techniques and Psychometrics

3 sem. hrs. This class focuses on facilitating student skills in development, planning, implementation and evaluation of assessment and testing programs. Topics include critical evaluation of validity and reliability of standardized and non-standardized assessments. Emphasis is placed on design parameters, specific assessment measures, and their use in program evaluation.

CNEP 6325 - Advanced Seminar in Career and Life Planning^

3 sem. hrs. The purpose of this course is to cover theory, research, and practice in the field of career counseling. The course will provide an in-depth review of career development theories, vocational assessment, occupational information, decision-making counseling, women's career development, and vocational issues of people of color, as well as current theory, practice supervision and research in career counseling. Students

are expected to enter the course conversant with the major theories of career development. This is an advanced seminar emphasizing theory and research.

CNEP 6335 - Consultation Theory and Professional Advocacy

3 sem. hrs. This course is designed to identify effective consultation approaches/styles and advocacy action planning. Students will acquire skills in assessing needs of counselors in training, developing programs and techniques for change, and program evaluation.

CNEP 6340 - Diversity in Counselor Education

3 sem. hrs. Diversity in Counselor Education (3 SCH). This course provides students with the awareness, knowledge, and skills required of counselors, counselor educators, and counseling supervisors to be effective leaders and advocates in an increasingly pluralistic and diverse society. The course will provide students opportunities to develop multicultural competencies by critically examining how issues related to social justice and diversity impact various therapeutic, instructional, consultative, and supervisory relationships.

CNEP 6345 - Knowledge Base Seminar in Counselor Education^

3 sem. hrs. This couse provides doctoral students with the opportunity to demonstrate writing skills and research knowledge in Counselor Education. All major areas of study in counselor education (CACREP core areas) are emphasized. Doctoral students complete a series of written examinations. All examination questions are assessed through a rubric. Doctoral students are expected to also verbally demonstrate their knowledge of the field of counseling and defend their responses. Participants will bring to class research papers and scholarly publications.

CNEP 6350 - Advanced Clinical Supervision

3 sem. hrs.

Study of counselor training and supervision with an exploration of the major theoretical/conceptual models and an overview of current trends and practices. Course includes didactic and applied experiences. Legal, ethical and multicultural issues and challenges in diverse settings are addressed, in addition to the purposes of clinical supervision and the role of the supervisor. Prerequisites: CNEP 6305, CNEP 6310.
Prerequisites: CNEP 6305, CNEP 6310.

CNEP 6351 - Seminar: Current Counseling Topics

3 sem. hrs. Study of the professional standards, current issues, and personal rewards associated with counseling. Includes research and discussion in special topics. Topics include the roles of racial, ethnic, and cultural heritage; nationality; socioeconomic status; family structure; age; gender; sexual orientation; religious and spiritual beliefs; occupation; physical and mental status; local, regional, national, international perspective; and equity issues in counselor education programs.

CNEP 6354 - Counselor Education Pedagogy

3 sem. hrs. Counselor Education Pedagogy (3 SCH). This class is designed to facilitate development of students' knowledge, skills, and dispositions through an in-depth review of evidence-based practices associated with effective teaching practices used in counselor training thereby preparing students for careers in counselor education.

CNEP 6355 - Leadership and Advocacy in Counselor Education

3 sem. hrs. This course is an exploration of issues of leadership in counselor education within a diverse society. Focus on problem identification, analysis, supervision, and problem-solving approaches within a multicultural framework. Emphasis is placed on leadership roles, theories, and skills.

CNEP 6360 - Research Design and Statistics

3 sem. hrs. This course is designed as a doctoral level survey of Research Design and Statistics. The major focus will involve an examination of the theoretical assumptions underlying various research designs and the use of inferential statistics. Special emphasis will be placed on the selection of appropriate design for specific applications in counseling and educational contexts. The course will involve both theoretical exploration and instruction on the use of computer-based statistical tools (SPSS).

CNEP 6365 - Advanced Research & Design in Wellness and Stress Management Practices

3 sem. hrs. Advanced skill development in designing programs and working with clients experiencing stress related disorders that impact the overall quality of their lives. A special emphasis will be placed implementation of design strategies for development and evaluating programs for improving performance and health.

CNEP 6370 - Quantitative Research Methods I

3 sem. hrs.

This course will focus on expanding each student's knowledge of research design and statistical analysis beyond CNEP 6360 and EDLD 6392. Specific topics will include general linear model approaches to analysis of variance and regression analysis. Students will utilize SPSS to complete regularly assigned problems in order to demonstrate their competence. In addition, a special emphasis will be placed on the development of advanced quantitative skills needed to evaluate programs and student processes within a counselor educator model.
Prerequisite: CNEP 6360 Research Design and Statistics

CNEP 6372 - Quantitative Research Methods II

3 sem. hrs. This research methodology course is designed to provide doctoral students with application experience in quantitative, qualitative and mixed-method data analytic procedures. Students will address promises and pitfalls using advanced univariate, multivariate, and non-parametric techniques introduced in CNEP 6360 and CNEP 6370. Students will act as consultants and evaluators on projects developed by student research teams in the department. This course is designed to help students address data analytic applications relevant to professional consulting, clinical and counseling practice as well as contexts involving program evaluation in a wide range of professional settings.
Prerequisites: CNEP 6320; CNEP 6360; CNEP 6370.

CNEP 6384 - Qualitative Research Methods I

3 sem. hrs. This course is experientially based on the philosophy, design, and practice of qualitative research. It is understood that participants have a solid background in methods (as defined by the positivist and post-positivist tradition) and statistics. Students will situate qualitative inquiry/research in their philosophical, theoretical, and historical situations, learn methods of qualitative design, and develop a capacity to collect, analyze, and interpret qualitative empirical materials.

CNEP 6385 - Qualitative Research Methods II

3 sem. hrs. This course provides learners with advanced knowledge about and practice with specific qualitative designs commonly used in counseling research. It is understood that participants have a solid background in research methods generally (as defined by the positive and post-positivist tradition) as well as introductory understanding of qualitative methods specifically. Learners will deepen their understanding of general qualitative methods (e.g., phenomenology) and will focus attention on one or more theory-driven approaches (e.g., descriptive phenomenology, hermeneutic phenomenology, specific grounded theory approaches), with particular attention to consistency of method approach including data analysis.

CNEP 6390 - Professional Seminar.

3-6 sem. hrs. Special topics is an advanced study in an identified area of academic interest. May be repeated for credit when topics vary. Covers the knowledge base of the counseling profession.

CNEP 6395 - Doctoral Practicum

3 sem. hrs.

Provides/demonstrates professional counseling expertise with effective application of multiple counseling theories. Demonstrates case conceptualization and effective interventions across diverse populations and settings. The experience includes a minimum of 100 clock hours. Students will experience both the direct delivery of services, and weekly individual and group supervision. Opportunities for the evaluation of student' counseling skills will be provided.
Prerequisite or corequisite: CNEP 6350. Grade assigned will be "credit" (CR) or "no credit" (NC).

CNEP 6396 - Doctoral internship

3 sem. hrs.

Provides an intensive, supervised professional experience in approved counseling and counselor education settings. Two internship courses are required. Each internship consists of a total of 300 clock hours of experience. Students will plan and participate in a variety of experiences relevant to the work of counselor education, which may include supervision, teaching, research, direct counseling, and leadership, all under supervision. Prerequisite: CNEP 6395. Grade assigned will be "credit" (CR) or "no credit" (NC). Students repeat the internship for another 300 clock hours and another 3 semester hours of credit. Grade assigned will be "credit" (CR) or "no credit" (NC).

CNEP 6397 - Research Seminar^

3 sem. hrs. This course focuses on the application of research skills and inquiry methods. Students will be exposed to various methodological approaches and the components of scientific inquiry. Attention also will be given to ethical and legal issues in research.

CNEP 6398 - Dissertation in Progress

1-3 sem. hrs. Completion of an approved research project under the supervision of a dissertation advisor. (Nine semester hour minimum.)

CNEP 6696 - Directed individual Study

1-6 sem. hrs. May be repeated when topics vary. Directed individual study is an advanced individual study for doctoral students through special permission of the Department Chair and faculty member.

Criminal Justice

CRIJ 5302 - Foundations of Criminal Justice

3 sem. hrs. Examination of the theoretical, philosophical, and historical foundations of the criminal justice system. Includes critical analysis of major criminal justice perspectives and models.

CRIJ 5310 - Seminar in the Judicial Process

3 sem. hrs. Study of selected topics that provide an understanding of the judicial process as it affects the entire criminal justice system. May be repeated when topics vary.

CRIJ 5320 - Correctional Theory and Policy

3 sem. hrs. Examination of the historical development of the rehabilitative ideal. Analysis of the theoretical and ideological foundations of correctional policy and practice.

CRIJ 5330 - Seminar in Juvenile Justice

3 sem. hrs. Historical development of the juvenile justice system. Analysis of procedures and problems at each stage of the process. Includes overview of delinquency causation, scope, and treatment.

CRIJ 5351 - Seminar in Criminal Justice Management

3 sem. hrs. Study of the supervision and management of criminal justice organizations. Consideration of planning and program evaluation as integral parts of management.

CRIJ 5380 - Issues in Justice Administration

3 sem. hrs. Analysis of contemporary issues in the administration of justice. Emphasis on key concerns of major system components. May be repeated when topics vary.

CRIJ 5396 - Individual Study

3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Offered on application to and approval of the program coordinator.

Early Childhood/Kindergarten Education

ECED 5301 - Involving Families and Communities in the Lives of Young Children

3 sem. hrs. The course will encompass a study of the contributions of national, state, and local agencies, referral services, and family involvement as these relate to the lives of young children.

ECED 5303 - Graduate Studies in Early Childhood Education

3 sem. hrs. An introduction to research studies in early childhood education and an analysis of their implications for the classroom teacher. Students will be able to engage in action research in early childhood classrooms.

ECED 5334 - Developmentally Appropriate Early Childhood Curriculum

3 sem. hrs. An intensive study of the principles of curriculum, which includes philosophy, organization, recognition of diversity, selection and evaluation of curriculum materials, and development of an early childhood education program.

ECED 5337 - Cultural, Linguistic and Economic Diversity and the Effect on the Lives of Young Children

3 sem. hrs. The course will address a study of the factors related to culturally, linguistically, and economically diverse young children. Issues related to these diverse issues will be explored and effective strategies for working with these children and their families will be explored.

ECED 5340 - Appropriate Formal and Informal Assessment of all Young Children

3 sem. hrs. Formal and informal assessment strategies and tools used in the assessment of young children will be studied. Current recommended assessment practices and research in early childhood education will be examined.

ECED 5346 - Capstone Research Proposal in Early Childhood Education

3 sem. hrs. The course will facilitate the development of the research based capstone experience proposal. The proposal must focus on some aspect of early childhood education. Prerequisite: Introduction to Research (EDFN 5301) or consent of instructor.

ECED 5349 - Capstone Research Project in Early Childhood Education

3 sem. hrs. Students will implement and complete their capstone proposal. This may be a thesis or project, focus on some aspect of early childhood education and culminate in a formal written paper.

ECED 5390 - Professional Seminar

1-3 sem. hrs. Contemporary issues in Early Childhood Education: topics vary with professional identification of participants.

ECED 5397 - Practicum in Early Childhood Education

3 sem. hrs. An opportunity to secure practical experience in early childhood classrooms and analyze those programs in terms of available research. A personalized culminating experience for the early childhood specialist. Grade assigned will be “credit” (CR) or “no credit” (NC).

ECED 5696 - Directed individual Study

1-3 sem. hrs. May be repeated when topics vary. Programs will be designed for individual cases through special permission of the Department Chair and Dean.

Economics

ECON 5311 - Foundations in Economics*

3 sem. hrs. An intensive study for graduate students with limited or no academic experience in economics. Provides an introduction to economic principles, analysis and procedures used in graduate-level study. (This is a core course.)

ECON 5315 - Managerial Economics*

3 sem. hrs. A graduate-level course in managerial micro economics focusing on the use of economic tools and concepts to assist managers in decision-making. Topics may include market demand and elasticity, demand estimation, production and cost functions, marginal analysis under various forms of market structure and game theory. Prerequisites: ECON 5311 or equivalent.

ECON 5320 - Health Economics and Policy

3 sem. hrs. An analysis and evaluation of classical and modern economic theory, principles and procedures applicable to the health care delivery system and their implications for public policy. Prerequisites: ECON 5311 or equivalent/consent of instructor.

ECON 5335 - International Economics

3 sem. hrs. An analysis of why international trade takes place and how private agents react to changes in government policies. Determination of exchange rates, exports, imports, capital flows, employment, prices, interest rates, and economic growth are the focus of simple analytical techniques. Monetary and fiscal policies are also examined in an international macroeconomics context. Prerequisites: ECON 5311 or equivalent.

ECON 5370 - Seminar

1-3 sem. hrs. Seminar in an identified topic in economics. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

ECON 5396 - Directed individual Research Or Readings*

1-3 sem. hrs. Contact Director of Master's Programs.

Educational Administration

EDAD 5304 - Introduction to the Principalship

3 sem. hrs.
This course serves as an orientation to learner-centered leadership and the A&M-Corpus Christi administrator preparation program. Course activities include an assessment of student potential for learner-centered leadership and the development of an initial personal educational platform. Based on active class participation and discussion of simulated and real issues, students will construct an individual growth plan while exploring principles of professional ethics. Doctoral students will complete a research study on the best practices of the principalship. Students who have taken EDAD 5304 may not enroll in EDAD 6304.

Benchmark for this course is the successful completion of a professional portfolio with a personal educational platform. This will include a philosophy, an annotated bibliography and a professional toolkit.

EDAD 5310 - Assessment for Career and Technology Education

3 sem. hrs. A course designed to provide career education and technology instructors, counselors, and administrators with the knowledge and skills required to choose, administer and interpret aptitude, interest, and other appropriate instruments used to assist in making career decisions.

EDAD 5311 - Occupational Training for Special Populations Education

3 sem. hrs. Strategies and procedures for on-the-job training as well as instructional laboratory training of individuals with disabilities. This course includes the survey of applicable legislation and the identification of appropriate career counseling theories.

EDAD 5314 - Organization and Administration of Occupational Training and Development

3 sem. hrs. The administration of occupational training and development programs with emphasis on the implementation and operation of programs as specified by local, state and federal regulations.

EDAD 5360 - Organizational Theory

3 sem. hrs. The school as a formal organization. Focuses on theoretical aspects of organizational structures and processes with special reference to educational institutions. Doctoral students will do a scholarly analysis of two books related to Organizational Theory. Students who have taken EDAD 5360 may not enroll in EDAD 6360.

EDAD 5361 - Current Topics: Focus On Law and Facilities

3 sem. hrs. Overview of educational administration program content and the opportunity to discuss current issues in administration, which include structure and function of national, state and local agencies of educational governance and the politics of education. Doctoral students will do an exhaustive literature review culminating in a research paper on public school law or school facilities planning. Students who have taken EDAD 5361 may not enroll in EDAD 6361.

EDAD 5363 - Public School Law

3 sem. hrs.
This course is designed to study supervisory behavior and its related functions. Students are expected to acquire the knowledge and skills requisite to managing and supervising teaching and learning, and the knowledge, skills, and attitude related to an appropriate climate for instruction. Students who have taken EDAD 5376 may not enroll in EDAD 6376.

Benchmark for this course will be the ILD Proficiencies and a personal philosophy research paper.

EDAD 5364 - Management of Educational Programs and Special Units

3 sem. hrs. This course emphasizes the management of the internal organization and support of units of a campus. Topics include student grouping, staffing, scheduling, programming for special population students, textbooks, food service, campus security and pupil transportation. Students who have taken EDAD 5364 may not enroll in EDAD 6364.

EDAD 5366 - Personnel Management

3 sem. hrs.
Selection, assignment and evaluation of school personnel; salary and conditions of service for administrators, and instructional and non-instructional personnel. Doctoral students will do a research paper on some aspect of the human resource function of school administration. Students who have taken EDAD 5366 may not enroll in EDAD 6366.

Benchmark for this course is the development of a professional resume and an analysis of a particular category of school employee presented to the class formally for a grade.

EDAD 5367 - Public School Finance

3 sem. hrs. Study of the legal and conceptual basis of financing public schools with emphasis on Texas' economics of school finance; taxation trends and revenue sources; financial inequalities in opportunity, ability and effort; alternative models of school financing; managing educational resources at the district level. Students who have taken EDAD 5367 may not enroll in EDAD 6367.

EDAD 5368 - School Public Relations

3 sem. hrs. Relationships between school districts and other societal institutions and their public opinion and attitudes, relationships with news media, conducting bond campaigns, the use of citizens' advisory boards. Doctoral students will do a comprehensive literature review culminating in a paper on some aspect of school public relations. Students who have taken EDAD 5368 may not enroll in EDAD 6368.

EDAD 5369 - The School Superintendency

3 sem. hrs. Simulation of the school superintendency; superintendent's relationships with the school board, administration staff and teacher organizations; the superintendent's planning responsibilities. Doctoral students will do a comprehensive literature review resulting in a research paper related to the superintendency. Students who have taken EDAD 5369 may not enroll in EDAD 6369.

EDAD 5374 - Campus Finance and Budgeting

3 sem. hrs.
This course is a study of the financial operations of public school campuses in Texas. Seeks to equip the principal with the knowledge and skills necessary to understand and manage the budgeting, accounting, planning, purchasing and auditing functions of a campus. Doctoral students will also complete a research paper on the theory of Public School Finance. Students who have taken EDAD 5374 may not enroll in EDAD 6374.

Benchmark for this course will be the development of a campus budget with use of an AEIS report. Monies for the development of the budget are determined by the special program enrollment and enrollment individually selected by the students.

EDAD 5375 - Communication and Community Relations

3 sem. hrs.
A study of the multi-dimensional role of school community relations and administrative communication at the campus level. This course seeks to emphasize the importance of designing programs relating to the needs and problems of the school and its internal and external publics by employing analysis, oral and written communication formats, communication skills and processes, for a diverse democratic environment where citizen cooperation and involvement in school affairs is key to dynamic support and success of the school. Doctoral students will complete a scholarly paper on some topic related to school communications/community relations. Students who have taken EDAD 5375 may not enroll in EDAD 6375.

Benchmark for this course will be the development and presentation of a public relations plan and strategy for a campus.

EDAD 5376 - Supervision of Teaching

3 sem. hrs.
This course is designed to study supervisory behavior and its related functions. Students are expected to acquire the knowledge and skills requisite to managing and supervising teaching and learning, and the knowledge, skills, and attitude related to an appropriate

climate for instruction. Students who have taken EDAD 5376 may not enroll in EDAD 6376.

Benchmark for this course will be the ILD Proficiencies and a personal philosophy research paper.

EDAD 5377 - Teacher Appraisal System

3 sem. hrs. This course examines the structure and function of the official appraisal system for Texas teachers. The course is designed to explore all facets of the current teacher evaluation process for the State of Texas. At the successful conclusion of the course, the students will receive official certification by the State of Texas to use the current teacher evaluation process for the State of Texas to appraise teachers.

EDAD 5378 - Application of Administrative Concepts

3 sem. hrs.
Students will demonstrate the capacity to plan for the use of administrative concepts in the solution of problems in a simulated school; assessment of student ability to apply knowledge in the solution of practical problems; time management techniques for administrators; conflict management strategies. Instructor approval required. Doctoral students will complete a scholarly paper on Landmark court cases in Texas. Students who have taken EDAD 5378 may not enroll in EDAD 6378.

Benchmark for this course will be the Case Studies analysis presented to the class and a successful in-basket analysis.

EDAD 5390 - Professional Seminar

1-3 sem. hrs. Contemporary issues in education; topics vary with professional identification of participants.

EDAD 5398 - Practicum in the School Superintendency

3 sem. hrs. On-the-job training in a school superintendent's office. Doctoral students will write a reflection paper on the practicum relating it to the most current literature in the field. Students who have taken EDAD 5398 may not enroll in EDAD 6398. Grade assigned will be “credit” (CR) or “no credit” (NC).

EDAD 5399 - School Administration Practicum

3 sem. hrs.

Required of all certification candidates. Serves as the culminating experience and the capstone of the degree/certification program. During the internship, students will assess the suitability of their skills and dispositions for administrative work; integrate skills and knowledge previously acquired; and become socialized into the administrative role. Grade assigned will be "credit" (CR) or "no credit" (NC). Instructor approval required. Student must have completed 24 hours toward the Masters; 15 hours for certification. Students who have taken EDAD 5399 may not enroll in EDAD 6399. All students taking this course must have valid teaching certificate and permission of the department. Students who do not hold a certificate in teaching may complete EDAD 5396. Students enrolled in EDAD 5396 are not eligible for a principal certification.
Benchmark for this course will be the successful completion of an internship log that is referenced by 100 hours of activity in the six principal domains. The log must be verified by the site supervisor. Must have valid teaching certificate and permission of the program coordinator. Grade assigned will be "credit" (CR) or "no credit" (NC).

EDAD 5696 - Directed individual Study

1-3 sem. hrs. Programs will be designed for individual cases. May be repeated when topics vary. Permission of instructor, Department Chair, and College Dean required.

EDAD 6361 - Current Topics: Focus on Law and Facilities

3 sem. hrs. Overview of educational administration program content and the opportunity to discuss current issues in administration, which include structure and function of national, state and local agencies of educational governance and the politics of education. Doctoral students will do an exhaustive literature review culminating in a research paper on public school law or school facilities planning. Students who have taken EDAD 5361 may not enroll in EDAD 6361.

EDAD 6363 - Public School Law

3 sem. hrs.

This course is designed to study supervisory behavior and its related functions. Students are expected to acquire the knowledge and skills requisite to managing and supervising teaching and learning, and the knowledge, skills, and attitude related to an appropriate climate for instruction.
Benchmark for this course will be the ILD Proficiencies and a personal philosophy research paper.

EDAD 6367 - Public School Finance

3 sem. hrs. Study of the legal and conceptual basis of financing public schools with emphasis on Texas' economics of school finance; taxation trends and revenue sources; financial inequalities in opportunity, ability and effort; alternative models of school financing; managing educational resources at the district level. Students who have taken EDAD 5367 may not enroll in EDAD 6367.

EDAD 6368 - School Public Relations

3 sem. hrs. Relationships between school districts and other societal institutions and their public opinion and attitudes, relationships with news media, conducting bond campaigns, the use of citizens' advisory boards. Doctoral students will do a comprehensive literature review culminating in a paper on some aspect of school public relations. Students who have taken EDAD 5368 may not enroll in EDAD 6368.

EDAD 6369 - The School Superintendency

3 sem. hrs. Simulation of the school superintendency; superintendent's relationships with the school board, administration staff and teacher organizations; the superintendent's planning responsibilities. Doctoral students will do a comprehensive literature review resulting in a research paper related to the superintendency. Students who have taken EDAD 5369 may not enroll in EDAD 6369.

EDAD 6376 - Supervision of Teaching

3 sem. hrs. This course is designed to study supervisory behavior and its related functions. Students are expected to acquire the knowledge and skills requisite to managing and supervising teaching and learning, and the knowledge, skills, and attitude related to an appropriate climate for instruction. Students who have taken EDAD 5376 may not enroll in EDAD 6376.

EDAD 6377 - Teacher Appraisal System

3 sem. hrs. This course examines the structure and function of the official appraisal system for Texas teachers. The course is designed to explore all facets of the current teacher evaluation process for the State of Texas. At the successful conclusion of the course, the students will receive official certification by the State of Texas to use the current teacher evaluation process for the State of Texas to appraise teachers. Students who have taken EDAD 5377 may not enroll in EDAD 6377.

EDAD 6378 - Application of Administrative Concepts

3 sem. hrs. The use of administrative concepts in the solution of problems in a simulated school; assessment of student ability to apply knowledge in the solution of practical problems; time management techniques for administrators; conflict management strategies. Instructor approval required. Doctoral students will complete a scholarly paper on Landmark court cases in Texas. Students who have taken EDAD 5378 may not enroll in EDAD 6378.

EDAD 6398 - Practicum in the School Superintendency

3 sem. hrs. On-the-job training in a school superintendent's office. Doctoral students will write a reflection paper on the practicum relating it to the most current literature in the field. Students who have taken EDAD 5398 may not enroll in EDAD 6398. Grade assigned will be "credit" (CR) or "no credit" (NC).

EDAD 6399 - School Administration Practicum

3 sem. hrs. Required of all certification candidates. Serves as the culminating experience and the capstone of the degree/certification program. During the internship, students will assess the suitability of their skills and dispositions for administrative work; integrate skills and knowledge previously acquired; and become socialized into the administrative role. Grade assigned will be Credit (C) or No Credit (NC). Instructor approval required. Student must have completed 24 hours toward the Masters; 15 hours for certification. Students who have taken EDAD 5399 may not enroll in EDAD 6399. All students taking this course must have valid teaching certificate and permission of the department. Students who do not hold a certificate in teaching may complete EDAD 5396. Students enrolled in EDAD 5396 are not eligible for a principal certification. Benchmark for this course will be the successful completion of an intership log that is referred by 100 hours of activity in the six prinicipal domains. The log must be verifiedby the site supervisor. Must have valid teaching certificate and permission of the program coordinator.
Grade assigned will be "credit" (CR) or "no credit" (NC). Must have valid teaching certificate and permission of the program coordinator. Grade assigned will be "credit" (CR) or "no credit" (NC).

EDAD 6696 - Directed Individual Study

1-6 hrs. sem. hrs. May be repeated when topics vary. Programs will be designed for individual cases through speical permission of the Department Chair and Dean.

Educational Curriculum and Instruction

EDCI 5320 - Mathematics through Communication

3 sem. hrs. A course for elementary and middle school teachers who are trying to improve mathematics teaching and understanding through the development of communication skills and their use in the mathematics classroom.

EDCI 5321 - Mathematics through Children's Literature

3 sem. hrs. This is a course for teachers who wish to investigate the connection between children's literature and mathematics for the purpose of improving mathematics instruction. Teachers will work through activities based upon children's books, and develop and share similar activities based upon children's books of their choosing.

EDCI 5322 - Science through Children's Literature

3 sem. hrs. This course is designed for elementary and middle school teachers who wish to investigate the connections between children's literature and science for the purpose of improving their science instruction. Teachers will participate in activities based on children's trade books that have scientific themes, and develop and share similar experiences.

EDCI 5323 - Interactive and Multimedia Approaches in Mathematics

3 sem. hrs. This is a course for K-12 teachers who wish to investigate the use of motivational and reinforcement activities as a part of the instructional program within mathematics. Emphases will be placed on the purposes for using such activities in the mathematics program, the various types of such activities that are available to the mathematics teacher, the sources for such activities in mathematics, and the need for having a variety of such activities within the mathematics program.

EDCI 5324 - Diagnosis and Remediation of Mathematical Errors

3 sem. hrs. This is a course for teachers of K-12 who teach mathematics within the levels of kindergarten through algebra and wish to investigate mathematical errors for the purpose of diagnosing the cause and planning instruction for the purpose of remediation. Participating teachers will work through activities representing common mathematical errors made by students, maintain portfolios of samples of student errors, diagnose student errors, and learn teaching strategies for remediation of the problems that students are having.

EDCI 5325 - Applied Connections: Mathematics, Science, and Communications

3 sem. hrs. The emphasis in this course is on interdisciplinary connections among mathematics, science, and communication and also on the application of subject-area

knowledge to the world of work. Attention goes to relevant research, particularly research addressing effective innovations in teaching and learning. Networks will be created to support continued learning.

EDCI 5330 - Teaching Environmental Sciences: I

3 sem. hrs. In this course, emphasis will be placed on issues related to air, water and waste reduction, and how these issues relate to the elementary classroom. Students will visit state agencies and industrial sites as a part of this course. This course is only offered during the summer. Grade assigned will be “credit” (CR) or “no credit” (NC).

EDCI 5331 - Teaching Environmental Sciences: II

3 sem. hrs. In this course, emphasis will be placed on issues related to air, water and waste reduction, and how these issues relate to the secondary classroom. Students will visit state agencies and industrial sites as a part of this course. This course is only offered during the summer. Grade assigned will be “credit” (CR) or “no credit” (NC).

EDCI 5335 - Methods of Teaching Mathematics: Grades 1-5

3 sem. hrs. A course designed to emphasize methods of teaching the essential elements in mathematics for Grades 1-5. An emphasis will be placed on the use of concrete manipulatives so that learning is accomplished with understanding.

EDCI 5336 - Methods of Teaching Mathematics: Grades 5-8

3 sem. hrs. Emphasis will be placed on modeling with concrete manipulatives, teaching for understanding, integrating mathematics into other areas of the curriculum, problem solving, diagnosis, and evaluation.

EDCI 5339 - Programs for the Gifted and Talented

3 sem. hrs. Characteristics and methods of identification of the Gifted and Talented. Various programmatic models including campus and district will be examined. Testing instruments and the concepts of differentiated curriculum will be analyzed.

EDCI 5340 - Instructional Techniques for Effective Teaching

3 sem. hrs. This course will emphasize research-based strategies for increasing student achievement, models of successful instruction to help teachers/ administrators plan, and techniques for implementation of effective instructional techniques.

EDCI 5341 - Learning Theory Related to the Gifted Child

3 sem. hrs. An examination of current learning theories in relation to the gifted and talented child. Prerequisite: EDCI 5339.

EDCI 5342 - Curriculum Development for the Gifted and Talented

3 sem. hrs. Learning experiences in scope and sequence development, development of unit plans and lesson plans, and material selection and evaluation. Prerequisite: EDCI 5339.

EDCI 5345 - Visual Literacy

3 sem. hrs. lecture This course acquaints learners with a blend of instructional design, development, and production competencies that will contribute to their visual literacy. Instructional materials' design and development skills learned will be based on theoretical and research issues related to visual literacy.

EDCI 5350 - Advanced School Problems

3 sem. hrs. Current issues in education; recent research bearing on teaching and organization of instructional programs in schools.

EDCI 5361 - Educational Assessment

3 sem. hrs. lecture This course will help educators to understand testing and performance assessment, and to effectively use assessment to support student learning ultimately building student success. The course prepares educators to use assessment as a tool to help develop all students in their classroom across the developmental span from Kindergarten through high school. Educators will learn how to prepare valid assessment instruments that contribute to effective instruction and student learning by developing proven, sound, high-quality assessments for use in the classroom.

EDCI 5362 - Theoretical Bases for Curriculum

3 sem. hrs. Reviewing and designing instructional programs; specific techniques for planning in various areas of the curriculum; concentration in area of student’s curricular specialty; specification of instructional objectives.

EDCI 5389 - Curriculum and instruction Research Seminar

3 sem. hrs. This is designed as the culminating course in the interdisciplinary curriculum and instruction master's degree. Covered in the class are: historical and current trends in research, the critical examination of selected research studies, and a self analysis of personal and professional interests and needs. This course calls for students to integrate and use information from previous graduate classes with information presented in this class to develop, implement, and defend an action-based research project. Prerequisite: EDFN 5301, EDCI 5340, and 12 semester hours of graduate work.

EDCI 5390 - Professional Seminar

1-3 sem. hrs. This course addresses contemporary issues in education. It may repeated when topics vary.

EDCI 5395 - Strategies of Success II for the Beginning Teacher

3 sem. hrs.

This course is provided for beginning teachers during their second year on a "Probationary Certificate." Students are provided with the application of learning principles, communication skills, and teaching strategies that will reinforce their existing teaching skills. Enrollment is limited to teachers on a TEA "Probationary Certificate," but currently in teaching positions This course is taken during the second semester of the second year on a "Probationary Certificate.". Prerequisites: EDCI 5393, EDCI 5394, and EDCI 5327.

EDCI 5696 - Directed individual Study

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

EDCI 5698 - Practicum for Gifted Children

6 sem. hrs. This course involves a supervised experience with a variety of children classified as gifted. Students will plan and implement a program designed for gifted children. Prerequisites: EDCI 5339 or permission of instructor.

EDCI 6301 - Philosophy of Education

3 sem. hrs. Ontological and epistemological perspectives on leadership; historical conceptions of leadership as revealed in the works of Greek and Roman writers of the classical period and in the works of later European writers such as Machiavelli, Hobbes, Rousseau, Mill, and Weber.

EDCI 6303 - Issues in Curriculum and instruction

3 sem. hrs. This course will prepare the doctoral student in curriculum and instruction to understand, appreciate, and evaluate a variety of curricular strategies with attention paid to a continuum of philosophies and strategies in the area of curriculum development and the impact of those on instruction. Prerequisites: EDCI 6301 or EDCI 6324.

EDCI 6324 - Curriculum Theory^

3 sem. hrs. An analysis of theoretical structures underlying curriculum development, implementation and evaluation.

EDCI 6335 - Curriculum Research Design

3 sem. hrs. This course focuses on the design of research studies, including experimental and quasi-experimental designs, other quantitatively-based designs, qualitatively-oriented designs, and mixed model designs. Prerequisites; EDLD 6333, EDLD 6384, EDLD 6392, and EDLD 6385.

EDCI 6336 - Culture, Language, and Cognition^

3 sem. hrs. The focus is on cultural, linguistic, and pedagogical rationales for adapting curricula and materials to meet the needs of diverse students. By adopting various theoretical, methodological, and cultural frames of reference, course participants recognize capabilities in all learners.

EDCI 6356 - Writing for Publications in Higher Education

3 sem. hrs. This course addresses topics in writing for publication in higher education including the writing process, composition, organization, collaboration, and the identification of forums for dissemination of research and scholarship.

EDCI 6390 - Special Topics in Curriculum

3 sem. hrs. This course addresses contemporary issues in education. Topics vary. It may be repeated when topics vary.

EDCI 6391 - Historical Perspectives On Curriculum

3 sem. hrs. Taking a historical perspective on the purposes and practices of schooling, this course covers major patterns in curriculum through the years in a national and global context. Also addressed are historiography and the history of educational research.

EDCI 6392 - Critical Pedagogy

3 sem. hrs. Attention goes to a set of philosophical positions and educational practices known as “critical pedagogy” and also to critiques and inquiries associated with this line of scholarship that address issues of difference and disadvantage. The course considers historical patterns as well as current manifestations in such areas as race, gender, and politics.

EDCI 6397 - Seminar On Dissertation Research

3 sem. hrs. This course is designed to assist students in writing a research proposal (introduction, review of literature, methods) that may become the basis for a doctoral dissertation. Prerequisites: EDCI 6335

EDCI 6398 - Dissertation in Progress

1-6 sem. hrs. Doctoral candidates conduct an approved study under the supervision of a dissertation advisor and committee.

EDCI 6696 - Directed Individual Study

1-6 hrs. sem. hrs. May be repeated when topics vary. Programs will be designed for indivudual cases through special permission of the Department Chair and Dean.

EDUC 5327 - Strategies of Success I for the Beginning Teacher

3 sem. hrs. This course is provided for beginning teachers during their second year on a “Probationary Certificate.” Students are provided with the application of learning principles, classroom management techniques, communication skills, and teaching strategies that will reinforce their existing teaching skills. Enrollment is limited to teachers on a TEA “Probationary Certificate,” but currently in teaching positions. This course is taken during the first semester of the second year on a “Probationary Certificate.” Prerequisites: EDUC 5393 - Internship I and Seminar for the intern Teacher* and EDUC 5394 - Internship II and Seminar for the intern Teacher .

EDUC 5351 - Foundations of Education in America*

3 sem. hrs. A course emphasizing multicultural aspects of education; requirements for teaching as they relate to special education students, including the gifted and talented; the legal and ethical aspects of teaching; and the forms of organization and management utilized in Texas and in the U.S. Enrollment limited to graduate students seeking initial teacher certification.

EDUC 5352 - Planning, Teaching, Learning Processes*

3 sem. hrs. A course emphasizing the various aspects of planning for teaching: the teaching/learning process; curriculum organization; use of instructional media and technology; instructional planning; and instructional and student evaluation, including standardized testing programs, teacher evaluation, and various forms of instructional and student evaluation planned and conducted by the teacher. Each student will participate in field experiences. Enrollment limited to graduate students seeking initial teacher certification.

EDUC 5353 - Classroom Management and the Student*

3 sem. hrs. A course emphasizing methods of organizing and managing a classroom, and student growth and development concepts and how they will affect classroom management. Enrollment limited to graduate students seeking initial teacher certification. Prerequisite: Admission to Teacher Education.

EDUC 5354 - Methods of Teaching Mathematics

3 sem. hrs. A course emphasizing the teaching of mathematics in Grades 1-8 using manipulatives in a problem-solving format. Instruction will build upon the following topics which will have been introduced in previous courses: the teaching-learning process, curriculum organization, use of instructional technology, instructional planning, and instructional and student evaluation. Each student will participate in field experiences. Enrollment limited to graduate students seeking initial teacher certification. Prerequisites: Mathematics Content for the Elementary Teacher, or concurrent enrollment in EDUC 5352 Planning, Teaching, Learning Processes.

EDUC 5355 - Methods of Teaching Social Studies

3 sem. hrs. A course emphasizing practical applications for the teaching of social studies in Grades 1-8. Instruction will build upon the following topics, which will have been introduced in previous courses: the teaching-learning process, curriculum organization, use of instructional technology, instructional planning, and instructional and student evaluation. Each student will participate in field experiences. Enrollment limited to graduate students seeking initial teacher certification. Prerequisites: 9 semester hours from a minimum of two areas (U.S. History, Geography, U.S. Government, and State Government), or concurrent enrollment in EDUC 5352 Planning, Teaching, Learning Processes.

EDUC 5356 - Methods of Teaching Science

3 sem. hrs. This course is designed to provide pre-service teachers with an understanding of the teaching of science in the elementary school setting. 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. Participation in field experiences is a requirement of this course. Enrollment limited to graduate students seeking initial teacher certification. Prerequisite or concurrent enrollment: EDUC 5352 Planning, Teaching, Learning Processes.

EDUC 5357 - Strategies for Teaching in the Secondary School

3 sem. hrs. A course emphasizing practical and varied strategies for instructional planning and presentations. Instruction will build upon the following topics, which will have been introduced in previous courses: the teaching-learning process, curriculum organization, use of instructional technology, instructional planning, and instructional and student evaluation. Each student will participate in field experiences. Enrollment limited to graduate students seeking initial certification. Prerequisite or concurrent enrollment: EDUC 5352 Planning, Teaching, Learning Processes.

EDUC 5358 - Applied Research and Professional Writing*

3 sem. hrs. A course emphasizing the finding, interpreting, and use of research to achieve a stated educational goal for each individual student. Concepts of tests and measurements will be emphasized for interpreting research results and gathering data for applied research. Students will develop and execute an applied inquiry project. Enrollment limited to graduate students seeking initial teacher certification. Prerequisite: Completion with GPA of 2.5 or higher of EDUC 5351, 5352, 5353, 5354, 5355, 5356, 5357 courses. This course will only be offered in the fall and spring semesters.

EDUC 5390 - Professional Seminar

1-3 sem. hrs. lecture This course addresses contemporary issues in education. May be repeated for credit when the topic varies.

EDUC 5395 - Strategies of Success II for the Beginning Teacher

3 sem. hrs. This course is provided for beginning teachers during their second year on a "Probationary Certificate." Students are provided with the application of learning principles, communication skills, and teaching strategies that will reinforce their exisiting teaching skills. Enrollment is limited to teachers on a TEA "Probationary Certificate," but are currently in teaching positions. This course is taken during the second semester of the second year on a "Probationary Certificate." Prerequisites: EDUC 5393 -

Internship I and Seminar for the intern Teacher*, EDUC 5394 - Internship II and Seminar for the intern Teacher, and EDUC 5327 - Strategies of Success I for the Beginning Teacher.

Educational Foundations

EDFN 5301 - Introduction to Research

3 sem. hrs.
The graduate level course is offered in support of graduate degree programs in the College of Education. It is designed to introduce the student to the fundamentals of research in education and applied behavioral sciences. That is, students will explore what research involves, the various types of research, the techniques for conducting research studies, ethical behavior in the conduct of research, and research in educational settings. Descriptive and inferential statistics will be presented in the context of the research study. Social issues related to educational research will also be presented and discussed.

Educational Leadership

EDLD 6301 - Philosophy of Education

3 sem. hrs. Ontological and epistemological perspectives on leadership; historical conceptions of leadership as revealed in the works of Greek and Roman writers of the classical period and in the works of later European writers such as Machiavelli, Hobbes, Rousseau, Mill, Weber, and Lenin.

EDLD 6302 - Residency Seminar

3 sem. hrs. Current issues in educational leadership; national, state, and regional perspectives (taken during two consecutive semesters of academic year residency).

EDLD 6303 - The Politics of Education

3 sem. hrs. Educational functioning from a political systems perspective; internal and external political forces influencing organizational effectiveness; shaping of educational policy; functional means of attaining and utilizing political power.

EDLD 6304 - Community College and University Administration

3 sem. hrs. The purpose of this course is to examine the history and development of American systems of higher education and to study the ways in which community colleges and universities complement each other on the educational scene. Organization,

funding, remedial education, and relations with the wider community will also be discussed.

EDLD 6305 - Student Affairs in Colleges and Universities

3 sem. hrs. This course is designed to provide students with knowledge of the field of student affairs, its role and function in college student development, and its fit with the academic program. This course is also intended to provide students with an understanding of the purposes and historical development of student personnel programs, the administrative structure of student affairs division in two and four year colleges, and the institutional units that fulfill the student services function.

EDLD 6306 - Higher Education in a Democratic Society

3 sem. hrs. This course will examine contemporary issues in American society in the context of higher education. Students will study and debate in detail how two and four year colleges and universities respond to societal issues. The course will also examine the ways in which institutions of higher education are influenced by social issues and how they in turn influence society.

EDLD 6307 - Higher Education Finance

3 sem. hrs. This course is designed to provide students with knowledge of higher education funding in Texas, not only at the State level but also at the institutional level. The material will also provide students with a background of the historical, philosophical, and political forces that have contributed to the current funding systems in Texas and throughout the United States. Course material will also include trends in higher education funding on a state, national, and international scope.

EDLD 6308 - Higher Education and the Law

3 sem. hrs. Study of basic legal issues as they relate to governance in higher education; including legal issues relating to trustees, administrators, staff, faculty and students; legal relationships with local, state and federal government. The course also addresses legal issues relating to accrediting, athletic and faculty associations. Legal relationships with the business/industrial community are also covered.

EDLD 6310 - The Education and Training of Adults

3 sem. hrs. The purpose of this course is to introduce adult education as both a field of practice and a field of study to professionals working in universities, community colleges, businesses, government, social service agencies, and other venues concerned with the

education and training of adults. Exemplary practices in adult education and training reflect theoretic constructs undergirding the field; therefore, EDLD 6310 is a theory-into-practice class.

EDLD 6311 - Contemporary Theories of Educational Leadership^

3 sem. hrs. Assumptions of the major schools of thought regarding leadership; findings from research conducted pursuant to trait theory, behavioral theory, and situational/contingency models; conceptions of leadership effectiveness; implications for leadership in educational organizations.

EDLD 6312 - Clinical Leadership Laboratory

3 sem. hrs. Students will undergo assessment of personal leadership skills through assessment center methodologies. Abilities assessed will include decision-making, group participation, interpersonal communication, and presentation skills.

EDLD 6313 - Policy Development and Decision-making

3 sem. hrs. Study of policy conceptualization; development and implementation integrated with decision-making processes; ethical and moral responsibility of educational leadership.

EDLD 6314 - Professionals in Educational Organizations

3 sem. hrs. The nature of professionalism in education; points of conflict between bureaucratic and professional norms; accommodations to conflict; integrating professional norms with organizational requirements; organizational leadership of professionals; the character of professional associations in education.

EDLD 6315 - Multicultural Analysis: Concepts for Educational Leaders

3 sem. hrs. Study of multicultural relations in American society and an exploration of critical problems confronting educational systems in general and educational leaders in particular.

EDLD 6321 - Instructional Theory

3 sem. hrs. Theoretical basis for understanding instructional models and processes; research relevant to factors influencing instructional effectiveness and the interaction among instructional and learning variables.

EDLD 6322 - Analysis of Learning Environments

3 sem. hrs. Analysis of the school and classroom social system; examination of social, cultural, and psychological variables that influence school learning.

EDLD 6324 - Curriculum Theory

3 sem. hrs. An analysis of theoretical structures underlying curriculum development; implementation and evaluation.

EDLD 6331 - Educational innovations

3 sem. hrs. An examination of the basic elements of successful school renewal programs with emphasis on systematic approaches to educational innovation and the process of change; studies of successful innovative programs.

EDLD 6333 - Applied Statistics 1

3 sem. hrs. This is a course in univariate statistics, which includes the use of Statistical Package for the Social Sciences (SPSS) with exercises related to various descriptive and inferential statistical techniques.

EDLD 6335 - Quantitative Research Methods

3 sem. hrs.

The course is designed to provide the student with the knowledge and skills needed to read, analyze and synthesize educational research, and to give the student experience in the development and conduct of a research project. Course content includes instruction in preparation of a research proposal, identification of a research problem, sampling techniques, research design, instrumentation, data collection, and data analysis.

Prerequisite: EDLD 6333, EDLD 6392, EDLD 6384

Prerequisite: EDLD 6392.

EDLD 6342 - Community Leadership Development

1-3 sem. hrs. This course develops collaborative leadership skills related to initiating and implementing school and community partnerships. A special focus is the enhancement of critical literacy skills–the capacity to read and interpret events within the socio-political context of community-embedded educational leadership.

EDLD 6384 - Qualitative Research Methods

3 sem. hrs. This course is based on reviews of the theoretical and methodological approaches to qualitative research. Students will situate qualitative inquiry/research in their philosophical, theoretical, and historical situations, learn methods of qualitative design, and develop a preliminary capacity to collect, analyze, and interpret qualitative empirical materials.

EDLD 6385 - Advanced Data Analysis in Qualitative Methods

3 sem. hrs. This course is designed for doctoral students who want to pursue their interests in qualitative methods and who want to use these methods in their dissertation. Students would need to have a qualitative research methods course completed in order to take this class. Students will learn to use various qualitative data analysis methods using multiple data sources. Prerequisite: EDLD 6384

EDLD 6390 - Special Topics in Educational Leadership

1-6 hrs. sem. hrs. Selected topics in an identified area of Educational Leadership; advanced investigations of selected topics and problems dealing with curriculum theory, program design, and experimental formulations. May be repeated for credit when topics vary.

EDLD 6392 - Applied Statistics 2

3 sem. hrs.

The course in advanced statistical procedures is a continuation of EDLD 6333. Special emphasis is placed on analysis of variance (ANOVA) techniques such as one-way and factorial ANOVA, analysis of covariance (ANCOVA), repeated measures ANOVA, and multivariate analysis of variance (MANOVA), as well as multiple regression analysis, logistic regression analysis, and discriminant analysis. Also included are selected nonparametric statistical techniques. The course includes hands-on experiences in the use of Statistical Package for the Social Sciences (SPSS) with exercises related to the topics covered.
Prerequisite: EDLD 6333

EDLD 6395 - Analysis and Reporting of Research Data

3 sem. hrs. This course is designed for doctoral students who want to develop their data analysis skills for their research projects in order to report findings for publication

purposes and dissertations. Students will learn how to select appropriate data analysis methods, analyze data, and learn how to academically report research findings.

EDLD 6397 - Dissertation Research

3 sem. hrs. This course is designed to assist the student in writing a three-chapter (introduction, review of literature, methods) research proposal that may become the basis for a doctoral dissertation. Prerequisites: EDLD 6333, EDLD 6384, EDLD 6335, EDLD 6392.

EDLD 6398 - Dissertation

1-6 sem. hrs. Completion of an approved field study under the supervision of a dissertation adviser.

EDLD 6609 - Practicum in Higher Education: Processes and Practices

1-6 sem. hrs. This course will examine the functions and practices typically found in institutions of higher education. Students will examine these functions and practices in the context of a complex organization and develop an understanding of how they contribute to the mission of the institution. Students will also complete an internship experience in a University or community college office, not their own. Prerequisite: Instructor's permission required. Grade assigned will be "credit" (CR) or "no credit" (NC).

EDLD 6696 - Directed Individual Study

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

Educational Research and Studies

ERST 5302 - Studies in Equality of Educational Opportunities*^

3 sem. hrs. Recent developments affecting the education of minority children and youth; innovations in program development and equality of educational opportunity.

Educational Technology

IDET 5300 - Instructional Design and Educational Technology Foundations

3 sem. hrs.

Conceptual foundations of the field of Instructional Design and Educational Technology. Considers historical factors that contributed to the development of the field. Considers underlying systems concepts. Introduces major publications and professional organizations in the field. Includes a research project.

IDET 5301 - Applications in integrated Software

3 sem. hrs. Practical application skills for using record keeping, and mail-merge skills for using integrated software in a school environment. Portfolio that includes materials related to classroom management and communication, record keeping, and instruction will be developed.

IDET 5302 - Computer Applications in Education*

3 sem. hrs. Introduces the uses of technology in classroom environments. Examines and practices technology integration within classroom environments, using various applications, instructional and productivity software, as well as evaluation tools and resources. Addresses development of integrated instructional activities and a collaborative final project related to selected instructional goals.

IDET 5303 - Instructional Hypermedia*

3 sem. hrs. Application of a variety of computing applications integral to effective hypermedia development. Study of hypermedia design research. Production of a series of hypermedia objects in audio, video, and graphic production, as well as a final project related to selected instructional goals.

IDET 5304 - Instructional Design*

3 sem. hrs. Provides an introduction to instructional design theory, principles, and techniques and related learning theories. Considers various instructional design models including the Instructional Systems Development Model. Includes development of a final instructional design project. While there is no prerequisite for this course it is recommended that IDET 5304 be completed first.

IDET 5305 - Instructional Design Applications*

3 sem. hrs.

Specification of research-based instructional strategies for various categories of learning outcomes. Applied use of educational technologies to design and develop instructional materials that are consistent with research findings in the field.

IDET 5310 - Internet Resources in Education and Training

3 sem. hrs. Surveys uses of Internet resources for instruction. Considers design standards and software tools for web development. Considers instructional strategies involving use of Internet resources to support learning.

IDET 5320 - Project Based Learning and Related Strategies for Technology Integration*

3 sem. hrs.

A course designed to enable participants to thoughtfully plan for integration of computers and other media in instruction. Examines the Project-Based Learning Model to engage learners in projects requiring investigation, analysis, synthesis, and presentation in real-world situations. Considers a rationale for technology integration, learning theory, evaluation of interactive media, strategies for technology integration, and related student assessment.

IDET 5360 - Design Strategies for Online Instruction and Learning Management Systems*

3 sem. hrs.

This course is designed to provide educators with an overview of the instructional and programmatic factors that should be considered when designing, developing, and delivering an online course. Incorporates research-based knowledge consistent with International Association for K-12 Online Learning (iNACOL) and Texas Virtual School Network (TxVSN) standards. This course considers the specific needs of online students as well as the pedagogical and technical skills necessary to succeed when teaching online. Aspects of course website usability and accessibility are also addressed.

IDET 5365 - Instructional Materials Development for Learning Management Systems

3 sem. hrs.

A course addressing research and best practices related to the development of instructional activities and materials for online instruction within a learning management system environment. Incorporates research-based knowledge consistent with

International Association for K-12 Online Learning (iNACOL) and Texas Virtual School Network (TxVSN) standards. Consistent with those standards, researches sound instructional strategies for promoting student success. Covers legal, ethical, and safe behavior related to technology use. Considers research on the development and delivery of assessments and assignments that meet standards-based learning goals. Reviews research on assessment and measurement of learning and use of data from assessment and other sources to formatively modify content.

IDET 5380 - Educational Technology for Administrators

3 sem. hrs. This course serves the modern administrator regarding problems of use, selection, and management of administrative educational technology at the campus level.

IDET 5390 - Professional Seminar

3 sem. hrs. Contemporary issues in educational technology; topics vary with professional interests and needs of participants.

IDET 5397 - Instructional Design and Educational Technology Practicum

3 sem. hrs. Students will design and assemble their IDET Masters journey professional portfolio and complete a service-based, on-the-job guided practice in the planning and use of educational technologies and instructional design skills within a program-approved learning environment. Prerequisite: Participants must have completed at least 12 semester hours of approved IDET course work to be eligible to complete the practicum.

IDET 5696 - Directed individual Study

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

IDET 6301 - Foundations of Instructional Design

3 sem. hrs. Explores theoretical, conceptual, technological and historical foundations of instructional design and educational technology. Examines the historical development of using technology for educational purposes. Includes intensive examination and application of contemporary learning theories and instructional design principles and processes related to use of technology in instructional environments. Prerequisite: Student must be in the doctoral study.

IDET 6315 - Project-Based Learning Types and Emerging Technologies

3 sem. hrs. This course takes a deeper look regarding emerging technologies and research-based practices in project-based and related learning environments. Students will be invited into a project-based experiential process that includes a local service outlet. Extension of Web 2.0, web conferencing, audio, emerging technologies and pedagogical practices are explored and integrated into their research of their project. Students review research on project-based and related learning environments, critically analyze the research, and develop a related theoretically-based paper for submission to a professional publication or conference. Prerequisite: Students must be in doctoral study.

IDET 6345 - Visual Literacy

3 sem. hrs. This fully online course acquaints learners with a blend of instructional design, development, and production competencies that will contribute to their visual literacy. Visual literacy is the ability to understand and use images, including the abilities to describe cultural and psychological meanings of images one encounters, as well as to think, learn, and express oneself with images. Instructional design and development skills learned will be based on theoretical and research issues related to visual literacy. Because the course is taught via the Web at a distance, learners will have to provide their own PowerPoint, graphics development, spreadsheets, and word processing software or use those provided in public spaces. Computer labs at TAMU-CC have the necessary softward. Any work may be done in this class in collaboration with others from the class. Students are expected to work with others as much as time permits and are expected to learn from and teach each other about visual literacy. The course is available at http://Bb9.tamucc.edu. Prerequisite: There are no prerequisites and the course may be taken as an elective.

IDET 6360 - Design Strategies for Online Instruction and Learning Management Systems

3 sem. hrs. Addresses concepts, structures, and design strategies for effective online instruction through exploration within a learning management system. Researches and develops experiential strategies for active learning, interaction, and collaboration. Considers student diversity, academic needs and accommodations, professional development, and online interactions. Also addresses arranging media and content within an LMS. Course content is consistent with International Association for K-12 Online Learning (iNACOL) and Texas Virtual School Network (TxSVN) standards. Prerequisite: Students must be in doctoral study.

IDET 6365 - Instructional Materials Development for Learning Management Systems

3 sem. hrs. A course addressing research and best practices related to the development of instructional activities and materials for online instruction within a learning management system environment. Incorporates research-based knowledge consistent with International Association for K-12 Online Learning (iNACOL) and Texas Virtual School

Network (TxVSN) standards. Consistent with those standards, researches sound instructional strategies for promoting student success. Covers legal, ethical, and safe behavior related to technology use. Considers research on the development and delivery of assessments and assignments that meet standards-based learning goals. Reviews research on assessment and measurement of learning and use of data from assessment and other sources to formatively modify content. Prerequisite: Students must be in doctoral study.

IDET 6370 - Online Course Design, Development, and Review

3 sem. hrs.

Participants in this project-based course must have access to a networked computer. Students learn how to create engaging instruction for online learners. The course is delivered as a workshop and field-based experience in which students create online instructional content in the Blackboard learning management system. Emphasis will be placed on application of learner-centered instructional strategies. Legal issues related to copyright and accessibility will be addressed.
The course consists of 4 phases:

- First, students explore ways to design engaging learning experiences by applying learner-centered pedagogy to course design and development.
- Second, students learn how to support academic integrity and follow ADA and copyright guidelines in their online course designs.
- Third, students fully develop a highly interactive, engaging online course where an instructor has a lot of personal presence.
- Fourth, students learn how to evaluate a course for quality and review a peer's course design.

Upon successful course completion students will receive a Professional Development and Continuity of Learning Certificate and a Certificate. Prerequisite: None.

IDET 6375 - Theoretical Foundations and Frameworks of Learning Environments

3 sem. hrs. The course is available at http://Bb9.tamucc.edu. This blended course provides students, faculty, and instructional designers with a clear, concise introduction to the major pedagogical and psychological theories and their implications for the design of new learning environments for schools, universities, or corporations. Students analyze and explore a survey of the most important contemporary theories forming the foundational design of student-centered learning environments and the new applications of educational technologies. The major products of this course include three theoretical framework writing samples: a deconstructive analysis, a synthesized construction, and a proposed theoretical framework or model for a selected former

constructivist environment learning solution as a possible leading conference paper submission. Prerequisite: Students must be in doctoral study.

IDET 6380 - Special Topics Course - Design and Development Research

3 sem. hrs. The course is available at http://Bb9.tamucc.edu. This blended course acquaints learners with processes and products of design and development research. Students analyze and explore design-based research and other literature to identify a societal problem to address. They then design a potential educational solution. They describe methods to evaluate the impacts and effects of the potential solution. The product of the course is a research proposal as well as knowledge of research processes to be followed for future studies. Prerequisite: Students must be in doctoral study.

IDET 6390 - Special Topics in Instructional Design and Educatioal Technology

3 sem. hrs. Application of research regarding contemporary theoretical and applied issues in instructional design and educational technology. Topics vary with professional needs and interests and participants. Prerequisite: Students must be in doctoral study.

Engineering Technology

ENTC 5490 - Selected Topics

1-4 sem. hrs. Subject material variable. May be repeated for credit when topics are different. Prerequisites: Vary depending upon topic.

ENTC 5496 - 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: Vary depending upon subject area.

English

ENGL 5301 - Theory and Practice I: Literary Studies

3 sem. hrs. Introduces students to techniques of research and scholarship in literary study through a survey of critical debates in literary theory. Offered in the Fall.

ENGL 5303 - Theory and Practice II: Writing Studies

3 sem. hrs. Introduces students to techniques of research and scholarship in writing studies through a survey of critical debates in writing studies scholarship, with special attention to current research on composing and its pedagogical implications. Offered in Spring semesters only.

ENGL 5340 - British Literature Before 1660

3 sem. hrs. Examination of poetry, drama, or prose written before 1660. Sample topics: The Global Renaissance, Digital Shakespeare, Writing Women in Early English Literature. May be repeated for credit when topics vary.

ENGL 5342 - British Literature 1660 - 1830

3 sem. hrs. Studies of major writers and texts of the British long eighteenth century (1660 - 1832). Primary focus is on the literary texts, and cultural history of the period, with opportunities to bring in current literary theories and criticism. Sample topics: Gender and Sexuality in the Novel, Gothic Fiction, Travel Writing. May be repeated for credit when topics vary.

ENGL 5343 - British Poetry and Fiction 1900-Present

3 sem. hrs. Exploration of one or more writers, genres, literary movements, issues, or ideologies of the 20th century. Includes writers from the British Isles and the Commonwealth. May be repeated for credit when topics vary.

ENGL 5344 - British Literature 1830 - 1900

3 sem. hrs. Studies of British fiction, poetry, and prose written between 1830 and 1900 and the social forces—domestic, economic, political, religious, scientific—that influenced and were influenced by these works. Sample topics: Social change and the Victorian body; Victorian fun; Victorians and Empire. May be repeated for credit when topics vary.

ENGL 5346 - American Literature to 1865

3 sem. hrs. Readings in one or more writers, genres, literary movements, issues, or ideologies of the period. Sample topics: Transoceanic Americas: Literatures amid the Spanish Empire, American Print Cultures, Medicine and Early American literature. May be repeated for credit when topics vary.

ENGL 5347 - American Literature 1865-1940

3 sem. hrs. Studies in one or more writers, genres, literary movements, issues, or ideologies of the period. Sample topics: The Lost Generation, Modernism and the Harlem Renaissance, Falkner and the South. May be repeated for credit when topics vary.

ENGL 5348 - American Literature 1945-Present

3 sem. hrs. Exploration of one or more major writers, genres, literary movements, issues, or ideologies since World War II. Sample topics: Experimental Narrative, US-Latin American Literature and Culture, The Postmodern Novel. May be repeated for credit when topics vary.

ENGL 5349 - Topics and Genres in Literature

3 sem. hrs. Studies in topics and genres that span more than one literary period and/or include works from both British and American literature. Sample topics: Crossing Borders, Crossing Nations, The City in Literature, Queer Theory. May be repeated for credit when topics vary.

ENGL 5360 - Writing Assessment

3 sem. hrs. Study and practice in methods by which written texts are evaluated and the evaluation used for instructional purposes. Methods range from classroom techniques to formal assessment procedures (holistic, primary trait, portfolio, etc.).

ENGL 5361 - Basic Writing Theory and Pedagogy

3 sem. hrs. Studies in the theory and pedagogy of the teaching of developmental writing. Focus centers on the political, sociolinguistic, and educational history and status of basic writers.

ENGL 5362 - Digital Rhetoric

3 sem. hrs. Explores the dynamics of online, networked reading and writing practices by examining the rhetorical, social, cultural, political, educational, and ethical dimensions of digital texts and examines issues of technology and literacy in digital spaces. Students will create digital texts in a variety of media, genres, and contexts.

ENGL 5363 - Rhetoric

3 sem. hrs. Examination of classical and modern traditions in rhetoric and their application to written discourse. Topics focus on contributions of classical and modern rhetoricians, written literacy, and the institutionalization of written instruction.

ENGL 5366 - Visual Rhetoric

3 sem. hrs. Students will develop a broad understanding of the definition of visual rhetoric, learn to analyze texts by identifying the visual elements that comprise texts, understand how to use visual rhetoric, and create their own texts. Admission to MA English Program

ENGL 5367 - Summer Institute Writing Workshop

3 sem. hrs. This course is the Summer Institute of the Coastal Bend Writing Project, affiliated with the National Writing Project. It is a writing workshop designed for teachers of all levels (pre-k through university level) and subject areas, meaning we will study and practice writing in ways that benefit teachers personally and professionally. In this workshop, we will study theory and effective practices in writing pedagogy, and focus on improving participants' writing and research skills. As a site of the National Writing Project, this course is backed by a national network of scholars and data-based practices. None Online Classification: Face-to-Face 1-24%

ENGL 5369 - Topics and Genres in Rhetoric and Composition

3 sem. hrs. Exploration of specific issues and problems in rhetoric and composition studies. Sample topics: ethnographic research, gender and writing. May be repeated for credit when topics vary.

ENGL 5375 - Creative Writing

3 sem. hrs. A studio approach to writing fiction, non-fiction, and poetry, with an emphasis on the elements and critical terminology of each genre.

ENGL 5376 - Professional Writing

3 sem. hrs. Workshop on the genres and practices of professional writing and communication.

ENGL 5377 - Grant Writing

3 sem. hrs. An advanced workshop on the grant proposal writing process, including identifying sources of funding, conducting research to support funding applications, data analysis, tailoring each proposal to a specific funding agency, and the requirements of electronic submission. Students will receive experience writing actual proposals on behalf of local organizations and agencies.

ENGL 5380 - Seminar in Sociolinguistics

3 sem. hrs. Exploration of topics related to language in society, including but not limited to an introduction to sociolinguistics, language variation, disclosure analysis, language planning and policy, multilingualism, and world Englishes. May be repeated when topics vary.

ENGL 5381 - Introduction to Linguistics

3 sem. hrs. Introduces students to the nature and behavior of human language; covers topics in phonetics, morphology, syntax, semantics, sociolinguistics, neurolinguistics, and language acquisition.

ENGL 5385 - Seminar in Applied Linguistics

3 sem. hrs. Exploration of topics broadly covered in the field of Applied Linguistics. Topics may include (but are not limited to) language assessment, grammar, second language writing, language and gender, corpus linguistics, and second language acquisition. May be repeated when topics vary.

ENGL 5392 - Practicum for Composition Instructors

3 sem. hrs. Practical training for English Teaching Assistants. A seminar in contemporary composition and rhetorical theory with practical applications for the First-Year classroom. Prerequisite: formal acceptance as a Teaching Assistant by the College of Liberal Arts. Offered in Summer II

ENGL 5393 - General Studies Literature Instructors Practicum

3 sem. hrs. This practicum will prepare and support graduate students who will work as first-time graduate assistants in the General Studies Literature Program. Grade assigned will be “credit” (CR) or “no credit” (NC). Offered in Fall.

ENGL 5395 - Thesis

3 sem. hrs. The thesis is a scholarly or critical project involving 6 credit hours (taken in two separate semesters) at the final stages of the graduate program. Grade assigned will be "credit" (CR) or "no credit" (NC). Prerequisite: Approval of English Graduate Committee.

ENGL 5396 - Individual Study

1-3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. To receive program credit for the MA in English, students must have completed the English core. Credit for this course is limited to 3 hours in any degree plan. Offered on application to and approval of the program coordinator.

WRIT 5302 - Foundations of Content Design & Management

3 sem. hrs. Survey of principles and practices of content design and management in digital contexts. Students will be introduced to rhetorical content practices and professions, explore the relationship between theory and practice, and be introduced to issues and topics in literature from writing studies and technical and professional communication. Admission into the DCDM program.

WRIT 5304 - Methods of User-Centered Design

3 sem. hrs. Study of theory and methods of user-centered design. Practice in fundamental techniques of usability and participator research. Students will learn how to plan, conduct, and report on usability tests and will be able to describe the value case for user-centered design and development. Admission to DCDM Semester.

WRIT 5334 - Information and Data Literacy

3 sem. hrs. Provides students the opportunity to study and apply how to locate, evaluate, participate in, and circulate information through expanding digital content and platforms. Students learn to evaluate and communicate across multiple audiences and disciplines through multiple digital platforms. Students will interpret data to construct data visualizations, data storytelling, and data mapping. Admission into the DCDM program.

WRIT 5350 - Content Management

3 sem. hrs. Provides students with general knowledge of the lifecycle and governance of digital content management, covering areas from creation to permanent storage or deletion. Students will learn various platforms for Content Management Systems (CMS) used for Enterprise Content Mangement (ECM) and Web Content Management (WCM). Introductions to ECM and WCM provide students with the knowledge to work as Content Managers in both business (ECM) and with websites (WCM). Admission into the MA-DCDM program.

WRIT 5351 - Repurposing Business Documents for Digital Environments

3 sem. hrs. Provides students with the opportunity to create enterprise digital projects geared towards working in a professional or business environment. Course focuses on the

conversion to and creation of digital documents and forms such as invoices, research reports, and contracts that are sensitive to ethical, professional and cultural issues using user-centered design. Admission into the MA-DCDM program.

WRIT 5352 - Working with Subject Matter Experts in Digital Environments

3 sem. hrs. Provides students with opportunities to learn about and learn how to communicate and collaborate with Subject Matter Experts in networked environments, cross-functional teams, and distributed work environments. Focus will be on planning and managing digital projects designed to communicate technical information to diverse audiences. Course focuses on the conversion of technical information and/or specification to digital documents that are sensitive to ethical, professional and cultural issues using user-centered design. Admission to DCDM semester.

WRIT 5353 - Genres: Reports and Proposals

3 sem. hrs. Study of reports and proposals across multiple genres and digital platforms for discipline-specific purposes. Provides application of multiple genre conventions and document designs for specific audiences and purposes. Admission into DCDM program.

WRIT 5354 - Genre: Manuals & Instructional Design

3 sem. hrs. Study of instructional content across multiple genres and digital platforms, focusing on design, usability, collaborative writing, Course Management Systems (CMS), and single sourcing. Admission into the MA-DCDM program.

WRIT 5355 - Content Design and Social Media

3 sem. hrs. Develops a practical understanding of the social web and writing for digital-first platforms. Students compose across diferent social media platforms and explore theoretical concepts to examine ways these tools are evolving. This course may include introductions to new media, new media culture, or new media literacies. Admission to DCDM Program.

WRIT 5356 - Topics in Digital Content and Management

3 sem. hrs. Study of theory and practical issues related to developing content that is adaptable and intelligent, focusing on topics such as Accessibility and Disability, Document Design, Visual Rhetoric, Online Publishing, Editing and Style. Focuses on content as conditional, computable, networked and commodified. May be repeated twice for credit when topic and instructor vary. Admission to the DCDM Program.

WRIT 5357 - Intercultural/Transcultural Rhetorics

3 sem. hrs. Develop a global perspective on rhetoric and prepare students to create digital content for culturally and linguistically diverse audiences for various purposes. Students produce digital writing that is reflexive about culture and cultural identity. Admission to the DCDM Program.

WRIT 5358 - Topics in Discourse, Society, and Technology

3 sem. hrs. Study of the theoretical and practical effects of digital networks and digitally mediated knowledge management on discourse, society, and technology. Students will work on a relevant scholarly / practical problem, such as Working in Medical Cultures or Writing about Science. May be repeated when topic and instructor vary. Admission to DCDM Program

WRIT 5359 - Digital Literacies

3 sem. hrs. Survey of how reading and writing practices change in digital environments, the broad range of issues related to digital rhetorics and culture, and provides analysis and theory of digital composition. This course offers students opportunities to work flexibly across various digital platforms. Admission to DCDM Program.

WRIT 5374 - Transmedia Storytelling

3 sem. hrs. Provides practice in using 21st century storytelling methods in professional contexts with an emphasis on creating content for distribution across multiple platforms and formats. Admission into the DCDM program.

WRIT 5394 - Digital Project in an Authentic Setting

3 sem. hrs. This course serves as the Exit Requirement for the program. Applied experience in which students will develop a digital project in an authentic setting building on previous coursework. To be offered every Summer Session. Students must have completed 6 hours core and 6 additional hours to enroll.

Environmental Science

Graduate Courses

General prerequisite for 5000-level courses: graduate standing. Senior undergraduates in their last semester or summer session of undergraduate work may take 5000-level courses provided that they have a cumulative grade point average of 3.0 or better, and that written

approval is obtained from the Dean of the college in which the work is offered. Weekly lecture and laboratory hours associated with each course are designated by (lecture:lab) following the semester hours. The indicated laboratory hours are laboratory instructional time. In most cases, additional laboratory time will be required to complete assigned work.

ESCI 5350 - Fundamentals of Physical Oceanography

3 sem. hrs. (3:0)

Principles that rule water motions and associated transport and dispersion of natural and man-made substances in the sea including a review of the mean ocean circulation and its spatial and temporal variability, observational methods, ocean circulation theories and air-sea interactions. Prerequisites: Science background or consent of instructor. Offered on sufficient demand.

ESCI 5392 - Thesis I: Thesis Proposal

3 sem. hrs. (3:0) Review of the literature on a thesis topic. Completion of a written research proposal including proposed experimental design. If the thesis proposal is not completed by the end of the semester, a mark of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester. Prerequisites: Open only to degree candidates in environmental science. Requires consent of the graduate advisor. Fall, Spring, Summer.

ESCI 5393 - Thesis II: Thesis Research

3 sem. hrs. (3:0) Collection and organization of research data and presentation of a rough draft of the thesis manuscript to the thesis advisor. May be repeated; no more than three hours may be taken per semester. If the thesis draft is not completed by the end of the semester, a mark of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester. Prerequisites: Open only to degree candidates in environmental science. Requires consent of the graduate advisor and qualitative grade for ESCI 5392 (Thesis I). Fall, Spring, Summer.

ESCI 5394 - Thesis III: Thesis Submission

3 sem. hrs. (3:0) Thesis defense and completion of the thesis manuscript including acceptance of the final copy by the advisory committee. May be repeated; no more than

three hours may be taken per semester. If the thesis is not completed by the end of the semester, a mark of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester. Prerequisites: Open only to degree candidates in environmental science. Requires consent of the graduate advisor and qualitative grade for ESCI 5392 (Thesis I). Fall, Spring, Summer.

ESCI 5397 - Directed Research

3 sem. hrs. (3:0) Emphasis on experimental design as related to environmental science. For students selecting the professional (non-thesis) option. Only three semester hours will count towards the non-thesis degree. Requires presentation of results in a written paper and seminar. If the professional paper is not completed by the end of the semester, a mark of "IP" will be awarded. An "IP" is a permanent, non-punitive grade notation. In order to receive a qualitative grade in the course, the student must enroll in and complete this course in a subsequent semester. Fall, Spring, Summer.

ESCI 5940 - Project Research

1-9 sem. hrs. Research related to the MS project. Requires consent of graduate advisor. Does not count as credit toward the MS degree in Environmental Science. Course is taken as credit/no credit. Fall, Spring, Summer.

ESCI 6101 - Environmental Research Seminar

1 sem. hrs. (1:0) Studies and analysis of pertinent literature. May be repeated for credit, but credit may count only once towards the degree plan. Course is taken as credit/no credit. Fall, Spring (on sufficient demand).

ESCI 6201 - Advanced Scientific Diving Techniques

2 sem. hrs. (2:0) Advanced study of the 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 6203 - Professional Skills for Scientists

2 sem. hrs. (2:0) Presentation and discussion of professional skills of practicing scientists including literature searches, evaluation of information sources, oral and written communication skills, lifelong learning, careers and professional opportunities. Spring.

ESCI 6302 - Federal Environmental Laws and Regulations

3 sem. hrs. (3:0) Advanced study of case histories involving the application of state and federal environmental laws and regulations. Review of permits, waste registrations, manifests, self-reporting and inspection reports. Prerequisite: Science background or permission of instructor. Fall, Spring (on sufficient demand), Summer (on sufficient demand).

ESCI 6310 - Fundamentals of Remote Sensing

3 sem. hrs. Fundamenal theory of satellite/airborne remote sensing techniques, sensor performance and calibration, and the scientific applications for land, ocean and atmosphere observations. Topics include physical principles of remote sensing, radiometry, sensors and sensor technology from infrared to microwave sensing, and scientific applications for land, ocean and atmosphere observations. Cross listed with CMSS 6310. Prerequisite: Instructor permission. Basic skills in trigonometry and algebra as well as basic understanding of physics are required.

ESCI 6314 - Biogeochemical Processes

3 sem. hrs. (3:0) Water and element cycling in the atmosphere, hydrosphere and geosphere. Microbial interactions and physical processes will be emphasized. Prerequisites: CHEM 1311/1312, and GEOL 1403 or ESCI 1401 or ESCI 3351, or permission of instructor. Offered on sufficient demand.

ESCI 6320 - Advanced Environmental Health

3 sem. hrs. (3:0) Advanced study 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 6321 - Advanced Soil and Groundwater Restoration

3 sem. hrs. (3:0) Advanced study of 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 6321. 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 6322 - Industrial Hygiene

3 sem. hrs. (3:0) Health protection practices in the industrial environment. Health basis for OSHA laws, regulations. Sampling and testing procedures. Offered on sufficient demand.

ESCI 6324 - Advanced Industrial Toxicology

3 sem. hrs. (3:0) Advanced review of human physiology, general concepts of toxicology: dose-response relationship, interactions between the host and the agents, risk assessment, to provide a fundamental understanding of toxicology related to the chemicals in the workplace. 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 participat in the lab portion of this course. Offered on sufficient demand.

ESCI 6330 - Oil Spill Management

3 sem. hrs. (2:2) Review 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. Development of a spill management team incorporating the elements of incident command. Field exercises in oil spill response. 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. Fall, Spring, Summer (on sufficient demand).

ESCI 6332 - Advanced 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. Prerequisites: BIOL 3428 Ecology, CHEM 4443 Environmental Chemistry, or ESCI 3443 Environmental Biology. Offered on sufficient demand.

ESCI 6340 - Ocean Resources

3 sem. hrs. (3:0) Investigation of topics related to the discovery, distribution, and exploitation of marine resources of the ocean with a focus on the Gulf of Mexico, including the impact of resource exploitation on biological systems, and the development of marine policy.

ESCI 6345 - Living with Coastal Hazards

3 sem. hrs. (3:0) Study of how coastal processes, such as hurricanes, sea-level rise, and erosion, intersect with human activities to create hazardous conditions and how society responds to these conditions, presented through discussion, case studies, and field trips. Offered on sufficient demand.

ESCI 6359 - Ecosystem Dynamics

3 sem. hrs. (3:0) Investigation of the interactions between organisms and physical processes that regulate marine ecosystem functions. Offered on sufficient demand.

ESCI 6360 - Coastal Management and Ocean Law

3 sem. hrs. (3:0) The legal and policy framework associated with the coastal zone and ocean environment. Public access to coastal lands and waters, public trust, wetlands regulation; international law of the sea, fisheries law, and marine pollution. Fall.

ESCI 6365 - Managing Occupational Safety and Accident Prevention

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

ESCI 6370 - Hazardous Waste Treatment Technologies

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

ESCI 6380 - Environmental Management Systems

3 sem. hrs. (3:0) This course explores the systems management approach used by businesses and governments to promote environmental quality and sustainability. EMS and ISO 14001 standards go beyond minimally acceptable environmental compliance. Offered on sufficient demand.

ESCI 6408 - Environmental Microbiology

4 sem. hrs. (3:3) Relationships between microorganisms and their biotic and abiotic environments. Role of microorganisms in biogeochemical cycling. Methodology in microbial ecology. Biotechnological aspects. Prerequisites: BIOL 2421 or consent of instructor. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered on sufficient demand.

ESCI 6416 - Advanced Geochemistry

3 sem. hrs. Advanced study of the Earth processes using principles of chemical equilibrium, thermodynamics, isotope geochemistry and organic geochemistry. Applications of low-temperature geochemistry to geologic problems. Prerequisites: CHEM 1311/CHEM 1111, CHEM 1312/1112, MATH 2413 and GEOL 3414, or instructor permission.

ESCI 6480 - 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 or ESCI 6203 - Professional Skills for Scientists recommended. 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 6590 - Advanced Topics

1-5 sem. hrs. (1:0-3:4) Advanced study in a specific area of environmental science. May be repeated for credit when topics vary. Offered on sufficient demand. Offered on sufficient demand.

ESCI 6596 - Directed Independent Study

1-5 sem. hrs. Study in areas of current interest. (A total of six hours of Directed Independent Study may be counted toward the MS degree.) Fall, Spring, Summer.

Finance

FINA 5311 - Financial Management Concepts*

3 sem. hrs. An intensive study for students with limited or no academic experience in finance. Helps to provide an understanding of the concepts of present value, funds flow analysis, cost of capital, capital budgeting, and valuation theories used in corporate finance. (This is a core course.) Prerequisites: ACCT 5312, ECON 5311 and ORMS 5310, or equivalents.

FINA 5320 - Managerial Finance*

3 sem. hrs. An expanded study of the theoretical framework of financial analytical principles, including contemporary topics. Combines theory and case analysis to integrate principles with practice, emphasis on the relevant theory, the application of theory to managerial problems, and the presentation of results in written and oral form. Applies concepts of corporate finance, accounting principles and quantitative analysis. Prerequisites: FINA 5311 (or equivalent) and ACCT 5315.

FINA 5325 - Real Estate Finance and Investments*

3 sem. hrs. This course will examine the risks and rewards associated with investing in and financing residential as well as commercial real estate. These concepts include appraising/valuing income properties, valuing debt securities, and managing portfolios of properties and securities. Prerequisite: FINA 5311 or equivalent.

FINA 5330 - Analysis of Derivative Securities*

3 sem. hrs. Analysis of financial derivative contracts; including options, futures and forward contracts; in particular commodity trading and hedging strategies. Swaps will be included in the presentation if time permits. Class is oriented to helping applicants pass the derivatives material on a broker's license exam. Prerequisites: FINA 5311 or equivalent.

FINA 5333 - Personal Financial Planning*

3 sem. hrs. Survey course in financial planning. Covers topics in the financial planning process: cash, debt and savings management, taxes, housing decisions, insurance and risk management, investment alternatives, and retirement and estate planning. Prerequisites: FINA 5311 or equivalent.

FINA 5335 - Multinational Finance*

3 sem. hrs. A study of corporate financial planning and decision making in a multinational environment. Topics covered include measurement and management of exchange rate risk, financing international trade, short-and long-term asset and liability management, direct foreign investment, cost of capital and capital structure, and country risk analysis. Prerequisites: FINA 5311 or equivalent or consent of instructor.

FINA 5340 - Investment and Portfolio Theory*

3 sem. hrs. A study of the financial markets, security, evaluation, efficiency of markets evaluations, investment goals and portfolio selection. Professional investment management techniques are examined in the context of modern portfolio theory. A unified systems approach is adopted for investment selection and control. Prerequisites: FINA 5320.

FINA 5345 - Financial Markets and Institutions*

3 sem. hrs. The role of the financial markets and institutions in the global economy is examined including regulation, money market operations, global impact of central banking monetary policy, and determinants of interest rates and financial asset pricing. Prerequisites: graduate standing.

FINA 5370 - Seminar*

1-3 sem. hrs. Seminar in specific topics within Finance. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

FINA 5396 - Directed Individual Research Or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Fisheries and Mariculture

FAMA 5102 - Graduate Defense Seminar

1 sem. hrs. Formal presentation of the research activities conducted for the MS degree. To be taken the final semester of resident graduate study. Offered any semester upon request by a student and consent of the instructor. Open only to M.S. thesis track students in Fisheries and Mariculture.

FAMA 5312 - Mariculture Techniques

3 sem. hrs. (2:2) 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. 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.

FAMA 5314 - Aquatic Animal Nutrition

3 sem. hrs. (3:0) The study of current concepts in aquatic animal nutrition including nutrient sources and requirements, deficiency effects, ingestive/digestive/metabolic processes, formulation and processing of feeds, and practical feeding considerations for selected aquatic species. Offered fall semester of odd-numbered years.

FAMA 5315 - Diseases and Parasites of Aquatic Organisms

3 sem. hrs. (2:2) Identification, epizootiology and control of viral, bacterial, fungal, parasitic and nutritional diseases of commercially cultured molluscs, crustaceans and fish. 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.

FAMA 5322 - Aquaculture Business Planning

3 sem. hrs. (3:0) The application of economic and business principles to the development of commercial and developmental aquaculture projects in order to maximize efficiency of operation and profitability. Students are introduced to project concept, risk management, business planning, financing, aquaculture marketing and development of financial documents. Offered spring semester of even-numbered years.

FAMA 5324 - Quantitative Fisheries Methods

3:0 sem. hrs. Modern ecological studies require quantitative data collection and analysis for various study objectives, such as abundance estimation, spatial/temporal patterns of dispersion, and species interaction and diversity measures. Data collection with an optimal and efficient sampling design is the first step to the success in those researches. In this course, different types of sampling designs and various quantitative methods will be taught for the students to learn and effectively to apply to their thesis and dissertation research projects in aquatic ecology. Offered on sufficient demand.

FAMA 5327 - Marine Restoration Ecology

3 sem. hrs. (3:0) Overview of the rapidly expanding practice of restoring degraded marine, estuarine, and coastal ecosystems. Teaching methods will include lectures, discussion, paper critiques, field visits, and restoration plans. Course will explore ecological theory as it applies to restoration, restoration planning and implementation strategies, and controversies surrounding the practice of restoration. Offered fall semester of odd-numbered years.

FAMA 5328 - Fisheries Ecology and Management^

3 sem. hrs. (3:0) Advanced study of theory and techniques in fisheries science including behavior of fisheries populations and applications to resource management with emphasis in tidal-influenced waters. Includes readings in the current literature and a research project. Offered fall semester of odd-numbered years.

FAMA 5329 - Fisheries Techniques

3 sem. hrs. 2:3 Designed to provide students with practical experience in the theory and application of traditional and modern fisheries sampling and management techniques with an emphasis on practical sampling design and data interpretation. This is a hands-on field and laboratory based course that will develop skills that are commonly used by fisheries scientists and sought be future employers. 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.

FAMA 5332 - Aquatic System Design

3 sem. hrs. (3:0) The study of aquatic system engineering and design for aquaculture farms, hatcheries, recirculating systems and research facilities. Additional topics covered include aquaculture site selection criteria and use of computer-aided design software. Offered fall semester of even-numbered years.

FAMA 5336 - Dynamics and Quantitative Models of Aquatic Resources

3 sem. hrs. (3:0) This course is designed to introduce the general theories of fish population dynamics and to train the relevant analytical and statistical methods for modeling the behaviors and processes of the natural fish populations under exploitation. Offered on sufficient demand.

FAMA 5338 - Applied Fisheries Statistics

3 sem. hrs. (3:0) Data analysis is a critical component in fisheries research and management. Throughout this course, the students will learn to practice the series of data

analysis and techniques that are relevant to fisheries science, with the aids of the personal computer software. Offered spring semester of odd-numbered years.

FAMA 5355 - Public Aquarium and Animal Care Operations

3 sem. hrs. This course examines the unique requirements needed for aquariums and zoos to balance animal care and health with public display for general education and conservation research. 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.

FAMA 5370 - Mariculture

3 sem. hrs. (3:0) Survey of physiological, behavioral, environmental and economic parameters governing the culture of selected aquatic species. Included are techniques and methods employed worldwide to produce various marine species. Prerequisite: Minimum of 8 sem. hrs. of biology. Offered fall semester of even-numbered years.

FAMA 5392 - Thesis Proposal

3 sem. hrs. Thesis students must submit a completed proposal for their thesis project. A course section will be created for the student to enroll. Upon successful completion and submission of the proposal signed by the graduate committee of the student, students may then register for FAMA 5393 - Thesis Research. Open only to MS Thesis Degree Candidates in Fisheries and Mariculture. Offered any semester upon request by a student and consent of the instructor.

FAMA 5393 - Thesis Research

3 sem. hrs. Implementation of the Thesis Proposal, and the production of a rough draft of the thesis submitted to the graduate committee of the student for initial editing and comment. A course section will be created for the student to enroll. Prerequisite: FAMA 5392 - Thesis Proposal. Offered any semester upon request by a student and consent of the instructor.

FAMA 5394 - Thesis Submission

3 sem. hrs. Completion of the final draft of the thesis, signed by the graduate committee of the student and ready for binding and distribution. A course section will be created for the student to enroll. Prerequisite: FAMA 5392 - Thesis Proposal. Prerequisite or

Corequisite: FAMA 5393 - Thesis Research. Offered any semester upon request by a student and consent of the instructor.

FAMA 5397 - Professional Paper Submission

3 sem. hrs. Completion of the final draft of the professional paper (professional track students), signed by the graduate committee. A course section will be created for the student to enroll. Prerequisite: FAMA 5998 - Internship. Offered any semester upon request by a student and consent of the instructor.

FAMA 5421 - Chemistry of Natural Waters

4 sem. hrs. (3:3) The examination of water as an environmental medium and how it may be monitored and managed for maximizing the growth and survival of various aquatic species. Prerequisite: CHEM 1411 - General Chemistry I, or equivalent. Corequisite: Safety training given in SMTE 0093 - Chemistry Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester of even-numbered years.

FAMA 5436 - Marine Ecological Processes

4 sem. hrs. (3:3) Advanced studies in structure and habitats of marine environments. Emphasis on factors influencing distribution of marine organisms, including field trips to areas along the Texas coast. Prerequisite: BIOL 3428 - Principles of Ecology or equivalent. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

FAMA 5590 - Special Topics

1-5 sem. hrs. In-depth study and discussion of selected topics relevant to mariculture or fisheries. May be repeated when topics vary. 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.

FAMA 5596 - Directed Independent Study

1-5 sem. hrs. Study in areas of mariculture or fisheries interest. Offered any semester upon request by a student and consent of the instructor.

FAMA 5940 - Project Research

1-9 sem. hrs. Research related to the MS project. Students can only apply 6 hours of credit toward the MS degree in Fisheries and Mariculture with approval of the committee. Course is taken credit/non-credit. Open only to degree candidates in FAMA with the consent of the graduate advisor. Offered any semester upon request by a student and consent of the instructor.

FAMA 5998 - Internship

1-9 sem. hrs. Professional Track students are required to undertake an extensive internship program with an approved agency, institution, or commercial operation to develop skills and techniques relating to fisheries science or the culture of aquatic species. Students will participate in internship activities at selected aquaculture or fisheries facilities. Open only to M.S. professional track students in Fisheries and Mariculture. Offered any semester upon request by a student and consent of the instructor.

Geology

GEOL 5101 - Geology Seminar

1 sem. hrs. (1:0) An examination of concepts and theories in geology and their linkages to other disciplines such as environmental science, computer science, geographic information science, and education. Seminar themes may vary from year to year. May be repeated for credit but credit may be applied only once towards degree. Grade assigned will be "credit" (CR) or "no credit" (NC). Offered on sufficient demand.

GEOL 5308 - Coastal Geoenvironments and Change

3 sem. hrs. (3:0) Investigations of the origin, character, and processes of coastal geoenvironments with an emphasis on tracking historical and projecting future changes. Involves examination of the interactions of geological and biological processes and impacts of human activities on coastal depositional systems. Includes applications of remote sensing, ground studies, and GIS for mapping geoenvironments and analyzing change. Readings in current literature, day field trips, and a project. Offered on sufficient demand.

GEOL 5336 - Groundwater Geochemistry

3 sem. hrs. (3:0) Principles of the geochemistry of groundwater including chemical thermodynamics. Characterization of the chemistry of natural and contaminated groundwater. Chemical measurements, analyses, and calculations. Includes readings in current literature and research on a selected topic. Prerequisite: GEOL 4444 or equivalent. Recommended: GEOL 6418. Offered on sufficient demand.

GEOL 5437 - Computer Applications and Modeling in Hydrogeology

4 sem. hrs. (3:2) Principles of analytical and numerical modeling in hydrogeology. Use of available software for aquifer test solutions, aquifer simulation modeling, and mass transport. Completion of modeling projects. Includes readings in current literature. Prerequisite: GEOL 4444 or equivalent. Recommended: GEOL 6418. Offered on sufficient demand.

GEOL 5438 - Mass Transport Modeling in Hydrogeology

1-4 sem. hrs. (3:3) Principles of numerical modeling of mass transport in groundwater systems. Use of software and computer systems for numerical simulations. Laboratory time devoted to completion of modeling projects. Includes readings in current literature. Prerequisite: GEOL 6437. Offered on sufficient demand.

GEOL 5490 - Advanced Topics

1-4 sem. hrs. (1:0-3:2) Subject varies. Advanced topics including current literature research. May be repeated for credit when topics are sufficiently different. Prerequisite: Permission of instructor. Offered on sufficient demand.

GEOL 5596 - Directed independent Study

1-5 sem. hrs. Study in areas of current interest. Fall, Spring, Summer.

GEOL 6321 - Advanced Soil and Groundwater Restoration

3 sem. hrs. (3:0) Advanced study of 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 ESCI 6321. Offered on sufficient demand.

GEOL 6416 - Advanced Geochemistry

4 sem. hrs. (3:2) Advanced study of the Earth processes using principles of chemical equilibrium, thermodynamics, isotope geochemistry and organic geochemistry. Applications of low-temperature geochemistry to geologic problems. Prerequisites: CHEM 1311 and CHEM 1111, CHEM 1312/1112, MATH 2413, GEOL 3414 and/or with instructor's permission.

GEOL 6422 - Advanced Geophysics

4 sem. hrs. Advanced 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 - Structural Geology, 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 6423 - Advanced Seismic Methods

4 sem. hrs. Advanced methods for 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 4322 - Geophysics.

GEOL 6424 - Advanced Environmental and Engineering Geophysics

4 sem. hrs. Advanced 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 6436 - Principles of Petroleum Geology

4 sem. hrs. (3:2) Advanced concepts of petroleum geology and techniques used in the exploration and production of hydrocarbon systems. Lectures 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 or permission of instructor. Recommended: GEOL 4421 and GEOL 4322. Offered on sufficient demand.

GEOL 6444 - Advanced Hydrogeology

4 sem. hrs. (3:2) Advanced study of hydrogeology concepts necessary to understand and question the hydrologic cycle, and specifically, surface water flow; groundwater flow; groundwater-surface water interaction; groundwater sources, occurrence, movement, contamination, and resources; and environmental topics of interest related to water resources.

Geospatial Computer Science

GSCS 6102 - Graduate Seminar

1 sem. hrs. 1 Advanced topic study and presentation by students, faculty, or visiting scientists. Meets one hour weekly. Must be taken three times by all GSCS PhD students.

GSCS 6302 - Graduate Seminar

3 sem. hrs. This is a 3-credit course that is intended to help facilitate the development of a student's dissertation research ideas and to contribute to the student's professional development as a doctoral level researcher in the field of geospatial computer science. The course focuses on developing professional research skills typically not provided in formal coursework such as methods for novel research, literature review, developing a research prospectus, presenting scientific research, research ethics, peer-review process, and professional society engagement. At the outcome, students will have a better understanding of the research process and a foundation to aid their development as a doctoral student and professional scientific researcher.

GSCS 6321 - Geospatial Data Structures

3 sem. hrs. 3:0 The representation of spatial data is an important issue in diverse areas including computer graphics, geographic information systems (GIS), robotics, and many others. Choosing an appropriate representation is a key to facilitate operations such as spatial search. This course will focus on representation of point data and object data, which are the important types of spatial data. Various fundamental data structures on spatial data, such as quadtrees, kd-trees, grid structures, kd-trees, and R-trees will be explored. The use of these structures to address some important problems will also be

covered.

GSCS 6329 - Scientific Visualization

3 sem. hrs. (3:0) This course presents principles and methods for visualizing data resulting from measurements and calculations in both the physical sciences and the life sciences. The emphasis is on using 2D and 3D computer graphics to garner insight into multi-dimensional data sets for understanding and solving scientific problems. Topics include visualization software and techniques, human vision attributes and limitations, data encoding, data representation, volume rendering, flow visualization, and information visualization.
COSC 5327, GSCS 6321

GSCS 6331 - Advanced Geospatial Computing

3 sem. hrs. (3:0) Seminar in reading and critical evaluation of academic literature in the field of and fields relating to geospatial computing. Student will design, implement, and evaluate an advanced, contemporary geospatial computing technology to solve a geospatial problem.

GSCS 6344 - Ubiquitous Positioning

The aim of this course is to introduce the principle of positioning indoors/outdoors using sensors and short-range radio frequency signals in smartphones. These sensors will include a GNSS receiver, an accelerometer, a gyroscope, a magnetometer, a barometer, and a camera, why short-range RF signals will include WiFi and Bluetooth signals. The course will concentrate on various positioning algorithms for fusing sensor measurements and RF signal measurements. GSCS5321 - Advanced Geospatial Computing

GSCS 6390 - Special Topics

3 sem. hrs. (3:0) Variable content study of specific areas of geospatial computing science. May be repeated for credit when topics vary. Offered on sufficient demand.

GSCS 6996 - Research

1-9 sem. hrs. Independent research conducted under supervision of an advisor. Open to Geospatial Computing Science students who have not yet passed the qualifying exam and with consent of their graduate advisor. The course is graded with an S or U, and may be repeated.

GSCS 6998 - Dissertation Research

1-9 sem. hrs. Research related to PhD dissertation. Open only to degree candidates having passed the qualifying exam in Geospatial Computing Science with consent of their graduate advisor. The course is graded with an S or U, and may be repeated. Permission of instructor.

GSCS 6999 - Dissertation Defense

1-9 sem. hrs. Open only to degree candidates in Geospatial Computing Science with consent of their graduate advisor. Students should enroll in this course during their last semester of the GSCS PhD program. To successfully complete this course the student must pass the dissertation defense as well as have a final copy of the dissertation signed by the full graduate committee and approved for binding and distribution. A grade of Credit/No Credit will be assigned for the class with the possibility to assign the grade of IP or In Progress. If a grade of IP is assigned, the course must be repeated the following semester(s) until the course is passed. Permission of instructor.

Geospatial Systems Engineering

GSEN 5393 - Graduate Creative Project

1-3 sem. hrs. (0:1) An applied research group project in geospatial surveying engineering from problem definition to implementation in an area provided by faculty in the course of study. Fall, Spring, and Summer. Prerequisites: GSEN 5395 and formal approval of graduate project proposal. Offered on a satisfactory/unsatisfactory (S/U) basis only, with grade of IP until completed. Credit will not be recorded until project report is accepted by the Graduate Project Committee. May be repeated for credit. Prerequisite: Permission of the Program Coordinator. Offered Fall, Spring, and Summer semesters.

GSEN 5395 - Graduate Research Design

3 sem. hrs. (3:0) Preparatory and developmental research for the Graduate Thesis or creative project resulting in the preliminary design and formal proposal of the graduate project. This thesis or a creative project proposal must be reviewed and approved by the project chairperson to receive credit. A grade of Credit/No Credit will be assigned for the class with the possibility to assign the grade of IP or In Progress. If a grade of IP is assigned, the course must be repeated the following semester(s) until the course is passed. Credit will not be recorded until the Graduate Project Proposal is approved by the Graduate Project Committee Chair. Offered Fall, Spring, and Summer semesters.

GSEN 5698 - Graduate Thesis

1-6 sem. hrs. An applied research project in geospatial systems engineering from problem definition to implementation in an area of particular interest to the student that relates to the course of study. Prerequisites: GSEN 5395 and formal approval of Graduate Thesis proposal. Offered on a satisfactory/unsatisfactory (S/U) basis only, with grade of IP until completed. Credit will not be recorded until thesis is accepted by the Graduate Project Committee. May be repeated for credit. Prerequisite: Permission of the Program Coordinator. (See Graduate Thesis procedure under "Chronological Procedure Leading to the MS degree.") Offered Fall, Spring, and Summer semesters.

GSEN 6330 - Spatial Systems Science

3 sem. hrs. (3:0) Introduction and advanced usages of mapping datums, coordinate systems, and accuracy requirements for geographic information systems (GIS). Use of GIS tools to investigate statistical patterns and relationships among maps and geo-databases. Derivation of new maps and analysis based on spatial context, patterns, surface configuration, proximity, connectivity and flows. Prerequisites: MATH 6316 Statistical Methods in Research II; a working knowledge of ArcView and/or ArcGIS; or permission of instructor.

GSEN 6355 - Geospatial Programming Techniques

3 sem. hrs. (3:0) Course teaches programming techniques in geospatial fields, such as how to automate GIS tasks using Python and other scripting languages. Automation can make your work easier, faster, and more accurate, and knowledge of a scripting language is a highly desired skill in GIS analysts. Fall.

GSEN 6356 - Programming for Geospatial Data Science

3 sem. hrs. Python is becoming more and more popular for doing data science worldwide, especially companies are using python to gather insights from their data and get a competitive edge. This course focuses on Python specifically for geospatial data science. Students will learn about powerful approaches to store and manipulate data as well as cool data science tools to start their own analyses.

GSEN 6365 - Spatial Database Design

3 sem. hrs. (3:0) This course will focus on spatial database principles and the practical skills of design, implementation, and use of spatial databases. This course will first cover fundamentals of relational database design, and then focus on design and management of spatial databases utilizing geodatabase models. In addition, case studies of geodatabase

design models in several applications will also be covered. This course is intended for students who want to design, create, maintain and manipulate data from a geospatial database. Spring.

GSEN 6367 - Geospatial Data Mining

3 sem. hrs. Geospatial data mining is the process of automatically discovering interesting and useful spatial patterns in large geospatial datasets. This course begins by covering fundamental concepts and techniques in data mining. Specific topics covered include classification, association analysis, and cluster analysis. It then focuses on using these data mining techniques for handling spatial, temporal and spatial-temporal data. In addition, the data mining tools to implement applications in geoscience will also be covered. Spring.

GSEN 6370 - UAS for Surveying and Mapping

3 sem. hrs. Introduces the fundamentals of mapping with small Unmanned Aircraft Systems (sUAS) using digital imaging sensors to produce high resolution, accurate geospatial surveying products. The course will cover the full spectrum of UAS mapping including technology, current regulations, operational factors, flight design, photogrammetric data processing, and data fidelity. Supporting concepts will include georeferencing and ground control, 3D reconstruction with structure-from-motion photogrammetry, orthorectification and image mosaicking, accuracy assessment, and current developments in UAS for geomatics. Processing and analysis workflows using commercial and open-source software will be conducted to transform UAS image sequences into geospatial data products, extract analytics, assess results, and optimize output. Spring.

GSEN 6371 - Geopositioning Systems and Autonomous Navigation

3 sem. hrs. Addresses the foundations and computational techniques of Global Navigation Satellite Systems (GNSS) and inertial measurement units (IMUs) for autonomous navigation applications. Specifically, the course will cover concepts and principles of GNSS signal structures and the derivation of observables; error sources and corrections; point, differential, and kinetic positioning techniques; IMU linear and angular dynamics modeling; mechanization of inertial navigation and error propagation; global/local coordinate frames and conversion; and filtering techniques for GNSS/IMU integration. The course also covers current and future capabilities of emerging geopositioning systems as they relate to autonomous navigation and mobile devices. Fall.

GSEN 6380 - Applied Geospatial Statistics

3 sem. hrs. This course will focus on geospatial statistics methods particularly multivariate statistics and applications of the statistical procedures to research geospatial problems. Research on geospatial problems often requires the application of multivariate statistical methods to produce new insight. Various existing statistic software is available to conduct multivariate statistical analysis, however, the interpretation of the results rely on solid understanding of statistic principles and theories. This course is intended for students who want to apply statistical methods to research geospatial problems.

GSEN 6381 - Cadastral Information Systems Design

3 sem. hrs. (3:0) A review of the evolution of European cadastral systems and land records traditions and alternatives. Examination of the goals and purposes of land tenure systems with attention to social, political, legal, economic, organizational, and technical issues. Exploration of U.S. modernization efforts and the problems of developing countries. Spring odd years.

GSEN 6382 - Policy and Legal Aspects of Spatial information Systems

3 sem. hrs. (3:0) A study of the current and emerging status of computer law in electronic environments. Covers issues related to: privacy, freedom of information, confidentiality, copyright, and legal liability; the impact of statue and case law on use of digital databases and spatial databases; and research of legal options of conflicts related to spatial data. Fall.

GSEN 6383 - Advanced Geospatial Analytics

3 sem. hrs. (3:0)

This course will focus on the theory, techniques, and applications of advanced geospatial analytics. Topics covered include spatial point patterns, network analysis, area objects and spatial autocorrelation, and spatial interpolation. New approaches to geospatial analytics will also be covered. This course emphasizes the methods and the applied side of geospatial analytics that can be useful in students' own theses or projects for their current or potential employers. Fall.

GSEN 6384 - Geospatial Visualization Design

3 sem. hrs. (3:0) This course will ensure that students understand and apply cartographic theory for visual communication and visual thinking, and be able to create, evaluate, and critique reference and thematic maps using GIS software. Fall.

GSEN 6385 - Photogrammetric Engineering and Lidar Scanning

3 sem. hrs. (3:0) A study of the analytical and systems engineering foundations of airborne photogrammetry and geodetic imaging technologies for 2D and 3D mapping of natural and built environments. The course covers principles of digital imaging, camera calibration, stereo and multi-view photogrammetry, analytical photogrammetry, structure-from-motion, light detection and ranging (lidar) systems, and emergent scanning and imaging approaches. The course also details photogrammetric and lidar data processing, point cloud analysis, and applications.

GSEN 6386 - Remote Sensing and Image Analysis

3 sem. hrs. (3:0) Addresses the interpretation, processing and analysis techniques of remotely sensed data acquired by orbital and sub-orbital platforms. Physical principles and imaging mechanisms, remote sensing systems, data characteristics, image processing, and information extraction methods will be covered. Topics include passive optical imaging with multispectral, hyperspectral, and thermal sensing; active imaging with radar sensing; image corrections and rectification; spatial/frequency transforms and image filtering; image classification and feature extraction; and image processing with machine learning techniques. Applications in the course will be focused on geomatics and monitoring of natural and built environments. Fall.

GSEN 6390 - Advanced Topics

3 sem. hrs. (3:0) Variable content study of specific areas of geospatial surveying engineering. May be repeated for credit when topics vary. Offered on sufficient demand.

GSEN 6396 - Directed Independent Study

3 sem. hrs. (3:0) Study in areas of current interest. Prerequisite: Permission of the Program Coordinator. (A maximum of six hours may be counted toward the MS degree.)

Health Care Administration

HCAD 5312 - The Health Care System*

3 sem. hrs. (3:0) Focus on the major components of the American health care system and related issues in the administration of care delivery. Policy information and political issues are discussed.

HCAD 5320 - Health Economics and Policy*

3 sem. hrs. (3:0) Analysis and evaluation of classical and modern economic theory, principles and procedures applicable to the health care delivery system and their implications for public policy. This course is delivered through online technology.

HCAD 5325 - Health Care Financial Management*

3 sem. hrs. (2:1) Overview of concepts, principles and uses of basic accounting and budgeting information for the health care manager. Focuses on providing the nurse administrator with a basis for understanding the fiscal status of a health care organization; Includes 45 hours of laboratory time to strengthen financial skills including ROI, budget development, FTEs and financial statement analysis. This course is cross-listed with NURS 5360. This course is delivered through online technology.

HCAD 5330 - Health Law and Ethics*

3 sem. hrs. (3:0) A study of the legal and related ethical aspects of the health care delivery system including governing boards, liabilities, consent and malpractice as well as other related topics. Current governmental, state and other regulating bodies are presented. This course is delivered through online technology.

HCAD 5390 - Health Care Selected Topics*

3 sem. hrs. (3:0) In-depth study and discussion of various topics relevant to health care administration. May be repeated when topics vary.

HCAD 5396 - Directed Independent Study

3 sem. hrs. (3:0) See College Description. Prerequisite: Permission of the instructor.

History

HIST 5310 - Historiography

3 sem. hrs. A study of the literature of history with attention to the differing methodological approaches and their evolution over time. Required of all graduate students in history.

HIST 5320 - Research Methods

3 sem. hrs. Students will develop and practice research skills using primary sources and write an original research paper. Topics will vary according to the course instructor. Required of all graduate students in history.

HIST 5323 - Seminar: the Gilded Age

3 sem. hrs. Thematic seminar examining the late-nineteenth century America. Topics include the New South, the closing of the frontier, corporate enterprise and its effects on work and society, the party system, populism, the city, and overseas expansion.

HIST 5324 - Seminar: U.S. Modern Popular Culture

3 sem. hrs. Explores leading examples of U.S. modern popular culture from the late nineteenth century to the present, with attention to interpretations and theories that help explain cultural change. Topics include consumerism, motion pictures and television, sports, music, and popular literature.

HIST 5328 - Seminar: Mexican American History

3 sem. hrs. A study of the events, personalities, organizations, and individuals that have been critical in the development of the modern Mexican American community. Emphasizes politics and organization building.

HIST 5329 - Seminar: United States Women's History

3 sem. hrs. A seminar that will include readings on women’s historiography, and also will address several key topics in American women’s history, including: plantation, slave, and immigrant women, activism, sexuality, work, religion, politics, societal prescriptions of femininity, and mass cultural influences.

HIST 5330 - Seminar: Gender, Race, and Nation

3 sem. hrs. This graduate seminar will explore the frameworks of gender, race, and nation as theoretical underpinnings of American history. This means we will consider how historians use these lenses to ask questions about American experience. The course is designed as a discussion-based, readings course, so that we may read in-depth and then, as a group, analyze the many different histories that constitute modern American experience. The readings are broad and comparative, so that we may examine how race, gender, and nation shift within and among different groups, states and nations. The readings also allow us to explore major themes such as economics, immigration, borders, imperialism, sexuality, identity and law. Prerequisite: It is recommended that the student speak with their graduate advisor to confirm that this course fulfills degree requirements. This course is intended for graduate students in any TAMUCC masters or doctoral program; however, priority is given to History M.A. students. Knowledge of U.S. history is helpful, but there are no formal prerequisites. Please note that this is a discussion-based course. Attendance and professional collegiality are mandatory. It is also expected that

the student work hard, read thoroughly, complete weekly assignments in a timely manner, and discuss their interpretations of the readings at each class session.

HIST 5331 - Seminar: U.S. From 1945 to Present

3 sem. hrs. A study of U.S. social, political, cultural, and economic history in the decades following World War II. Topics include the Cold War, foreign relations, the Civil Rights movement, Vietnam, and the Sixties.

HIST 5333 - Seminar: Early American History

3 sem. hrs. Examines early American history from European contact through the American Revolution. Topics and themes include slavery, class, gender, environmental history, religion, the movement of peoples, the encounter between Indians and Europeans, and the formation of democratic institutions.

HIST 5336 - Seminar: United States Urban History

3 sem. hrs. A study of the geographic, economic, social, and political development of American cities, the structuring of the country's urban networks, and the evolution of American urban life.

HIST 5337 - Seminar: Religion and Society in Early America

3 sem. hrs. Examines the religious history of early America from European contact through the antebellum period, with a focus on the vibrant religious cultures early Americans created and the ways they used religion to understand themselves and order their world.

HIST 5338 - Seminar: History of American Education

3 sem. hrs. A thematic seminar that examines the history of American public education since the 19th century. Topics include the role of the state in educating citizens, common schools, the feminization of teaching, vocational education, immigrant education, bilingual education, school desegregation, and urban school movements.

HIST 5351 - Seminar: Colonial Mexico

3 sem. hrs. An examination of economic, social and political developments in colonial New Spain, as well as an attempt to place New Spain in a larger regional context.

HIST 5355 - Youth and Protest in the Americas

3 sem. hrs. An examination of recent approaches to the study of youth in Latin America and North America. Explores youth activism as a window into understanding how age functions as a category of analysis. Topics include university reform movements, consumer culture, and labor struggles.

HIST 5360 - Public History: Corpus Christi and South Texas

3 sem. hrs. A discussion of the role and use of history outside traditional academic settings. Introduction to the work of historical associations, historic preservation, historic editing, museums and archives, and oral history, with discussion of techniques for incorporating such resources into teaching.

HIST 5370 - Oral History: Techniques and Practice

3 sem. hrs. An introduction to the methodology and practice of planning, conducting, editing, and transcribing interviews with eyewitnesses to or participants in historic events, highlighting Corpus Christi and the South Texas region.

HIST 5372 - Seminar: Pacific Rim

3 sem. hrs. Examines critical intersections among the histories of Asia, the Pacific, and the Americas since the turn of the nineteenth century, with a focus on interdisciplinary theoretical and methodological approaches to human migration, critical race and ethnic studies, war and colonialism, gender ideology, and borderland studies in transnational and diasporic contexts.

HIST 5373 - Seminar: Modern East Asia

3 sem. hrs. Designed to help students develop bibliographical and historiographical command of modern East Asian history, the course examines the recent scholarly literature on the paradigm of modernization, colonialism, revolution, gender, class, and historical memory in the region's three principal states-China, Korea, and Japan.

HIST 5380 - Seminar in History

3 sem. hrs. An intensive study of selected issues, periods, regions, or themes in history based on independent reading, research, and writing by the student. May be repeated when topics vary. This course is delivered either in classroom or through online technology. When delivered through online technology, students must have access to a computer and Internet to complete course work.

HIST 5390 - Internship in History

3 sem. hrs. A hands-on experience in historical work. Arranged in consultation with the student's advisor. May be repeated when topics vary. Grade assigned will be "credit" (CR) or "no credit" (NC). Face-to-Face 1-24%.

HIST 5395 - Thesis

3 sem. hrs. May be repeated once for credit. Prerequisite: approval of student's graduate committee. Grade assigned will be "credit" (CR) or "no credit" (NC).

HIST 5396 - Individual Study

1-3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Topic must not duplicate regular graduate courses and must be in the field of expertise of the instructor. Maximum 6 hours in any degree plan. Offered on application to and approval of the program coordinator.

Interdisciplinary Study

EDUC 5393 - Internship I and Seminar for the intern Teacher*

3 sem. hrs. This course is a supervised classroom teaching field experience and seminar designed to assist the non-certified teacher with the application of various aspects of planning for teaching. Enrollment is limited to graduate students seeking initial teacher certification. Interns must be enrolled in EDUC 5352 - Planning, Teaching, Learning Processes* (or have completed EDUC 5352 - Planning, Teaching, Learning Processes*) and completed 30 contact hours of field observation.

EDUC 5394 - Internship II and Seminar for the intern Teacher

3 sem. hrs. This course is a supervised classroom teaching field experience and seminar designed to assist the non-certified teacher with the application of classroom management techniques, and enhance existing teaching skills. Enrollment is limited to graduate students seeking initial teacher certification. Prerequisite: EDUC 5393 and EDUC 5352 . Interns must be enrolled in EDUC 5357 or have completed EDUC 5357.

EDUC 5397 - Practicum I for the Beginning Teacher

3 sem. hrs. Practicum This is a supervised classroom teaching field experience designed to enhance the individual teacher's existing teaching skills for the beginning teachers during their third year on a "Probationary Certificate." Enrollment is limited to certified teachers on a TEA "Probationary Certificate," but currently in teaching positions. This course is taken concurrently with EDUC 5327 first semester of the third year on a

"Probationary Certificate." This course may not be taken for graduate credit if the student has taken EDUC 5393, EDUC 5394 or EDUC 5395. Prerequisites: EDUC 5327 - Strategies of Success I for the Beginning Teacher, EDUC 5393 - Internship I and Seminar for the intern Teacher*, EDUC 5394 - Internship II and Seminar for the intern Teacher, and EDUC 5395 - Strategies of Success II for the Beginning Teacher.

EDUC 5398 - Practicum II and Seminar for the Beginning Teacher

3 sem. hrs. Practicum Beginning teachers who are currently in their third year of a "Probationary Certificate" are provided with additional skills to enrich their classroom teaching proficiency through seminars and supervised supervision for effective classroom teaching. Enrollment is limited to certified teachers on a TEA "Probationary Certificate," but currently in teaching positions. This course is taken during the second (and final) semester of the third year on a "Probationary Certificate." Prerequisite: EDUC 5327 EDUC 5393, EDUC 5394, EDUC 5395, and EDUC 5397.

EDUC 5696 - Directed Individual Study

1-6 sem. hrs. lecture Contemporary issues in educational technology; topics vary with professional interests and needs of participants. This "hybrid" course focuses upon enabling students to design effective instructional activities and materials for on-line instruction within a learning management system (LMS) environment. Students will acquire research-based knowledge about the design and development of effective on-line instruction which is consistent with established best practices. Emphasis will be placed upon development of on-line instruction in curricular areas specified by the instructor or selected by the student, subject to instructor approval. NOTES: This course is appropriate for students who have previously completed IDET 5360, Introduction to Designing On-line Courses, or for those who are taking IDET 536 concurrently with the present course. There are no prerequisites for this course. This course-IDET 5390, Professional Seminar is included as a core course in the official degree plan for the Master of Science Degree in Instructional Design and Educational Technology. It is not an elective and is occasionally offered based upon student interest and emergent trends in the field of study.

Kinesiology

KINE 5301 - History and Philosophy of Kinesiology

3 sem. hrs. A study of the general historical and philosophical perspectives and influences as they relate to kinesiology. This course will also explore the historical influence of gender and multicultural (diversity) issues that impacted philosophical perspectives in the field of kinesiology and the study of movement over time.

KINE 5306 - Sport Nutrition*

3 sem. hrs. This course is designed to provide scientific evidence for the use of nutrient ingestion to enhance sport performance and maintain optimal health. Special emphasis will be placed on the chemical and biological changes caused by the ingestion of specific nutrients. In this course the student will learn to utilize current nutrition research to enhance the athlete's energy systems within various categories of sport.

KINE 5307 - Research Design in Kinesiology*

3 sem. hrs. The application of fundamental research methods to the design and development of a research proposal in kinesiology.

KINE 5308 - Leadership in Kinesiology*

3 sem. hrs. This course assists students in identifying and defining leadership in formal and non-formal kinesiology settings. The theoretical foundations interweaves: (a) formation of self-identification and self-awareness as a leader, (b) development of applied knowledge and skills, and (c) real-world application of effectively functioning as both a follower and a leader, thus developing a more complete and holistic leadership framework.

KINE 5310 - Sport in Society

3 sem. hrs. A perspective of the nature and value of the study of the sociological aspects of sport. This course is designed to enhance the knowledge and methodology of research in sport sociology. Also explores emerging social issues that are germane to a sports environment and discusses solutions to those problems.

KINE 5311 - Statistics in Kinesiology*

3 sem. hrs. A study of basic statistical concepts and their application to research problems in kinesiology. Topics include issues related to descriptive and inferential statistics. Recommended pre-requisite: KINE 4311 Measurement and Evaluation or comparable course.

KINE 5312 - Sport Physiology*

3 sem. hrs. This course expands basic undergraduate exercise physiology principles and focuses on the role of exercise physiology in sports performance, applied and research settings. Recommended pre-requisite: KINE 4312 Physiology of Exercise or comparable course.

KINE 5313 - Athletic Testing*

3 sem. hrs. An advanced assessment course designed to provide techniques for physiological, athletic, and sport-specific tests associated with athletic performance. Test selection, test administration, data analysis, and appropriate evaluation techniques will be presented.

KINE 5314 - Principles of Strength and Conditioning*

3 sem. hrs. The purpose of this course is to provide theoretical and practical knowledge of the physiological, biomechanical, and administrative aspects of designing and supervising strength and conditioning programs for various populations.

KINE 5315 - Concepts in Sport Business

3 sem. hrs. Lecture
An applied course designed to provide macro business theories and techniques specifically for the sport professional. Sport business models, financial systems, managerial procedures, and promotion concepts are addressed.

KINE 5316 - Finance Management in Sport

3 sem. hrs. lecture An in-depth analysis of the various tools, techniques, ratios, formulas, and other finance related information students will need to understand and master in order to handle complex financial concerns in the workplace. The sport industry is a multi-billion dollar industry that generates revenue from areas ranging from youth sport to facility construction and much more. This course will examine how money helps drive sport and facility businesses and why those who can understand and apply fininacial management techniques will be more capable employees.

KINE 5317 - Global Perspectives in Sport

3 sem. hrs. lecture This course is an interdisciplinary examination of sport as a global phenomenon. Historical, cultural, economic and governance perspectives are considered.

KINE 5318 - Sport Media and Broadcast Relations

3 sem. hrs. lecture This course introduces students to the field of sport communication. They will learn about career options in this field. The course covers management, mass media, support services, entertainment and ancillary opportunities. In addition, this course introduces students to the process and practices of business communication through a conceptual and practical internal and public relations approach. Students are

required to complete a number of writing and oral communication assignments including: 1) planned writing assignments to enhance students' writing skills, 2) improved writing skills as a course objective, 3) structured written instructions and evaluation criteria for assignments, 4) detailed instructions in conceiving, organizing, and presenting written material in ways appropriate to sport management organizations, 5) revised and peer reviewed assignments, and 6) graded written assignments as a major part of the grade.

KINE 5325 - Program Design for Resistance Training*

3 sem. hrs. lecture This course presents information on the process of designing scientifically based resistance training programs, modifying and adapting programs to meet the needs of special populations, and understanding how designing programs works in the real world.

KINE 5327 - Sport Biomechanics*

3 sem. hrs. This course provides an exploration of movement kinetics and kinematics through the framework of sports, physical activity, and associated injury mechanisms. Further emphases will be on identifying viable research questions and appropriate methods (including instrumentation) to pursue those questions. Recommended pre-requisite: KINE 4327 Biomechanics or a comparable course.

KINE 5330 - Sport Promotion, Sponsorship and Licensing

3 sem. hrs. lecture 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.

KINE 5338 - Motor Development in Sport*

3 sem. hrs. This course address the theory and application of human motor development as it relates to the acquisition of motor skills, with a focus on sport performance. The coures emphasizes how professionals in the field of sport science should utilize this understanding to serve various client populations throughout the lifespan.

KINE 5340 - Sport Psychology*

3 sem. hrs. A study of the theory and application of psychology as it applies to human behavior in sport and physical activity.

KINE 5390 - Professional Seminar

1-3 sem. hrs. Contemporary issues in Kinesiology: topics vary with professional identification of participants.

KINE 5394 - Professional Field Experience*

3 sem. hrs. A graduate-level field-based experience to provide the student the opportunity to apply knowledge and theory related to exercise and sport science. This course is an elective course and listed in the Supplemental Course section of the degree plan. This course may also be taken at any time during the student's degree with approval of their faculty mentor.

KINE 5397 - Graduate Research Project in Kinesiology*

3 sem. hrs. The research project is an alternative to the thesis and three semester hours of credit. The project should be completed in one semester of work with the possibility of more time depending upon the student's topic and design. This is an involved process and the final product includes: 1) Journal Abstract; 2) Journal Manuscript (choice of journal is decided by project chair); 3) Poster Presentation; and 4) Power Point Presentation (Defense). Unlike the thesis, all students that are fully accepted to the program automatically are eligible for the research project. Prerequisites: KINE 5307 and KINE 5311.

KINE 5696 - Directed individual Study

1-6 sem. hrs. Thesis in progress requires departmental approval. Investigative study on selected problems by students with particular needs. May be repeated when topics vary. Programs will be designed for individual cases through special permission of the Department Chair and Dean.

KINE 5698 - Thesis in Progress

3-6 sem. hrs. Students are required to successfully complete a thesis under the direction and supervision of their thesis chair and committee members. The thesis will require a minimum of two semesters of work and possibly more depending upon their topic and design, thus students will be allowed to register for three hours each semester. The thesis option is designed for students that want to gain extensive experience in research and/or greater knowledge about a specific topic area. It is also designed for those that anticipate more advanced research (e.g., Ph.D.). Upon completion of their work there is a thesis defense. The final product includes: 1) Journal Abstract; 2) Journal Manuscript (choice

of journal is decided by thesis chair); 3) Poster Presentation; and 4) Power Point Presentation (Defense). Prerequisites: KINE 5307 and KINE 5311.

Management

BUSI 0010 - Orientation to Online Learning*

0 sem. hrs. This non-credit, no-cost, self-paced web-based course introduces new online MBA and new online Master of Accountancy students to successful online learning practices and the Blackboard Learn environment. Prerequisites: None. No grade.

MGMT 5310 - Organizational Behavior and Communication

3 sem. hrs. Introduction to essential management and communication functions within the business firm and its environment. Topics include basic principles of organization behavior and management, the process of research, communication and management decision making, and issues in the global business environment. (This is a core course.)

MGMT 5320 - Organizational Behavior and Theory*

3 sem. hrs. The study of individual, group, and intergroup behavior within organizations. Issues discussed include personality differences, power, politics, interpersonal relations, conflict management, work environment, satisfaction, performance, and team building. Prerequisites: MGMT 5310 or equivalent.

MGMT 5330 - Leadership

3 sem. hrs. This course provides an in-depth review of traditional as well as current theories in Leadership. Students will complete self-assessment exercises designed to assess their leadership style and ability as a leader. This course will drill future leaders in a variety of lessons in leadership from which they can develop and grow, as well as lessons of bad leadership illustrating what to avoid.

MGMT 5335 - Multinational Management*

3 sem. hrs. A study of the values, relationships, social structures and cultural differences that affect the application of management processes in different international environments. Attempts are made to distinguish problems that stem from organizational goals and those due to cultural factors. Prerequisites: MGMT 5310 or equivalent.

MGMT 5345 - Business, Government, and Society

3 sem. hrs. An analysis of business, government, and society interaction and how these relationships affect outcomes and stakeholders in varying contexts. Contemporary business issues are examined in terms of how major social changes impact organizations. Corporate social responsibility and ethical conduct in business are given particular attention. Graduate level.

MGMT 5350 - Entrepreneurship*

3 sem. hrs. An analysis of the organization and operation systems appropriate to owner-operated business firms. Business functions are examined with particular attention given to establishing and operating the firm.

MGMT 5355 - Administrative Strategy and Policy*

3 sem. hrs. An analysis of strategic decision making, policy, and strategy. Focus is on the integrative and multi-functional nature of organizational strategy decision. Intensive analysis of the influence of administrative decisions on organizational outcomes. Must be taken at the end of the program after completion of all advanced, non-elective courses. In unusual circumstances, it may be taken concurrently with the final non-elective courses with the written permission of the Director of Master's Programs.

MGMT 5360 - Human Resource Management

3 sem. hrs. An analysis and critique of concepts, theories and practices in human resource management, including employment planning, selection and placement, training and development, compensation systems, and performance appraisals.

MGMT 5370 - Seminar*

1-3 sem. hrs. Seminar in an identified topic in management. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

MGMT 5396 - Directed individual Research Or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Management Information Systems

MISY 5325 - Software Based Business Solutions*

3 sem. hrs. Study of computer-based technologies for facilitating the analysis and evaluation of business problems. Provides the student with a case-driven analysis of evaluating and selecting the appropriate software tool to match the required management application. Software coverage may include a variety of available packages, such as word processing, spreadsheets, databases, ftp, e-mail, and electronic presentation. Prerequisites: MISY 2305 or equivalent.

MISY 5330 - Website Development for E-Commerce*

3 sem. hrs. 3:0 This course provides an understanding of the principles and techniques for client-side development using HTML, XHTML and CSS. Text editors and the software tools such as Dreamweaver will be used. This course includes designing for web standard, accessibility, usability, and workflow for web design. Prerequisite: Graduate standing.

MISY 5335 - Business Data Base Management*

3 sem. hrs. Concepts and methodology of data base planning, design, development, and management of the computerized data base for business-oriented applications. The logical models of hierarchical and network data bases are presented, but the emphasis is on the relational data base model. Exercises and assignments will be completed utilizing a relational DBMS package. Prerequisite: MISY 2305 or equivalent.

MISY 5340 - Electronic Commerce

3 sem. hrs. A study of the concepts of doing business via the Internet. General topics include electronic commerce history, opportunities, limitations, and risks. Technical discussions include the Internet, intranets, extranets, electronic payment systems, firewalls, security, protocols, servers, browsers, and ethics. Prerequisite: MISY 2305 or equivalent.

MISY 5345 - Business Data Communication Systems

3 sem. hrs. Characteristics of contemporary business data communication components, their configurations, and their impact on business-oriented applications. Includes the design, implementation and operation of peer-to-peer, and client-server network systems for organizational Intranets and Internet presence. Exercises and assignments will be completed using selected data communications facilities. Prerequesite: Graduate standing.

MISY 5350 - Managing the Information Systems Function*

3 sem. hrs. This course provides an understanding of the role of information systems in businesses today. The focus of the course will be on management issues related to information systems. Major topics that will be covered include e-commerce, data management, networks, and management information systems.

MISY 5355 - 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. Prerequisite: Graduate standing.

MISY 5356 - Systems Analysis and Design

3 sem. hrs. 3:0 This course develops the student's ability to analyze and manage an existing information system within an organization, to identify information requirements, and to specify the functions of a new information system. Include cost/benefit analysis of proposed information systems. Exercises and assignments will develop the student's systems analysis and design skills. Prerequisite: Graduate standing.

MISY 5360 - Business Application Development*

3 sem. hrs. 3:0 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. Prerequesite: Graduate standing.

MISY 5365 - Enterprise Resource Planning*

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: Graduate standing.

MISY 5366 - Data Warehousing and Data Mining for Business Intelligence*

3:0 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 professions who, by using analytical methods and data mining and data visualizations 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 5325, MISY 5335 and ORMS 5310.

MISY 5367 - Managing IT Projects*

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 Systems Analysis and Design, and Database Management courses. Prerequisite: MISY 5335 Business Database Management

MISY 5370 - Seminar

1-3 sem. hrs. Seminar in an identified topic in management information systems. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

MISY 5396 - Directed individual Research Or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Marine Biology

MARB 5392 - Thesis Proposal

3 sem. hrs. Thesis students must submit a completed proposal for their thesis project. A course section will be created for the student to enroll. Upon successful completion and submission of the proposal signed by the graduate committee of the student, students may then register for MARB 5393 - Thesis Research. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Open only to M.S. Thesis Degree Candidates in Marine Biology. Offered any semester upon request by a student and consent of the instructor.

MARB 5393 - Thesis Research

3 sem. hrs. Implementation of the Thesis Proposal, and the production of a rough draft of the thesis submitted to the graduate committee of the student for initial editing and comment. A course section will be created for the student to enroll. If course is not

completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Prerequisite: MARB 5392 - Thesis Proposal. Offered any semester upon request by a student and consent of the instructor.

MARB 5394 - Thesis Submission

3 sem. hrs. Completion of the final draft of the thesis, signed by the graduate committee of the student and ready for binding and distribution. A course section will be created for the student to enroll. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Prerequisite: MARB 5392 - Thesis Proposal. Prerequisite or Corequisite: MARB 5393 - Thesis Research. Offered any semester upon request by a student and consent of the instructor.

MARB 5397 - Directed Research

3 sem. hrs. Emphasis on experimental design as related to selected biological topics. Application of research skills. For M.S. students selecting the non-thesis option. Students may register for up to 9 semester hours, but only 3 semester hours will count towards a non-thesis degree. Directed Research is only open to M.S. students. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Offered any semester upon request by a student and consent of the instructor.

MARB 5940 - Master's Project Research

1-9 sem. hrs. Research related to the M.S. project. Open only to M.S. students in marine biology with consent of the graduate advisor. Does not count as credit toward regular graded (non-research, non-variable credit) coursework for M.S. degree requirement in marine biology. Grade assigned will be "satisfactory" (S) or "unsatisfactory" (U). Offered any semester upon request by a student and consent of the instructor.

MARB 6301 - Coral Reef Conservation Issues

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 effectiveness and design of marine protected areas. Permission of Instructor

MARB 6310 - Physiological Adaptations in Animals

3 sem. hrs. (3:0) A study of the physiological adaptations of animals to their environment, including osmoregulatory and temperature regulatory mechanisms. Prerequisite: BIOL 3430 - Physiology or equivalent. Offered fall semester of odd-numbered years.

MARB 6312 - Communicating Science Seminar

3 sem. hrs. Covers communication topics ranging from proposal writing to professional presentations with a minor emphasis on additional non-traditional communication formats. Must be taken to fulfill degree plan requirements by all Marine Biology graduate students and is recommended in the first spring of the degree.

MARB 6314 - Aquatic Animal Nutrition

3 sem. hrs. (3:0) The study of current concepts in aquatic animal nutrition including nutrient sources and requirements, deficiency effects, ingestive/digestive/metabolic processes, formulation and processing of feeds, and practical feeding considerations for selected aquatic species. Offered fall semester of odd-numbered years.

MARB 6327 - Marine Restoration Ecology

3 sem. hrs. (3:0) Overview of the rapidly expanding practice of restoring degraded marine, estuarine, and coastal ecosystems. Teaching methods will include lectures, discussion, paper critiques, field visits, and restoration plans. Course will explore ecological theory as it applies to restoration, restoration planning and implementation strategies, and controversies surrounding the practice of restoration. Offered fall semester every year.

MARB 6332 - Aquatic Living Resource Management

3 sem. hrs. (3:0) This course will provide introduction to the concepts, considerations, and strategies involved in natural fisheries resource management. Students will learn about the challenges, processes, and choices in fisheries management system. Ecosystem and legal considerations of the fisheries management will be discussed. Course activities include lectures, in-class discussions, and critical literature reviews. Students will obtain fundamental knowledge and understanding of fisheries system and its management to

effectively communicate with scientists, managers, and the general public. Offered on sufficient demand.

MARB 6333 - Marine Benthic Ecology

3 sem. hrs. (3:0) The ecology of benthic assemblages with emphasis on species and habitats below diver depths. Micro to mesoscale spatial patterns, including bathymetric distribution, abundance and size-structure, diversity gradients, energetics and feeding strategies, and zoogeography of the benthos will be covered. Hydrothermal vents, cold seeps and sea mount fauna will receive special attention. Offered spring semester of even-numbered years.

MARB 6335 - Aquatic Microbiology

3 sem. hrs. (3:0) Types and distribution of microorganisms in aquatic environments. Interactions with other organisms. Role in nutrient cycling, degradation of organic substances, pollution, water purification. Prerequisite: An undergraduate course in microbiology. Offered spring semester of odd-numbered years.

MARB 6336 - Dynamics and Quantitative Models of Aquatic Resources

3 sem. hrs. (3:0) This course is designed to introduce the general theories of fish population dynamics and to train the relevant analytical and statistical methods for modeling the behaviors and processes of the natural fish populations under exploitation. Offered on sufficient demand.

MARB 6340 - Marine Organisms and Processes

3 sem. hrs.
This course will introduce students to the biology of major plant and animal groups in the ocean. Students will also learn about important physical and chemical features of the oceans, and how these interact with marine life to regulate marine ecosystem function.

MARB 6341 - Evolution and Genomics of Marine Organisms

3 sem. hrs.
This course will introduce students to the evolutionary history of life in the ocean. Students will also learn about modern evolutionary theory, processes of speciation and processes which create diversity and adaptive capacity within species. Finally, the course will touch on functional genetics and the use of modern molecular techniques to understand organismal evolution and function.

MARB 6342 - Genomics, Proteomics and Bioinformatics

3 sem. hrs.

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.
Offered in Fall semester of odd-years only. Cross listed with BIOL 5340. Prerequisite: Permission of Instructor.

MARB 6343 - Oceans and Human Health

3 sem. hrs.

Oceans are increasingly recognized for their role in the health of the human population, both as a source of waterborne disease and a source of new bioactive (medicinal) agents. Indeed, 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. This multidisciplinary subject will be addressed using a combination of lecture and discussion of primary literature.
Offered in Fall semester of even-years only.

MARB 6353 - Down the River: Ecology 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 each year during Maymester.

MARB 6362 - Global Change and Its Impact on Aquatic Ecosystems

3 sem. hrs. This course will introduce students to the effects of climatic and anthropogenic change on aquatic ecosystem structure and function. Includes readings

from the current literature and development of a research proposal. Cross-listed with CMSS 6362.

MARB 6363 - Geomicrobiology

3 sem. hrs. An exploration of the interface between geological and biological processes focused on the mutual effects of microorganisms and Earth's chemistry. Topics include biomineralization, origin and evolution of life, microbial weathering and rock formation, and influences on environmental problems. Students should have had courses in microbiology, general chemistry, and geology or environmental sciences. Offered in the spring semester of even-numbered years.

MARB 6371 - Evolutionary Genetics

3 sem. hrs. (3:0) An advanced introduction to evolutionary processes and their genetic basis, focusing on theoretical and experimental approaches to the study of population genetics, phylogeography, coalescence theory, evolutionary ecology, and molecular evolution. Prerequisites: BIOL 2416 - Genetics, or equivalent, and a college-level mathematics course, or permission of instructor. Offered fall semester of even-numbered years.

MARB 6373 - Marine Biodiversity and Conservation Science

3 sem. hrs. (3:0) Biodiversity, including genetic diversity of individual populations to ecosystem diversity, will be addressed, with focus on the marine realm. Methods for assessing and quantifying diversity will be included. Threats to biodiversity, including resource extraction, invasive species, habitat alteration, global warming and ocean acidification, will be covered, as will techniques for recovering and restoring damaged ecosystems. Marine ecosystem management will be discussed, including marine protected areas, and state, federal and international fisheries and resource management issues. Advanced courses in Ecology or Marine Biology would benefit students. Offered on sufficient demand.

MARB 6392 - Dissertation Proposal

3 sem. hrs. Ph.D. students must submit a completed proposal for their dissertation project. A course section will be created for the student to enroll. Upon successful completion and submission of the proposal signed by the graduate committee of the student, students may then register for MARB 6393 - Dissertation Research. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this

course in a subsequent semester. Offered any semester upon request by a student and consent of the instructor.

MARB 6393 - Dissertation Research

3 sem. hrs. Implementation of the Dissertation Proposal, and the production of a rough draft of the dissertation submitted to the graduate committee of the student for initial editing and comment. A course section will be created for the student to enroll. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Prerequisite: MARB 6392 - Dissertation Proposal. Offered any semester upon request by a student and consent of the instructor.

MARB 6394 - Dissertation Submission

3 sem. hrs. Completion of the final draft of the dissertation, signed by the graduate committee of the student and ready for binding and distribution. A course section will be created for the student to enroll. If course is not completed by end of the semester, a grade of "IP" will be awarded. An "IP" is a permanent, non-punitive, grade notation. In order to receive a qualitative grade the student must enroll in this course in a subsequent semester. Prerequisite: MARB 6392 - Dissertation Proposal. Prerequisite or Corequisite: MARB 6393 - Dissertation Research. Offered any semester upon request by a student and consent of the instructor.

MARB 6405 - Limnology

4 sem. hrs. (3:3) Ecological relationships and productivity of freshwater communities, including rivers, lakes and wetlands. Focus is on interactions of the physical, chemical and biotic environment and influence of human activities on systems. Prerequisite: BIOL 3428 - Principles of Ecology, or equivalent. 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.

MARB 6408 - Microbial Ecology

4 sem. hrs. (3:3) Relationships between microorganisms and their biotic and abiotic environments. Role of microorganisms in biogeochemical cycling. Methodology in microbial ecology. Biotechnological aspects. Prerequisite: 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.

MARB 6427 - Coastal Ecology

4 sem. hrs. (3:3) Study of coastal environments and issues. Includes required field trips to Texas coastal areas. Prerequisites: BIOL 3428 - Principles of Ecology or BIOL 4436 - Marine Ecology or equivalent 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 odd-numbered years.

MARB 6430 - Marine Plankton

4 sem. hrs. (3:3) Investigation of the systematics, distribution and ecology of marine plankton. Cross listed with BIOL 5430. 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.

MARB 6431 - Phycology

4 sem. hrs. (3:3) Study of the major groups of freshwater and marine algae; morphology, ecology, systematics, life cycles and physiology. Laboratories emphasize collection, identification and culturing techniques. Corequisite: Safety training given in SMTE 0092 - Biomedical Laboratory Safety Seminar is required for continued participation in this course. Offered fall semester of even-numbered years.

MARB 6436 - Marine Ecology

4 sem. hrs. (3:3) Advanced studies in structure and habitats of marine environments. Emphasis on factors influencing distribution of marine organisms, including field trips to areas along the Texas coast. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

MARB 6444 - Estuarine Organisms

4 sem. hrs. (3:3) Life history and ecology of estuarine organisms. Special emphasis on the identification of local forms. Required field trip and independent lab work. Prerequisites: BIOL 3413 - Invertebrate Zoology (or equivalent) and BIOL 3428 - Principles of Ecology (or equivalent), or permission of instructor. Corequisite: Safety training given in SMTE 0091 - Biological Laboratory Safety Seminar is required for continued participation in this course. Offered spring semester every year.

MARB 6446 - Tropical Ecology and Conservation

4 sem. hrs. (3:3) Ecological processes and conservation issues in the tropics. Laboratory focuses on field techniques used to study tropical forest ecology. Prerequisite: BIOL 3428 - Principles of Ecology, or equivalent, 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.

MARB 6452 - 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. 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. Taught in the spring semester of even-numbered years.

MARB 6590 - Special Topics

1-5 sem. hrs. (1:0-3:4) An advanced study of a biological topic. May be repeated with full credit in another area of marine biology. 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.

MARB 6596 - Directed Independent Study

1-5 sem. hrs. Study in areas of current interest. A total of six semester hours of Directed Independent Study may be counted towards the M.S. or Ph.D. degree. Offered any semester upon request by a student and consent of the instructor.

MARB 6940 - Dissertation Project Research

1-9 sem. hrs. Research related to the dissertation project. Open only to Ph.D. students in Marine Biology with consent of the graduate advisor. Does not count as credit toward regular graded (non-research, non-variable credit) coursework for Ph.D. degree requirement in Marine Biology. Offered any semester upon request by a student and consent of the instructor.

Marketing

MKTG 5311 - Marketing Concepts

3 sem. hrs. An examination of basic marketing activities involved in the flow of goods, services, and ideas from producer to consumer or industrial user. A managerial emphasis designed for students with limited or no academic experience in marketing. (This is a core course.)

MKTG 5320 - Marketing Management*

3 sem. hrs. An advanced study of contemporary marketing management concepts, tools of analysis, and implementation of marketing programs. Prerequisite: MKTG 5311 or equivalent.

MKTG 5330 - Social Media Marketing*

3 sem. hrs. This course introduces students to the cutting edge social media tools necessary to perform effectively as marketing professionals. Topic coverage includes the understanding of social media unique structure, emerging segmentation and positioning practices, as well as evaluation and implementation of a social media marketing strategy.

MKTG 5335 - Marketing in the International Environment

3 sem. hrs. A study of the environment within which a firm operating outside the U.S. considers the political, social, and economic variables that impact marketing decisions. Prerequisites: MKTG 5311 or permission of instructor.

MKTG 5360 - Research in Marketing

3 sem. hrs. An overview of the area of marketing research. A managerial orientation is used stressing such topics as the informational needs of marketing managers, the application of research in marketing management, decision models and concepts, and research concepts and data analysis methodology. Prerequisites: MKTG 5320.

MKTG 5370 - Seminar

1-3 sem. hrs. Seminar in an identified topic in marketing. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

MKTG 5396 - Directed individual Research or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Mathematics

MATH 5310 - Topics in Mathematics

3 sem. hrs. (3:0) May not be used for graduate credit towards the MS in mathematics. Course included to provide a suitable vehicle for anticipated future service courses. Prerequisite: Dependent on topics course offered. Grade assigned will be "credit" (CR) or "no credit" (NC).

MATH 5318 - Introduction to Bayesian Statistics

3 sem. hrs. 3:0 An introduction to Bayesian Statistics for scientists. Topics include: the Bayesian paradigm, with advantages and disadvantages; brief coverage of probability and calculus; basics of Markov Chain Monte Carlo methods, including the Gibbs sampler and the Metropolis-Hastings algorithm; validating, comparing, and interpreting Bayesian models; and examples from literature relevant to student interests. The course assumes no prior exposure to calculus or programming. FALL

MATH 5321 - Problem Solving and Mathematical Reasoning for Teachers

3 sem. hrs. (3:0) An investigation of problems that span a variety of domains with a focus on making and evaluating mathematical arguments, using tools such as manipulatives and technology, identifying and analyzing the connections within and outside of mathematics, and using symbols and representations to communicate mathematical ideas.

MATH 5322 - Mathematics Assessment

3 sem. hrs. (3:0) A historical overview of assessment of mathematics, statistical description of norm- and criterion-reference tests, scaling of standardized exams, varieties of assessment and rubrics, the mathematical analysis of error patterns, and equity.

MATH 5323 - Mathematics instruction and Mentoring

3 sem. hrs. (3:0) A study of how the use of appropriate mathematical content can create and support a mathematics classroom environment in which students are engaged in mathematical problem solving and how to use these understandings to be effective in supporting teacher development.

MATH 5324 - Principles of Reforming Mathematics Instruction

3 sem. hrs. (3:0) This course introduces participants to the theory and practice of teacher-led inquiry within mathematics education. The course prepares teachers to engage in a school-based mathematics education action research project. It is intended for in-service mathematics teachers.

MATH 5325 - Structure of Number Concepts

3 sem. hrs. (3:0) An in-depth investigation of real and complex number systems, base ten and other number bases, operations and algorithms, divisibility, Euclidean algorithm, congruence, modular arithmetic, and the Fundamental Theorem of Arithmetic, with an emphasis on quantitative and qualitative reasoning.

MATH 5326 - Structure of Patterns and Algebra

3 sem. hrs. (3:0) Algebraic reasoning incorporating the use of technology. This course includes investigations of patterns, relations, functions, and analysis, with a focus on representations and the relationships among them.

MATH 5327 - Structure of Geometry and Measurement

3 sem. hrs. (3:0) An investigation of concepts and principles in geometry and measurement with emphases on deductive reasoning and on inductive reasoning with the use of dynamic geometry software.

MATH 5328 - Structure of Probability and Statistics

3 sem. hrs. (3:0) An investigation of the principles and applications of probability and descriptive and inferential statistics.

MATH 5329 - Structure of Modeling with Rates of Change

3 sem. hrs. (3:0) A study of rates of change through modeling. Direct applications of rates of change to number concepts, algebra, geometry, probability, and statistics.

MATH 5331 - Evolution of Mathematical Systems

3 sem. hrs. (3:0) Covers the evolution of mathematical concepts and thought from ancient to modern times, including women and men who played key roles, from original and secondary sources. Provides a better understanding of the historical development of larger context for topics studied in other courses, and deepens understanding and appreciation of these topics. This course is intended to benefit current and future mathematics teachers. Prerequisite: MATH 5321 or consent of the instructor. Fall.

MATH 5332 - Integrating Technology in Mathematics Education*^

3 sem. hrs. (3:0) An introduction to technology appropriate for the mathematics classroom, including calculators, CAS systems, handhelds, computer software and multimedia. This course is intended for in-service mathematics teachers at the middle/high school level. Prerequisite: MATH 5321 or consent of the instructor. Fall.

MATH 5333 - Numerical Linear Algebra

3 sem. hrs. (3:0) Direct methods for linear systems. Least square solutions. Symmetric and nonsymmetric eigenvalue problems. Iterative methods. Algorithms. Prerequisite: MATH 3311. Fall odd years.

MATH 5336 - Advanced Differential Equations

3 sem. hrs. (3:0) A continuation of MATH 3315, Differential Equations. Relying heavily on linear algebra concepts, this course covers linear systems of differential equations; introductory operator theory; existence, uniqueness and continuity of solutions; stability of equilibria; planar nonlinear systems; and the Poincaré-Bendixson Theorem. Several applications are covered to illustrate the mathematical concepts. Prerequisites: MATH 3311 and MATH 3315. Spring odd years.

MATH 5337 - Theory and Applications of Partial Differential Equations

3 sem. hrs. (3:0) The purpose of this course is to study the mathematical theory and real-world applications of the three major categories of partial differential equations: elliptic equations, parabolic equations, and hyperbolic equations. Specific topics to be covered include: first-order equations, second-order elliptic equations, second-order parabolic equations, and second-order hyperbolic equations. Prerequisites: MATH 3311, MATH 3315, MATH 4301, MATH 4315, or by permission of instructor. As needed.

MATH 5339 - Numerical Analysis

3 sem. hrs. (3:0) Error estimation. Solution of non-linear equations. Interpolation. Numerical differentiation and integration. Finite differences and finite elements. Numerical methods for ODE's and PDE's. Prerequisites: MATH 3311, MATH 3315, MATH 3470, MATH 4315; also COSC 1435 or COSC 5311 or equivalent. Fall even years.

MATH 5341 - Statistical Methods and Data Analysis

3 sem. hrs. Introduction to the basic concepts of probability, common distributions, statistical methods, data analysis and a wide variety of statistical inference techniques. Demonstrations of the interplay between probability models and statistical inference. Data sets will be analyzed using the R software package. Prerequisites: MATH 3342 or MATH 3345 or the equivalent.

MATH 5342 - Linear Statistical Models

3 sem. hrs. (3:0) Review of basic concepts in probability theory. Principles of estimation and model building. Linear models, especially ANOVA and regression. Non-parametric alternatives. Prerequisites: MATH 3311, MATH 3342, and MATH 3470. As needed.

MATH 5343 - Mathematical Theory of Statistics

3 sem. hrs. (3:0)

This course is intended for graduate students that need a solid background on statistical theory. This is a one-semester course in probability and mathematical statistics. Topics include: basic probability, random variables, transformations and expectations, distributions and important families thereof, multiple random variables, random samples, notions of convergence, and an overview of point estimates and hypothesis tests. Prerequisites: MATH 3311, MATH 3342 and MATH 3470 or the equivalent, or instructor's permission. As needed.

MATH 5345 - Computational Methods for Statistics

3 sem. hrs. An introduction to computing tools needed by the modern statistician. Topics include: floating point numbers, reformatting large datasets, important statistical algorithms, and parallel processing. Prerequisites: MATH 3342 or MATH 3345 or the equivalent. Students without prior coursework or experience in computer programming may be at a disadvantage in this course.

MATH 5348 - Optimization

3 sem. hrs. (3:0) Unconstrained optimization, necessary and sufficient conditions for solutions, basic algorithms. Constrained optimization, KKT conditions, linear programming, convex programming, algorithms. Prerequisites: MATH 4301. As needed.

MATH 5351 - Real Analysis

3 sem. hrs. (3:0) This course includes such topics as sequences and series of constants and functions, the Riemann integral, Fourier Series, and an introduction to Lebesgue measure and integration. Prerequisites: MATH 4301. Spring even years.

MATH 5360 - Combinatorics and Graph Theory

3 sem. hrs. (3:0) Topics to include basic counting rules, connectivity, graph coloring and applications, chromatic polynomials, trees and their applications to searching and sorting, generating functions, recurrence relations, the Pigeonhole Principle, Eulerian and Hamiltonian chains and paths, and applications. Prerequisites: MATH 2305 and MATH 3313 or the equivalent. As needed.

MATH 5370 - Modeling of Natural Systems

3 sem. hrs. (3:0) This course is designed to expose science and technology majors to models of real problems arising in the environment and ecology. Students will learn how to create solvable models of the real world situations and how to find answers on the posted questions by using tools of mathematics and computing. There will be modeling and simulations of tides in the Gulf of Mexico, multi-species models of the food chains, circulation of carbon, water, and oxygen. Students will learn some new tools based on calculus and elementary statistics such as numerical algorithms, Monte-Carlo methods, Markov Processes, multivariate analysis, evaluation of stability, methods of extrapolation (predictions) and interpolations. Prerequisite: MATH 1442 or MATH 2342, and MATH 2413 or MATH 5329, or equivalent.

MATH 5375 - Applied Analysis

3 sem. hrs. (3:0) Topics to include basic theory of Euclidean, Banach and Hilbert spaces, calculus of variations and optimal control, elements of system analysis, and elements of complex analysis. All theoretical topics will be illustrated by real application. Prerequisite: MATH 4301 or MATH 5351. As needed.

MATH 5378 - Mathematical Modeling

3 sem. hrs. (3:0) Modeling of applied problems using analytical, stochastic, and dynamical methods. Prerequisite: Completion of 24 semester hours towards the Applied and Computational option of the M.S. in Mathematics.

MATH 5390 - Special Topics

3 sem. hrs. (3:0) An advanced study of a mathematical topic. May be repeated with full credit in another area of mathematics. Topics vary by semester and offering. Prerequisite: Varies. Offered on demand.

MATH 5396 - Directed independent Study

3 sem. hrs. (3:0) Study in areas of current interest. See College description for further details. Prerequisite: Permission of the instructor. May not be substituted for regularly scheduled offerings.

MATH 5993 - Literature Review and Research

1-9 sem. hrs. Res Reading, analyzing, and synthesizing appropriate mathematics and/or mathematics education research literature under supervision. May be repeated for credit. S/U/IP

MATH 5994 - Proposal Research

1-9 sem. hrs. (Res) This course develops an ability to independently investigate a technical topic of interest, and the skills necessary to successfully communicate on that topic. The student learns how to find, organize, assimilate, and report on technical information derived from published sources. Specific areas of study include literature searches, technical word processing, technical writing style, and oral presentation techniques. A final paper and a formal presentation are submitted in lieu of a final exam in the final semester. A-F/IP

MATH 5995 - Thesis

1-9 sem. hrs. (MST) Students work with an advisor to complete and present their proposed thesis. Students may register for 3 to 9 semester hours per semester. Only 3 hours total will count toward the MS degree in mathematics. Prerequisite: MATH 5994 and a Thesis Proposal signed by the student's committee. Fall, Spring, Summer.

MATH 5997 - Project

1-9 sem. hrs. (MST) Students work with an advisor to complete and present their proposed research project. Students may register for 3 to 9 semester hours of directed research per semester. Only 3 hours total will count toward the MS degree in mathematics. Prerequisite: MATH 5994 and a Project Proposal signed by the student's committee. Fall, Spring, Summer.

MATH 6315 - Statistical Methods in Research I*^

3 sem. hrs. (2:2) This course is for graduate students in other disciplines and is designed to prepare them to use statistical methods in their research. This is a non-calculus exposition of the concepts, methods and usage of statistical data collection and analysis. Topics include descriptive statistics, the t-test, the one and two-way analysis of variance, multiple comparison tests, and multiple regression. Students also learn how to conduct these analyses using computer software and how to properly report their findings. Fall.

MATH 6316 - Statistical Methods Research II*^

3 sem. hrs. (2:2) This course is a continuation of MATH 6315 . Topics include: statistical experimental design, randomized blocks and factorial analysis, multiple regression, chi-squared tests, analysis of covariance, non-parametric methods and sample surveys. Emphasis will be placed on the computer analysis of research data and how to properly report statistical findings. Prerequisite: MATH 6315 . Spring.

MATH 6317 - Mixed Effects Models for Scientists*^

3 sem. hrs. (3:0) This course will deal with extensions to the regression and ANOVA that are frequently useful in dealing with ecological data. Topics include: using bootstrapping for significance testing; generalized additive models; using generalized least squares to deal with non-homogeneous data; working with fixed and random factors; handling temporally correlated and spatially correlated data; and the generalized linear model (Poisson, logistic, and negative binomial regression). Prerequisite: MATH 6315 or MATH 6316; in particular, a good basic understanding of linear regression and at least exposure to multiple regression.

MATH 6318 - An Introduction to Bayesian Statistics*^

3 sem. hrs. (3:0) An introduction to Bayesian Statistics for scientists. Topics include: Bayesian paradigm, with advantages and disadvantages; brief coverage of probability and calculus; basics of Markov Chain Monte Carlo methods, including the Gibbs sampler and the Metropolis-Hastings algorithm; validating, comparing, and interpreting Bayesian models; and examples from literature relevant to students interests. The course assumes no prior exposure to calculus or programming.

MATH 6344 - Spatial Statistics

3 sem. hrs. (3:0) An introduction to methods of spatial statistics commonly used in scientific settings. Topics include the nature of geospatial sampling, analysis and modeling of spatial point patterns, and development and analysis of common continuous spatial models such as kriging. Additional topics to be covered, as time and student

interest permit, include Bayesian modeling, hierarchical environmental modeling, and spatiotemporal modeling. Use of appropriate software is emphasized. Prerequisite: MATH 3342 or MATH 5315. As needed.

Music

These courses are designed to support graduate programs in other disciplines.

MUSI PRE - Secondary Studio

1 sem. hrs. This level of study is appropriate for music students who wish to add to their stock of secondary performance capabilities. It provides for one half-hour private instruction each week and requires a minimum of six practice hours each week from the student.

MUSI PRE - Principal Studio

2 sem. hrs. This level of study is appropriate for students who wish to extend their level of proficiency in their major performance area, It provides for one hour of private instruction each week and requires a minimum of ten practice hours each week from the student.

Nursing

The number of weekly lecture and laboratory hours associated with each course are designated by (lecture:lab) following the course semester hours. One lab hour = 3 contact hours. Additional laboratory work may be required to complete assignments. All courses involving labs will require appropriate fees. Didactic courses are delivered through online technology. Students must have access to a computer to complete course work.

NURS 5163 - Project Management for Nurse Leaders (1)*

1 sem. hrs. An overview of project management techniques and tools as they apply to health care operations, projects and programs. The basics of a sound action plan will be introduced and will include identifying tasks, relevant relationships, and resources. This course will be taken in conjunction with NURS 5469 Patterns of Care Delivery Course. Prerequisite: NURS: 5310, 5314, 5315, 5316, 5261, 5362, 5364, 5320, 5360, 5331, 5365 and HCAD: 5330

NURS 5261 - Human Capital Management (2)*

2 sem. hrs. Students will explore internal and external issues influencing organizational decisions and policies affecting human capital. Critical human capital functions will be addressed to provide a solid understanding of the many issues confronting the nurse leader. Prerequisite: MSN Core Courses

NURS 5310 - Science in Nursing*

3 sem. hrs. (3:0) Exploration of the historical development and rationale of nursing theory. Examination of selected theories and conceptual frameworks, and their relationship to nursing practice and research. Emphasis is on the utilization of theories and models in nursing as a basis for a practice that provides a caring, comprehensive, and holistic approach to health care within a transcultural society. This course is delivered through online technology.

NURS 5314 - Research Methods in Advanced Nursing Practice*

3 sem. hrs. (3:0) Critical examination of research methods in order to advance and integrate evidence into nursing practice and improve patient population outcomes. Particular attention is given to research appraisal and application, and the ethical aspects of research translation. This course is delivered through online technology. Prerequisite: Statistics and introductory research course.

NURS 5315 - Health Policy and Cultural Diversity*

3 sem. hrs. (3:0) Health policy and cultural diversity are studied to provide foundations for meeting the needs of communities and societies. Current and proposed policies that influence contemporary health delivery are analyzed. This course is delivered through online technology.

NURS 5316 - Introduction to Advanced Practice Role Development*

3 sem. hrs. (3:0) The course focuses on the development of knowledge and skills necessary for advanced practice. This includes, but is not limited to, negotiation, collaboration, crisis intervention, peer review, leadership, ethics, accountability and basic finances in advanced practice. Parameters of practice within various health care systems are integrated. This course is delivered through online technology.

NURS 5322 - Advanced Pharmacological Concepts*

3 sem. hrs. (3:0) Study of pharmacotherapeutics across the life span with emphasis on clinical decision-making. Laws governing Advanced Practice Registered Nurses' prescriptive privileges are included when appropriate. Discussion is based on current

literature, research findings and case studies. This course is delivered through online technology. Prerequisite or co-requisite: NURS 5326.

NURS 5323 - Finance for the Nurse Practitioner*

3 sem. hrs. (3:0) Study of fiscal aspects of private practice, when to seek the services of a lawyer, analysis of and monitoring the cost-effectiveness of clinical decisions, the design of payment systems, fiscal management, and developing collaborative and interdependent relationships. This course is delivered through online technology. Prerequisite: NURS 5310 and NURS 5314 or with permission of the Department Chair.

NURS 5324 - Health Assessment for Advanced Practice*

3 sem. hrs. 2:1 Study and practice of complex skills for comprehensive health assessment and focus on the differentiation and interpretation of normal and abnormal findings. Selected laboratory techniques are included. Oral and written communication of findings in a collaborative relationship with other health care providers is emphasized. Variables related to rural and multicultural populations are incorporated into the total assessment. Opportunities are provided to develop skills necessary for the identification of health problems, while considering variables associated with multicultural populations across the lifespan. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Prerequisite: NURS5310 and NURS5314 or with permission of the Department Chair.

NURS 5326 - Advanced Physiology with Pathophysiological Applications*

3 sem. hrs. (3:0) Study of normal physiologic and pathologic mechanisms of disease across the lifespan that serve as the foundation for clinical assessment, decision making and client health management in advanced practice nursing. This course is developed through online technology. Prerequisite: NURS 5310 and NURS 5314 or with permission of the Department Chair.

NURS 5331 - Nursing informatics*

3 sem. hrs. (3:0) An introduction to the application of computers in nursing. Focuses on concepts and terminology related to computer technology, information management and their use in nursing leadership, nursing education, nursing practice, and nursing research. Designed for graduate students. This course is delivered through online technology. Prerequisite: Computer Literacy.

NURS 5341 - Wellness and Health Promotion*

3 sem. hrs. (3:0) A study of the complex integration of knowledge, research, and theory essential to developing clinical competence in the teaching-coaching function of the Advanced Practice Nurses. Selected models of health promotion, risk factors and early disease detection are explored. The course emphasizes the importance of situational, cultural, developmental, and individual perspectives in implementing disease prevention/health promotion activities. This course is delivered through online technology. Prerequisite: NURS 5310 and NURS 5314 or with permission of the Department Chair.

NURS 5351 - Advanced Pharmacological Concepts for Nursing Educators*

3 sem. hrs. 3:0 Study of advanced pharmacotherapeutics across the life span for the nurse educator. Discussions are based upon current literature, research findings, and case studies. This course is delivered through online technology.

NURS 5352 - Nursing Curriculum Planning, Development, and Evaluation*

3 sem. hrs. (3:0) This course explores theories and models that are applicable to nursing curriculum development. Guidelines for curriculum development, implementation and evaluation are examined. The significance of program outcomes are assessed for application to manage and refine nursing curriculum.This course is delivered through online technology. Prerequisite: NURS5310 and NURS5314 or with permission of the Department Chair. This course is designed for graduate nursing students.

NURS 5353 - Theory and Concepts for the Nurse Educator*

3 sem. hrs. (3:0) Focuses on the scientific and theoretical foundations of nursing education; stimulates reflections on the character and aims of the nurse educator; examines the distinctive characteristics and roles of the educator in the diffusion and extension of knowledge through teaching and the advancement of knowledge through research and scholarship. Theories related to teaching and learning are explored. The concepts of role, change, curriculum, instruction and evaluation are introduced. This course is delivered through online technology. Prerequisite: NURS5310 and NURS5314 or with permission of the Department Chair.

NURS 5354 - Assessment, Measurement, and Evaluation in Nursing*

3 sem. hrs. (3:0) Provides students with an overview of assessment, measurement, and evaluation strategies in the classroom and clinical areas. Students develop evaluation skills emphasizing unit, course and program outcomes. The process of evaluation within

the teaching role is framed as a continuous quality improvement educational practice. Prerequisite: NURS 5310 and NURS 5314 or with permission of the Department Chair.

NURS 5355 - Instructional Teaching Strategies*

3 sem. hrs. (3:0) Focuses on teaching and learning for nurse educators in the classroom, clinical, and laboratory settings. Emphasis is placed on instructional theory, best teaching practices, and research-based instructional strategies that support a diverse, student-centered learning environment. Instructional strategies will be applied in relation to the fit with teaching content and course design/delivery. Instructional strategies will be assessed for their effectiveness to evaluate student learning and program outcomes. This course is delivered through technology. Prerequisite: NURS5310 and NURS5314 or with permission of the Department Chair.

NURS 5360 - Health Care Financial Management*

3 sem. hrs. (2:1) Overview of concepts, principles and uses of basic accounting and budgeting information for the health care manager. Focuses on providing the nurse administrator with a basis for understanding the fiscal status of a health care organization; Includes 45 hours of laboratory time to strengthen financial skills including ROI, budget development, FTEs and financial statement analysis. This course is cross-listed with HCAD 5325. This course is delivered through online technology. Prerequisite: NURS 5310 and NURS 5314 or with permission of the Department Chair.

NURS 5362 - Leadership Theories in Nursing Practice*

3 sem. hrs. (2:3) Examines the relationship of leadership and management theory and processes to nursing practice in both urban and rural health care settings. The independent and interdependent functions of the nurse leader at various levels of decision making are identified and analyzed. Concepts basic to organizational functioning and role relationships within a transcultural framework are considered. A clinical laboratory experience provides students opportunities to analyze the effectiveness of leadership behaviors. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Prerequisites: NURS5310 and NURS5314 or with permission of the Department Chair.

NURS 5364 - Organizational Design and Behavior in Nursing Practice Environments*

3 sem. hrs. (3:0) Focuses on the application and utilization of the theories, concepts and principles of organizational design and behavior in nursing leadership. Includes major theoretical viewpoints from organizational dynamics and processes, and their

employment in nursing leadership environments. This course is delivered through online technology. Prerequisites: NURS 5310 and NURS5314 or with permission of the Department Chair.

NURS 5365 - Quality and Outcomes Management*

3 sem. hrs. (3:0) Examines conceptual models of quality and their application to the management and evaluation of quality of care across health care settings. The role of outcomes measurement as a major indicator of quality of care is emphasized. This course is delivered through online technology. Prerequisites: NURS5310 and NURS5314 or with permission of the Department Chair

NURS 5390 - Topics in Advanced Nursing Practice

1-3 sem. hrs. In-depth study of various leadership and clinical nursing practice areas. May be repeated when topics vary. Offered on sufficient demand.

NURS 5391 - Seminar in Nursing

1-3 sem. hrs. In-depth study and discussion of various topics relevant to nursing. May be repeated when topics vary. Offered on sufficient demand.

NURS 5396 - Directed independent Study

1-3 sem. hrs. Area of study interest. Requires the permission of the Dean before registration.

NURS 5398 - Graduate Research or Project

1-3 sem. hrs. Proposal development, project implementation or independent research under the direction of major professor. Students who have completed all requirements toward the Master of Science in Nursing degree except the thesis must enroll in this course each semester of the regular academic year under the direction of major professor. May be repeated a maximum of four times.

NURS 5399 - Thesis

3 sem. hrs. Independent research under the direction of a faculty member. Credit will not be recorded until thesis is accepted by the thesis committee.

NURS 5459 - Education Practicum for the Nurse Educator*

4 sem. hrs. (1:9) Apply the roles of the nurse educator by using the nurse educator competencies as a framework for the practicum experience. Students will select an area of teaching either as an academic educator or as a clinical educator and work with a preceptor. This course requires the synthesis of theoretical knowledge from foundational courses to the design, implementation, and evaluation of a capstone project. Students will evaluate the responsibilities of the educator role in relation to meeting the goals of the practicum institution. This course requires 135 hours in a practicum setting. Students must achieve a B or above to earn credit for this course. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Capstone Course Prerequisite: All core and nurse educator specialty courses or with permission of the Department Chair.

NURS 5469 - Patterns of Care Delivery*

4 sem. hrs. (1:9) Appraisal of various patterns of care delivery that develop in response to the evolving and increasingly complex resources in the health care delivery system. Students will complete a project evaluating the management and delivery of the continuum of care in one or more health care organizations. Students must earn a B or better grade to earn credit for this course. The lecture component of this course is delivered through online technology. Laboratory hours must complete in appropriate settings approved by clinical faculty. Capstone Course. Prerequisites: All core and leadership specialty courses or with permission of the Department Chair.

NURS 5624 - Advanced Health Assessment and Differential Diagnosis*

6 sem. hrs. (4:6) Study and practice of complex skills for comprehensive health assessment with focus on differentiation and interpretation of normal and abnormal findings across the lifespan. Focus extends to developing a comprehensive database to establish a list of differential diagnoses. Includes radiology, EKGs and common office tests performed in primary practice. Oral and written communication of findings in a collaborative relationship with other healthcare providers is emphasized. Variables related to rural and multicultural populations are incorporated into the total assessment. Students increase knowledge of anatomy, physiology, and communication skills. The clinical component of the course provides opportunity to interpret as well as practice complex assessment techniques. Students perform basic office tests and interpret other laboratory and diagnostic data as part of the assessment process. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Prerequisite: Undergraduate health assessment course or BSN Level Competency Health Assessment Check-off for RN-MSN students; All Nursing Core Courses; NURS 5322 and NURS 5326 or with the permission of the Department Chair.

NURS 5644 - Management of Acute and Chronic Illness I*

6 sem. hrs. (3:9) Study of clinical management of commonly occurring acute and chronic conditions in primary health care settings across the lifespan. Content includes study of symptom complexes, pathophysiology, epidemiology, clinical management, and prevention of complications. Emphasis is on symptom analysis, diagnostic reasoning, differential diagnosis, and prescription of therapeutic regimens. Attention is given to research-based pharmacological and non-pharmacological treatments, and integration of nursing, developmental, family and transcultural theories to the diagnostic and management process. The clinical practice provides the opportunity for the student to perform comprehensive and episodic assessments, practice advanced skills in health assessment, diagnose commonly occurring illnesses, and suggest treatments under supervision in urban/rural communities. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Prerequisites: NURS5322, NURS5323, NURS5341, and NURS5624or with permission of the Department Chair.

NURS 5645 - Management of Acute and Chronic Illness II*

6 sem. hrs. (3:9) Continued study of the clinical management of commonly occurring acute and chronic conditions in primary health care settings across the life span. Emphasis is on symptom analysis, diagnostic reasoning, differential diagnosis, and prescription of therapeutic regimens. The clinical practice provides the opportunity for the students to perform comprehensive and episodic assessments, practice advanced skills in health assessment, diagnose commonly occurring illness, and suggest treatments under supervision. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Prerequisite: NURS5644 or with permission of the Department Chair.

NURS 5746 - Integrated Clinical Practice: FNP*

7 sem. hrs. (1:18) Continued study of assessment and clinical management of selected health problems frequently seen in primary health care. The clinical portion provides for the development of clinical competence as the student integrates previously acquired knowledge into the enactment of the multiple roles for the nurse practitioner, and allows for a greater degree of interdependent practice based on the student's abilities and progress. Student may work with a preceptor in multicultural and rural communities. Students must earn a B or better grade to earn credit for this course. The lecture component of this course is delivered through online technology. Laboratory hours must be completed in appropriate settings approved by clinical faculty. Capstone Course. Prerequisite: NURS5645 or with permission of the Department Chair.

NURS 6300 - Health Policy and Economics for the DNP*

3 sem. hrs. 3:0 NURS 6300 DNP Leadership in Health Policy (3). Focus is on the use of political efficacy and competence to improve health outcomes and improve the quality of the health care delivery system. The interrelationships between policy, political trends, health care quality outcomes, access to care, and economics will be examined.

NURS 6301 - Epidemiology and Statistics for Evidence-Based Practice*

3 sem. hrs. 3:0 Principles of epidemiology and biostatics applied to the management of population health. Prerequisite: Graduate standing, and admission into the DNP program.

NURS 6302 - Genomics in Health Care*

3 sem. hrs. 3:0 Focus is on the relationship between genes, environment, and health. Emphasis will be placed on concepts of prevention and treatment effectiveness within cultural care contexts. Ethical and legal considerations will also be addressed. Prerequisite: Graduate standing, and admission into the DNP program.

NURS 6303 - System Behavior and Impact on Health Care*

3 sem. hrs. 3:0 Principles and application of organizational behavior that promotes quality care delivery in diverse healthcare settings. The microsystems framework for quality management will be applied to quality management in selected healthcare settings. May require field-based activities. Prerequisite: Graduate standing, and admission into the DNP program.

NURS 6304 - Application of Evidence in Practice I*

3 sem. hrs. 3:0 Exploration of issues related to evidence-based practice in select clinical settings under the direction of faculty. Synthesizes key research related to clinical topics as part of systematic review of evidence. Requires field-based activities. Prerequisite: Successful completion of NURS 6300, NURS 6306, NURS 6221 , NURS 6301, & NURS 6302

NURS 6305 - Principles of Nursing Education for Teaching and Patient Care*

3 sem. hrs. 3:0 An overview of theoretical principles & guidelines used in the design & evaluation of educational programs. Focus is on adult education philosophies and learning theories and their impact on nursing education in multiple settings. Curriculum development at the institutional, course, and individual class levels including

both academic and clinical settings will be examined. Prerequisite: Graduate standing, and admission into the DNP program.

NURS 6306 - Informatics and Technology for Advanced Practice*

3 sem. hrs. 3:0 The examination of the use and mobilization of information and technology across organizations for insuring continuity of quality care. May require field-based activities. Pre-Requisites: Graduate standing, admission into the DNP program and computer literacy.

NURS 6307 - Application of Evidence in Practice II*

3 sem. hrs. Integration of practice, theory, and research to expand clinical expertise in the management of clinical or system problems. Includes the examination of care delivery structures and processes that contribute to specific clinical problems. Clinical practice experiences available with this course. Pre-Requisites: Successful completion of NURS 6304.

NURS 6308 - DNP Project Proposal*

3 sem. hrs. 3:0 Development of DNP project proposal. Requires presentation to DNP faculty for approval at the end of the course. Prerequisite: Successful completion of NURS 6304.

NURS 6310 - DNP Practicum (3)*

3 sem. hrs. Expanded development of expertise in the management of health problems in selected populations through clinical practice experiences. Prerequisites: Successful completion of NURS 6321 .

NURS 6311 - DNP Project Report*

3 sem. hrs. 3:0 Demonstration of advanced role competencies through the design and the implementation of a project with potential to have a positive impact on patient or system outcomes. Prerequisite: Successful completion of NURS 6307

NURS 6321 - Application of Advanced Principles for Clinical Nursing Practice*

3 sem. hrs. Emphasis will be on synthesis of past clinical practice, with advanced understanding of theory, evidence based practice, policy issues, and principles of quality assurance and safety to continue the development of the doctoral student as an expert reflective practitioner. Individualized clinical focus will be on designated populations.

NURS 6331 - Advanced Principles for Executive Practice

3 sem. hrs.

Application of financial and human resource management principles in designing solutions to complex healthcare delivery problems emerging from current healthcare reimbursement and performance requirements. Clinical experiences are required for this course. NURS 6307
NURS 6308

NURS 6393 - Inferential Statistics for Nursing Practice

3 sem. hrs. In depth study of various leadership and clinical nursing practice areas. Students will study techniques in evidence based research and apply aspects of research methods including quality improvement methodologies and statistical techniques. None

NURS 6395 - DNP Project Seminar

1-3 sem. hrs. Deliverables related to the DNP project. Open only to DNP students in the CONHS with consent of the DNP Chair. Does not count as credit toward regular graded coursework for DNP degree. Grade assigned will be "credit" (CR) or "no credit" (NC).

Operations Management

OPSY 5315 - Operations Management*

3 sem. hrs. Study of operations of manufacturing and service organizations. Introduction to operational design and control issues such as forecasting, capacity planning, facility location and layout, quality, JIT/lean philosophies and materials requirement planning. Emphasis on developing an operational strategy linking functional areas. Includes international, environmental, legal, and ethical aspects of operations. Prerequisite: ORMS 5310 or equivalent.

OPSY 5370 - Seminar

1-3 sem. hrs. Seminar in an identified topic in Operations Management. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

OPSY 5396 - Directed individual Research Or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Operations Research/Management Science

ORMS 5301 - Business Decision Analysis Tools

3 sem. hrs. An introduction to analytic tools for business and economic decision making. Topics include analytic methods appropriate for cost-volume-profit analysis, financial analysis and valuation, portfolio selection, capacity planning, job scheduling, process and facility design, market analysis, and decision tools needed in other courses. This is a prerequisite course and is not required for students who have completed MATH 1314 and MATH 1325 or equivalent.

ORMS 5310 - Statistical and Decision Analysis*

3 sem. hrs. A study of analytical methods useful for business and economic decision making. Topics include descriptive statistics, probability, inferential statistical methods, and decision analysis. (This is a core course.)

ORMS 5370 - Seminar

1-3 sem. hrs. Seminar in selected business applications of quantitative methods. May be repeated for significantly different topics with written permission from the Director of Master's Programs. Prerequisite may vary depending on topic.

ORMS 5396 - Directed individual Research or Readings

1-3 sem. hrs. Contact Director of Master's Programs.

Physics

PHYS 5490 - Advanced Topics

1-4 sem. hrs. (1:0-3:2) Subject material variable. Advanced topics including literature research. May be repeated for credit when topics are sufficiently different. Prerequisite: Permission of instructor.

Political Science

POLS 5300 - U.S. Government institutions

3 sem. hrs. A survey of the major institutions of the U.S. national government, with special attention to the presidency, Congress, and the U.S. Supreme Court. Some comparative discussion of federalism, parliamentary systems of government, and proportional representation. Brief review of the U.S. Constitution, the federal court structure, and the role of Federal Reserve System.(Credit may not be given for both this course and PADM 5300.)

POLS 5302 - Policy Making and Public Administration

3 sem. hrs. Relationship of politics and administration with reference to the influence of administration and bureaucracy, legislative bodies, parties, political leadership, interest groups and other forces in the formation and execution of public policy in various levels of, primarily, American government. (Credit may not be given for both this and PADM 5302.)

POLS 5308 - Administrative Law

3 sem. hrs. Analysis of the nature of law, especially the law of administrative procedure. The course examines the separations and delegation of powers, the meaning and functioning of the Administrative Procedures Act, the scope of judicial review, and other remedies against administrative actions. (Credit may not be given for both this and PADM 5308.)

POLS 5330 - Public Policy Analysis

3 sem. hrs. A survey of the approaches and analytical tools available in policy analysis. Special attention is given to the role of policy analysis in informing the process of change and reform in American society. The course gives students opportunities to research policy issues and teaches them how to think about any area policy. Students should gain an understanding of the various approaches of inquiry into policy problems. (Credit may not be given for both this and PADM 5325.)

POLS 5340 - Environmental Policy

3 sem. hrs. A study of the political factors that influence the environmental policy of the United States. Emphasis is on the policy process rather than the details of environmental regulations. South Texas issues are studied in order to understand the complexities facing public administrators at the local level. Offered on sufficient demand. (Credit may not be given for both this and PADM 5340.)

POLS 5396 - Individual Study

3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Offered on application to and approval of the program coordinator.

Psychology

PSYC 5311 - Research Methods and Statistics I

3 sem. hrs. The purpose of this course is to provide beginners knowledge on topics related to Psychological methodology and statistics. Specifically, the course will cover a range of topics related to standard normal curve, t-scores, z-scores, transformation of scales, reliability, validity, confidence intervals, effect size, item analysis and factor analysis. The course will cover these topics within the context of t-tests, correlation and regression analyses. It will also cover the research methods in which these tests are most commonly used: non-experimental methods such as survey and longitudinal studies. Prerequisites: MATH 1342 & PSYC 3411 (or equivalents). Face-to-Face 1-24%

PSYC 5312 - Research Methods and Statistics II

3 sem. hrs. The purpose of this course is to provide advanced knowledge on topics related to psychological methodology and statistics. Specifically, the course will cover the following statistical tests: ANOVA, non-parametric statistics, between, within/repeated and mixed studies design. Furthermore, it will also cover the research designs in which these tests are commonly used. Specifically, the course will focus primarily on quantitative and qualitative experiments. Prerequisite: PSYC 5311. Online Classification: Face-to-Face 1-24%.

PSYC 5321 - Biological Bases of Behavior

3 sem. hrs. The study of the anatomy and physiology of the human nervous system including neural transmission, motor systems, speech and higher cortical functions with special emphasis on the physiological changes associated with pathological conditions and their impact on human behavior. Core course.

PSYC 5322 - Advanced Personality Theories

3 sem. hrs. A survey of the major approaches to the study of personality. Psychoanalytic, trait, behavioral and humanistic paradigms will be studied with respect to theory, research, and therapeutic application.

PSYC 5323 - Advanced Social Psychology

3 sem. hrs. A survey of social psychological theory and research. Topics include attitudes, cognition, interpersonal relationships, social influence, prejudice, and group behavior. (This is a core course.)

PSYC 5324 - Advanced Developmental Psychology

3 sem. hrs. A review of research and theories on normal physical, cognitive, emotional, and social development across the lifespan. (This is a core course.)

PSYC 5341 - Graduate Psychopathology

3 sem. hrs. Theories, processes and issues related to the development, evaluation, and classification of deviant behaviors.

PSYC 5342 - Professional Issues and Ethics in Psychology

3 sem. hrs. This course is designed to introduce graduate students to the ethical standards and contemporary issues affecting professional conduct in the field of psychology. The topics covered revolve around ethical conduct in practice and research, as well as the decision-making foundations for resolving ethical issues. In addition to ethical standards, legal issues affecting professional practice will be covered in detail.

PSYC 5343 - Intellectual Assessment

3 sem. hrs. Instruction in the theoretical, ethical and practical application of intellectual assessment in a clinical setting using standardized instruments, such as the WAIS-IV and WISC-IV. Also reviews the current development and use of other instruments that assess cognitive function.

PSYC 5344 - Personality Assessment

3 sem. hrs. Personality assessment and interpretation using standard instruments such as MMPI, CPI, TAT, and Rorschach.

PSYC 5345 - Family Theory, Practice and Therapy

3 sem. hrs. Provides an introductory survey of the major theories and theorists in the area of the psychological formulation of family theory. This course will cover various theories of family therapy as well as assessment of family dynamics, and the implications for the application of family theory in practice. A review of the research done in the area and the applicability of the research findings in practice.

PSYC 5348 - Projective Techniques

3 sem. hrs. An in-depth study of projective techniques for personality assessment. The main instrument studied is the Rorschach Inkblot Test using the Beck system. Also covered are the Thematic Apperception Test (TAT), House-Tree-Person Projective Technique, and Draw-a-Person Techniques.

PSYC 5349 - Diversity Issues and Multiculturalism in Psychology

3 sem. hrs. This purpose of this course is to build foundation on multicultural competencies and skills to provide culturally relevant, sensitive, and effective psychotherapy services and assessments to diverse populations. Students will obtain a thorough review on multicultural awareness, skills and knowledge which will improve competencies related to the practice of psychology. Evaluation of culture from the standpoint of both the therapist and client in the delivery of therapeutic services is the key feature of this course. Thus, the course will provide a sociopolitical perspective as well as identify how specific forms of oppression operate and impact clinical practice and psychology research.

PSYC 5350 - Introduction to Psychotherapy

3 sem. hrs. The course includes a review of numerous theoretical approaches to psychotherapy, with a reliance on information from research-supported psychotherapeutic approaches. Students will learn the similarities and differences between these approaches at both the theoretical and technical level. Various stages of treatment and a range of important issues in conducting psychotherapy are considered. Students will develop a general understanding of the process of therapy, an ability to conceptualize client problems in a way that suggests potential interventions, and knowledge of techniques that can facilitate improvement. Online Classification: Face-to-Face 1-24%.

PSYC 5351 - Child Psychopathology

3 sem. hrs. The course will take a developmental approach in explaining child psychopathology. The course will include a consideration of diagnostic, epidemiological, developmental, and psychophysiological determinants of behavior. Prerequisites: PSYC 5324 and PSYC 5341 or permission of instructor.

PSYC 5352 - Therapy with Multiple Clients: Interpersonal and Group Dynamics

3 sem. hrs. This course will engage graduate-level students in the study of the principal theories of group therapy and family therapy. The class will focus on the theoretical,

ethical, and practical and culturally-informed application of both group process and family therapy. Online classification: Face-to-Face 1-24%.

PSYC 5355 - Group Psychotherapy

3 sem. hrs. This course is designed to introduce the graduate student to the theoretical and applied issues related to the practice of group psychotherapy. Examines a variety of therapeutic groups as well as the issues related to the practice of group psychotherapy with special populations. Prerequisites: PSYC 5350 or permission of the instructor.

PSYC 5356 - Applied Behavioral/Cognitive Psychology

3 sem. hrs. The focus of this course will be on key cognitive and affective bases of behavior and the manner in which these interact with environmental influences. The course will cover how essential concepts within these areas are linked to theoretical conceptualizations of behavior and psychopathology. Theoretical principles will be linked to applications within clinical psychology and to evidence-based interventions for psychological disorders. Online classification: Face-to-Face 1-24%.

PSYC 5357 - Psychopharmacology

3 sem. hrs. This course is designed to introduce the graduate student to the basic classes of psychotropic drugs and their effects on human behavior. The course will begin with a basic review of how drugs are processed and used by the body including pharmacokinetics, pharmacodynamics and neural transmission. A discussion of the chemical properties of both therapeutic drugs and drugs of abuse by drug class will follow, including a discussion of the most common drugs used to treat psychological disorders. A previous course in graduate Physiological Psychology (PSYC 5321) is a prerequisite for this course. Prerequisite: PSYC 5321. Online Classification: Face-to-Face 1-24%.

PSYC 5360 - Seminar in Psychology

3 sem. hrs. In-depth study of various topics within psychology such as those related to history, clinical, social, experimental and business and industrial. May be repeated when topics vary.

PSYC 5395 - Thesis

3 sem. hrs. Independent research under the direction of a faculty member. May be repeated to a total of six semester hours. Grade assigned will be "credit" (CR) or "no credit" (NC). By permission only.

PSYC 5396 - Individual Study

1-3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Offered on application to and approval of the program coordinator. No more than 6 hours will be counted towards the degree.

PSYC 5398 - Clinical Practicum

3 sem. hrs. Supervised experience in a placement such as a community mental health/mental retardation agency. May be repeated. (Limited to degree students in the Psychology program or graduates of the psychology program working on the LSSP [Licensed Specialist in School Psychology]). Liability insurance required. Enrollment is dependent on the number of suitable practicum sites available.

Public Administration

PADM 5300 - U.S. Government Institutions*^

3 sem. hrs. A survey of the major institutions of the U.S. national government, with special attention to the presidency, Congress, and the U.S. Supreme Court. Some comparative discussion of federalism, parliamentary systems of government, and proportional representation. Brief review of the U.S. Constitution, the federal court structure, and the role of Federal Reserve System. (Credit may not be given for both this course and POLS 5300.)

PADM 5301 - Theory and Practice of Public Administration^

3 sem. hrs. An introduction to the concepts, theories, literature, legal aspects, and practices of public administration and management. Topics include administrative behavior; program planning, management and evaluation; decision-making; structure and processes of organizations; and ethics.

PADM 5302 - Policy Making and Public Administration^

3 sem. hrs. Relationship of politics and administration with reference to the influence of administration and bureaucracy, legislative bodies, parties, political leadership, interest groups and other forces in the formation and execution of public policy in various levels of, primarily, American government. (Credit may not be given for both this course and POLS 5302.)

PADM 5303 - Administrative Ethics^

3 sem. hrs. A survey of ethical issues faced by public administrators. The course will provide a general grounding in the philosophical and theoretical foundations of ethical inquiry. Special attention will be given to ethical problems arising within hierarchical organizations and to the ethical implications of particular public policies.

PADM 5304 - Human Resource Management^

3 sem. hrs. Analysis of the major personnel management problems and issues in the public sector. The functions of recruitment, selection, development, compensation, and employee relations will be studied. Special attention will be given to the legal environment of personnel.

PADM 5305 - Public Budgeting and Finance

3 sem. hrs. An analysis of the formation, management, and administration of fiscal policies at all levels of government in the United States. Basic financial management planning, preparation, presentation, and resource allocation analysis.

PADM 5306 - Public Sector Fiscal Management and Analysis^

3 sem. hrs. This course takes an in-depth look at finance and focuses on budget and reform techniques, revenue sources, structure and control, the administration of debt and cash management; including strategies for reducing borrowing costs and increasing the interest earnings of government. Prerequisite: PADM 5305.

PADM 5308 - Administrative Law

3 sem. hrs. Analysis of the nature of law, especially the law of administrative procedure. The course examines the separation and delegation of powers, the meaning and functioning of the Administrative Procedures Act, the scope of judicial review, and other remedies against administrative actions. (Credit may not be given for both this course and POLS 5308.)

PADM 5310 - Public Organizations^

3 sem. hrs. A course designed to develop an understanding about public sector organizations, their environments, and the political subsystems in which they exist. The course explores organization theory and administrative behavior to understand and diagnose organizational problems and dynamics in the public sector. Emphasis is placed on organization-environment relationships.

PADM 5311 - Research Methods in Public Administration

3 sem. hrs. Examination of analytical methods, research techniques, and models of inquiry in the social and administrative sciences. Topics may include problem definition; needs assessment; data gathering, processing and interpretation; survey research; secondary analysis; and demographics. [Cross-listed with IDSY 5311.]

PADM 5312 - Statistics for Public Administrators

3 sem. hrs. Examination of the statistical techniques used by public administrators to include descriptive and inferential statistics. Use of SPSS for analysis of empirical and secondary data sources. Interpretation, analysis and presentation is emphasized. Integration of research design and statistical techniques. Prerequisite: PADM 5311.

PADM 5313 - Survey Research for Public and Non-Profit Managers

3 sem. hrs. The ability to conduct and interpret survey research is becoming an integral part of public management. This course provides students with the knowledge and skills needed to direct, understand, and make effective use of administrative and policy information from survey research data.

PADM 5320 - Diversity in Public Administration

3 sem. hrs. This course examines the importance of diversity, including race/ethnicity, gender and other demographics in public administration at the local, state and federal level and in various types of public agencies.

PADM 5331 - Public and Non-Profit Management^

3 sem. hrs. An examination of theories, processes, and skills in managing the public and non-profit sectors. Topics of study include how to successfully implement policies, administer services and provide public goods, and collaborate with agencies in various sections.

PADM 5332 - Resource Development for Non-profit Organizations

3 sem. hrs. Examination of the theoretical and practical applications of fundraising. A study of government or non-profit agency grant and contract administration. Applications for responding to funding assistance and solicitations and grants. Contract preparation, evaluation, and presentation.

PADM 5335 - Program Evaluation

3 sem. hrs. This course is designed to help the pre- and in-service professional public manager conceptualize the program evaluation effort as a meaningful and understandable set of tasks. The course will examine various means of evaluating programs and enable students to develop program evaluation skills, so that they become better contributors and consumers of evaluation and research reports.

PADM 5360 - Strategic Planning

3 sem. hrs. A seminar course that gives pre- or in-service managers the tools necessary to consider the long-term mission and direction of the agency and craft strategy and operations from both internal and external stakeholders to achieve those goals. Consideration of strategic planning as a process for implementing strategic management.

PADM 5365 - Seminar in Public Administration - Capstone^

3 sem. hrs. The capstone course for the MPA program is an integrative approach applying the skills, knowledge and values considered, discussed and acquired throughout the core courses to selected public and administrative problems through analytical exercises and case studies. All other core courses must be completed prior to enrollment in the capstone. This is the exit requirement for the MPA program. This course must be taken during the last semester prior to graduation.

PADM 5370 - Topics in Public Administration

3 sem. hrs. Seminar in identified topics in Public Administration. May be repeated when topics vary. Offered on sufficient demand.

PADM 5377 - Grant Writing

3 sem. hrs. An advanced workshop on the grant proposal writing process, including identifying sources of funding, conducting research to support funding applications, data analysis, tailoring each proposal to a specific funding agency, and the requirements of electronic submission. Students will receive experience writing actual proposals on behalf of local organizations and agencies.

PADM 5380 - Homeland Security and Public Administration*^

3 sem. hrs. This course will provide an overview of the essential ideas that constitute the emerging discipline of homeland security. The course is designed for students interested in a broad overview of homeland security policies including topics related to emergency management, intelligence gathering and analysis, infrastructure security, protection of civil liberties, and counter terrorism strategies.

PADM 5381 - Modern Terrorism and Counter Terrorism*^

3 sem. hrs. This course will provide an introduction to the operational and organizational dynamics of modern terrorism from the Cold War to the present, This course will study terrorist organizations to understand the ideologies, cultures, structures and causative factors behind major movements. This course will also focus on U.S. Efforts to counter terrorism from the Cold War to the Global War on Terrorism.

PADM 5382 - Emergency Management and Disaster Planning Practicum*^

3 sem. hrs. This course will examine the public policies, procedures and programs for the management of hazards, emergencies and disasters through the use of case studies. It focuses on providing students hands-on experience in emergency management planning and response through the use of tabletop and field exercises. Students will be required to take this course last in the graduate certificate program.

PADM 5396 - Individual Study

3 sem. hrs. A carefully planned special study on an academic topic, Directed Individual Study (DIS) is a tutorial, directed and evaluated by a member of the graduate public administration faculty. Enrollment is restricted to graduate students who have demonstrated both academic ability and the capacity for independent work. Complete applications must be filed and approved by the MPA coordinator and the Dean of Liberal Arts in advance of registration. Prerequisites: 1) At least 6 semester hours of graduate course work in the field at Texas AandM University-Corpus Christi. 2) A minimum GPA of 3.0 on all work in the field at Texas AandM University-Corpus Christi. 3) At least one previous course with the supervising instructor. A maximum of 6 semester hours of 5396 may be counted towards the graduate degree. Offered on application to the program coordinator.

PADM 5399 - Internship*^

3 sem. hrs. Practical experience with a government or not-for-profit agency arranged in advance by the supervising professor. Periodic visits, consultations, and a final paper. Offered on sufficient demand and by application to the program coordinator.

Reading

READ 5310 - Emergent Literacy

3 sem. hrs. Language acquisition and functions of language are explored for beginning literacy (K-3). Emphasis will be on classroom strategies for promoting language development and literacy growth for children through the integration of the language systems (reading, writing, speaking, listening). Of particular concern will be children's oral language, letter knowledge, reading and writing vocabularies, concepts about print, and auditory discrimination.

READ 5314 - College/Adult Literacy

3 sem. hrs. Theories and research on reading, writing, and study processes of college and adult students will be explored. Students will learn about program design, teaching/learning strategies, and assessment procedures appropriate for developmental college students and adult education.

READ 5321 - Fundamentals of Elementary Reading instruction I

3 sem. hrs. This course includes a study of methods, materials, and strategies for teaching reading. It is designed to provide graduate students with professional knowledge concerning current research, philosophical perspectives, essential program components, and pedagogical strategies essential to the teaching of reading. Enrollment limited to graduate students seeking initial teacher certification.

READ 5322 - Fundamentals of Elementary Reading instruction II

3 sem. hrs. This course includes a study of theoretical, research, and pedagogical aspects of the reading-writing connection for grades 4-8 students. There will also be an emphasis on content area reading and study skills as well as the writing process. Enrollment limited to graduate students seeking initial certification.

READ 5323 - Fundamentals of Secondary Reading instruction

3 sem. hrs. This course is designed to provide graduate students with professional knowledge concerning current research, theory, essential program components, and pedagogical strategies in secondary literacy. Application of strategies to the reading, writing, and learning needs to adolescents will be emphasized. Areas of consideration will include classroom assessment of literacy study reading, and integrating trade books into the content classroom. Enrollment limited to graduate students seeking initial certification.

READ 5345 - Stages and Standards for Reading Development

3 sem. hrs. This course emphasizes effective reading practices that reflect state content and performance standards. Particular emphasis is placed on the interrelated components of reading and how these components apply in reading instruction. Equal emphasis is placed on primary, middle school, and high school students. This course is required for the Master Reading Teacher Certificate.

READ 5346 - Trends and issues in Literacy

3 sem. hrs. In this course students will examine the recent and past trends in literacy and the political, cultural, and research-based forces that influenced those trends. Attention will be gicen to how those trends have impacted and are impacting literacy instruction.

READ 5350 - Multicultural Literacy

3 sem. hrs. This is a graduate level course that focuses on issues pertaining to multicultural literacy and biliteracy. This course examines the educational issues confronting culturally and linguistically diverse students in our schools today. This course is required for the Master Reading Teacher Certificate.

READ 5352 - Theoretical Models of Reading and Writing

3 sem. hrs. This course is designed to provide teachers opportunities to expand their knowledge of the theoretical ways in which reading and writing processes are related and the practical ways in which these parallel processes can be incorporated into the literacy curriculum.

READ 5355 - Teaching Literacy through Technology

3 sem. hrs. In this course students explore research on the use of computers and related technology to (a) develop a more responsive literacy curriculum, and (b) determine literacy management and evaluation procedures in the technology environment.

READ 5357 - Critical Literacy

3 sem. hrs. Attention is on the theoretical and philosophical foundations of critical literacy. Students expand the lens through which literacy in schools may be viewed and develop a language of critique for analyzing literacy in social, political, and economic contexts.

READ 5369 - Content Area Reading

3 sem. hrs. In this course graduate students examine the theoretical and functional aspects of literacy across the curriculum. Emphasis is placed on (a) ways to promote and develop students' abilities to learn through text-based instruction, (b) ways to promote the acquisition of study skills, and (c) ways to assist struggling readers in a classroom situation.

READ 5371 - Diagnosis and Correction of Reading Problems

3 sem. hrs. In this course students learn techniques for diagnosis and correction of reading problems as they work with children experiencing difficulty in learning to read.

READ 5372 - Classroom Assessment and instruction

3 sem. hrs. Course attention is on the selection and administration of appropriate reading assessments for all students. Particular focus is given to the role and use of reading assessment for planning, designing, and adjusting instruction to promote literacy learning for all learners. This course is required for the Master Reading Teacher Certificate.

READ 5381 - Exploring the Literature of Children and Adolescents

3 sem. hrs. This course will examine the historical, social, and pedagogical developments of the field of literature for children and adolescents.

READ 5390 - Professional Seminar: Special Topics in Literacy

3 sem. hrs. The course addresses issues relevant to literacy. It may be repeated when topics vary.

READ 5392 - Psycho-sociolinguistics and Reading

3 sem. hrs. This course explores the psychology of language as well as the social semiotics of language learning. Theories of cognition and sociolinguistics will be examined as they relate to literacy development in regular and specialized learning contexts.

READ 5393 - Literacy Curriculum and Supervision

3 sem. hrs. Components of comprehensive reading programs in schools and districts will be examined, and strategies for literacy curriculum design and staff development will be explored. Emphasis will be on the literacy professional as a change agent and promoter of educational innovation.

READ 5395 - Leadership and Literacy

3 sem. hrs. This course emphasizes how to disseminate reading research to critical stakeholders involved in education. Techniques include, but are not limited to, coaching, collaborating, mentoring, and consulting with colleagues.

READ 5396 - Literacy Research Seminar

3 sem. hrs. This seminar is the culminating course in the graduate reading concentration. Current trends in literacy research, the critical examination of selected research studies, and the self-evaluation of professional needs and interests are included. This course calls for students to integrate information from previous classes with new information presented in this class in order to develop, conduct, and evaluate action-based research. Prerequisites: 21 hours of graduate Reading courses including READ 5345, READ 5371, and READ 5392.

READ 5696 - Directed individual Study

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

READ 5697 - Reading Practicum

6 sem. hrs. Students will have an opportunity to apply their knowledge of reading instruction by teaching children and youth with reading difficulties. They will gain knowledge of: the organization and management of the reading program, as well as early intervention strategies and programs. Literacy leaders and their contributions to the knowledge base for reading and writing instruction will be reviewed. Course requirements include the development of case studies on the children and youth being tutored. Some emphasis will also be placed on the many roles of the reading professional.

READ 6310 - Emergent Literacy

3 sem. hrs. Language acquisition and functions of language are explored for beginning literacy P-4. Emphasis will be on classroom strategies for promoting language development and literacy growth for children through the integration of language systems (reading, writing, speaking, listening). Of particular concern will be children’s oral language, letter knowledge, reading and writing vocabulary, concepts about print, and auditory discrimination. Doctoral students enrolled in this course will be expected to complete all assignments designated for master’s students and also complete additional specified assignments. Students who took this course as READ 5310 may not take the course as READ 6310.

READ 6314 - College/adult Literacy

3 sem. hrs. Theories and research on reading, writing, and study processes of college and adult students will be explored. Students will learn about program design, teaching/learning strategies, and assessment procedures appropriate for developmental college students and adults. In addition, doctoral students will study topics related to educating adults in professional situations. Students who took this course as READ 5314 may not take the course as READ 6314.

READ 6345 - Stages and Standards for Reading Development

3 sem. hrs. This course emphasizes effective reading practices that reflect state content and performance standards. Particular emphasis is placed on the interrelated components of reading and how these components apply in reading instruction. Equal emphasis is placed on primary, middle school, and high school students. This course is required for the Master Reading Teacher Certificate. Doctoral students will complete a major research paper on a topic to be approved by the professor. Students who took this course as READ 5345 may not take the course as READ 6345.

READ 6350 - Multicultural Literacy

3 sem. hrs. This is a graduate level course that focuses on issues pertaining to multicultural literacy and biliteracy. This course examines the educational issues confronting culturally and linguistically diverse students in our schools today. Doctoral students will have assignments that go beyond those for master's students. Students who took this course as READ 5350 may not take the course as READ 6350.

READ 6352 - Theoretical Bases for Literacy

3 sem. hrs. Course focus is on major theories of reading and literacy in terms of both processes and practices. It also attends to ways in which theory relates to the literacy curriculum.

READ 6356 - Writing for Publications in Higher Education

3 sem. hrs. This course addresses topics in writing for publication in higher education including the writing process, composition, organization, collaboration, and the identification of forums for dissemination of research and scholarship.

READ 6357 - Critical Literacy

3 sem. hrs. Attention is on the theoretical and philosophical foundations of critical literacy. Students expand the lens through which literacy in schools may be viewed and develop a language of critique for analyzing literacy in social, political, and economic contexts.Doctoral students have assignments that go beyond those for master's students. Students who took this course as READ 5357 may not take the course as READ 6357.

READ 6369 - Content Area Reading

3 sem. hrs. In this course graduate students examine the theoretical and functional aspects of literacy across the curriculum. Emphasis is placed on (a) ways to promote and develop students' abilities to learn through text based instruction, (b) ways to promote the acquisition of study skills, and (c) ways to assist struggling readers in a classroom situation. Doctoral students enrolled in this course will be expected to complete all assignments designated for the master's level students and also complete additional specified assignments. Students who took this course as READ 5369 may not take the course as READ 6369.

READ 6371 - Diagnosis and Correction of Reading Problems

3 sem. hrs. In this course, students will become aware of the factors that influence reading achievement through the study and implementation of various assessments. Some attention will also be paid to instructional strategies. The primary focus will be on children who are having difficulty reading. Students who took this course as READ 5371 may not take the course as READ 6371.

READ 6372 - Classroom Assessment and instruction

3 sem. hrs. Course attention is on the selection and administration of appropriate reading assessments for all students. Particular focus is given to the role and use of reading assessment for planning, designing, and adjusting instruction to promote literacy learning for all learners. Students who took this course as READ 5372 may not take the course as READ 6372.

READ 6380 - Advanced Studies in Literature for Children and Adolescents

3 sem. hrs. This course will examine the historical, sociological, and pedagogical developments of the field of literature for children and adolescents and will emphasize teacher research and inquiry. The major emphasis of the course will focus on awareness of both traditional and contemporary literature and authors for children and adolescents.

READ 6390 - Special Topics in Reading

3 sem. hrs. The course addresses contemporary issues in education. It may be repeated when topics vary.

READ 6391 - Evaluation of Literacy Methods, Materials, and Assessment

3 sem. hrs. Reading professionals taking the course acquire the knowledge and strategies to evaluate literacy-related materials, methodologies, and assessment. In addition, they will develop a process to evaluate teacher-produced and commercial materials.

READ 6392 - Psycho-sociolinguistics and Reading

3 sem. hrs. This course explores the psychology and the social semiotics of language and their relationship to literacy teaching and learning. Theories of cognition and sociolinguistics will be examined as frameworks for better understanding literacy development. Semiotics is the study of the signs and symbols of language and deals with their functions in the syntactic, semantic, and pragmatic use of language. Doctoral students will complete a major research paper on a topic to be approved by the professor. Students who took this course as READ 5392 may not take the course as READ 6392.

READ 6393 - Literacy Curriculum and Supervision

3 sem. hrs. Components of comprehensive reading programs in schools and districts will be examined, and strategies for literacy curriculum design and staff development will be explored. Emphasis will be on the literacy professional as a change agent and promoter of educational innovation.

READ 6395 - Leadership and Literacy

3 sem. hrs. This course emphasizes "how" to disseminate reading research to critical stakeholders involved in education. Techniques include, but are not limited to, coaching, collaborating, mentoring, and consulting with colleagues. Students who took this course as READ 5395 may not take the course as READ 6395.

READ 6396 - Literacy Research Seminar

3 sem. hrs. In this doctoral-level course in reading/literacy research, attention goes to historical and current trends in literacy research, the critical examination of selected reading research studies, and self analysis of personal and professional interests and needs. This course calls for students to integrate information from previous graduate classes with information presented in this class to analyze and implement reading/literacy research. Doctoral students enrolled in this course will be expected to complete all assignments designated for the master’s level students and also complete additional

specified assignments. Students who took this course as READ 5396 may not take the course as READ 6396. Prerequisite: Six graduate hours in Reading coursework.

READ 6398 - Advanced Reading Supervision Practicum

3 sem. hrs. In this course, reading specialists will be provided with an opportunity to apply their supervisory skills in a practical situation. Students will observe and evaluate inservice teachers, as well as make suggestions for improvement. Course requirements include completion of teacher evaluation summaries; development of observation forms; description of a district-wide reading program; and planning and implementation of an inservice workshop. Prerequisite: READ 5697 or READ 6697, READ 6391, READ 6352, EDLD 6333, EDLD 6392.

READ 6399 - Advanced Literacy Research Seminar

3 sem. hrs. This course is designed to familiarize doctoral students with (a) historical avenues of literacy research, (b) current trends in literacy research, and (c) procedures for conducting personal research leading to a doctoral dissertation in some aspect of literacy education. Prerequisite: EDLD 6333.

READ 6696 - Directed Individual Study

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

READ 6697 - Reading Clinic Practicum

6 sem. hrs. In this course students will have an opportunity to apply their knowledge of reading instruction by teaching children with reading difficulties. In addition, students will gain knowledge of strategies for comprehension, word recognition and study skills. Literacy leaders and their contributions to the knowledge base for reading and writing instruction will be reviewed. Course requirements include the development of case studies. Doctoral students have additional assignments that go beyond those required of master’s students. Students who took this course as READ 5697 may not take the course as READ 6697. Prerequisites: READ 5371 or READ 6371.

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 Instructional Method
Online

SMTE 5004 - Teaching Assistant Seminar^

0 sem. hrs. (0:0) Examination of contemporary theories of teaching and learning. Basic lesson design, teaching skills, assessment, multicultural education, time management, classroom management, lab safety, and other required training skills required for laboratory. Course content will be linked to participants' experiences as teaching assistants. Course is taken as credit/no credit and may not be applied toward an M.S. degree in the College of Science & Engineering. Offered fall and spring semesters every year.

Sociology

SOCI 5396 - Individual Study

3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Offered on application to and approval of the program coordinator.

SOCI 6312 - Community Development

3 sem. hrs. Ethical perspectives on community development; processes by which groups within a community work together to fulfill community needs through inter-institutional cooperation; establishing cross-institutional linkages; public and private resources for community development; structures and processes of inter-institutional cooperation. This course is open only to students admitted to doctoral study.

SOCI 6313 - Regional Analysis

3 sem. hrs. Sources of data for defining social, economic, demographic, educational, and cultural characteristics of a region; modes of data analysis for ascertaining regional resources and problems; review and analysis of data relative to South Texas Region. This course is open only to students admitted to doctoral study.

Special Education

SPED 5310 - Psychoeducational Testing

3 sem. hrs. Focuses on current research and best practice in assessment of exceptional learners, interpretation of formal and in formal assessment data gathered through a variety of methods, assessment of students from diverse backgrounds and the application of data gathered via a multi-tiered system of support (MTSS). Instructor's permission required. Prerequisites CNEP 5371 and CNEP 5374.

SPED 5311 - Advanced Assessment

3 sem. hrs. Presents a variety of research-based assesment techniques and tools designed to assess exceptional learners. Academic and cognitive assessments are combined for interpretation and development of Full and Individual Evaluations.

SPED 5315 - Individuals with Exceptionalities in Schools*

3 sem. hrs. This course provides basic information and skills for working with students with exceptionalities in a variety of settings. It also includes current trends, issues, and research pertaining to persons with exceptionalities.

SPED 5319 - Introduction to Low-Incidence Disabilities^

3 sem. hrs.

This course introduces students to the field of low-incidence disabilities. Students will explore foundational concepts including: definition and etiology, family and professional partnerships, special education law, and standards based IEPs.

SPED 5320 - Application of Learning Principles^

3 sem. hrs. This course prepares teachers, administrators, counselors and diagnosticians to use a variety of applied learning principles to increase student learning and minimize disruptive behavior.

SPED 5321 - Supporting Access for Students with Low-Incidence Disabilities^

3 sem. hrs. This course focuses on areas of universal design, assistive technology, and resources that support the learning and independence of diverse learners both in school and community settings. Class sessions will be held both on campus and in community settings.

SPED 5324 - Survey of Assistive Technology

3 sem. hrs. This course is an introduction to assistive technology for individuals with disabilities.

SPED 5325 - Technology for inclusion

3 sem. hrs. This course will focus on the use of assistive technology to support and facilitate inclusion of students with disabilities in the classroom. Prerequisite: ETEC 5301.

SPED 5326 - Assistive Technology Assessment

3 sem. hrs. This course will provide systematic procedures for the assessment of individual student's assistive technology needs. Legal issues of assistive technology and its impact on public education will be addressed. Prerequisite: ETEC 5301.

SPED 5327 - Motor Activity Programs for individuals with Disabilities

3 sem. hrs. This course examines the significant role of motor activity in the lives of people with disabilities. Major programmatic approaches to adapted physical activity are presented.

SPED 5340 - Individuals with Multiple Disabilities*

3 sem. hrs. This course is an advanced study of the adaptations, approaches, and supports necessary to meet the educational needs of students who have communication, intellectual, motor, sensory, and/or medical impairments.

SPED 5380 - Behavioral Supports and Interventions for Students with Disabilities

3 sem. hrs. This course will focus on characteristics and classifications of children and adolescents with behavior disorders. Intervention orientations and associated education/treatment approaches for children and adolescents will be explored.

SPED 5385 - English Learners and Special Education

3 sem. hrs. This course is designed to prepare special educators to address the sociocultural and ethnolinguistic needs of English learners. Particular emphasis is placed on: understanding the influence of language and culture in the design of instruction to prevent academic difficulty; the identification of students who need additional instructional supports; appropriate referral, screening, and assessment of students suspected of having disabilities; and the design of individualized education plans for students who qualify for special education services.

SPED 5386 - Strategic Reading and Language Instruction for Students with High-Incidence Disabilities^

3 sem. hrs. This course focuses on reading and language strategies for teaching students with disabilities, including those who are English learners. It is designed to give students an overview of strategic reading and writing instruction.

SPED 5387 - Strategic Math and Content Area Instruction for Students with High-Incidence Disabilities

3 sem. hrs. This course focuses on content-area strategies for teaching exceptional children, including those who are English learners. It is designed to give students an overview of strategic mathematics and content area instruction.

SPED 5390 - Professional Seminar

1-3 sem. hrs. Topics in Special Education vary with professional identification of participants. Instructor's permission required.

SPED 5397 - Special Education Field Experience

3 sem. hrs. A field-based experience in which the student will demonstrate competencies to design and/or implement IEP's for students with disabilities, including those who are English learners. Grade assigned will be "credit" (CR) or "no credit" (NC). Prerequisites: SPED 5315, SPED 5380, SPED 5320, and SPED 5387. Grade assigned will be "credit" (CR) or "no credit" (NC).

SPED 5399 - Individualized Programs for Students with Exceptionalities: Practicum

3 sem. hrs. Field-based practicum based on Texas Educational Diagnostician standards. This course focuses on opportunity to gain extensive field experience in the administration and interpretation of assessment instruments and the development of

individualized education programs. Instructor's permission required. Prerequisites: CNEP 5371, CNEP 5374, SPED 5310, SPED 5315, and SPED 5387. Grade assigned will be "credit" (CR) or "no credit" (NC).

SPED 5696 - Directed individual Study

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

SPED 6315 - Individuals with Exceptionalities in the Schools

Basic information and skills for working with individuals with exceptionalities in a variety of settings. Includes current trends, issues and research pertaining to individuals with disabilities. Students who have taken SPED 5315 may not enroll in SPED 6315.

SPED 6319 - Introduction to Low-Incidence Disabilities

3 sem. hrs. This course introduces students to the field of low-incidence disabilities. Students will explore foundational concepts including: definitions and etiology, family and professional partnerships, special education law, and standards based Individualized Education Program (IEPs).

SPED 6320 - Applications of Learning Principles

3 sem. hrs. This course prepares student(s) to use a variety of evidence-based approaches to increase student learning and minimize disruptive behavior.

SPED 6321 - Supporting Access for Students with Low-Incidence Disabilities

3 sem. hrs. This course focuses on areas of universal design, assistive technology, and resources that support the learning and independence of diverse learners both in school and community settings. Class sessions will be held both on campus and in community settings.

SPED 6380 - Behavior Intervention and Support for Students with Disabilities

3 sem. hrs. This course will focus on characteristics and classifications of children and adolescents with behavior disorders. Intervention orientations and associated education/treatment approaches for children and adolescents will be explained.

SPED 6385 - English Learners and Special Education

3 sem. hrs. The philosophical and legal foundations of bilingual special education and bilingual education in the United States will be examined. Bilingual special education and bilingual education will be defined and the rationale for these programs will also be explained. Moreover, language minority education program models will be described and aspects associated with bilingualism will be discussed. Special emphasis will be placed on a perusal of school-community dynamics relevant to language minority special education.

SPED 6386 - Strategic Reading and Language Instruction for Students with High-Incidence Disabilities

3 sem. hrs. This course focuses on reading and language strategies for teaching exceptional children, including those who are English learners. It is designed to give students an overview of strategic reading and writing instruction.

SPED 6387 - Strategic Math and Content Area Instruction for Students with High-incidence Disabilities

3 sem. hrs. This course focuses on content-area strategies for teaching exceptional children, including those who are English learners. It is designed to give students an overview of strategic mathematics and content area instruction.

Sports Medicine

SMED 5100 - CPR and Basic Life Support

1 sem. hrs. (1:0) SMED 5100 provides the skills needed by health care professionals who are trained to respond to breathing, cardiac, and other first aid emergencies. This includes the use of automated external defibrillation (AED), oxygen, suctioning, and airway management devices to care for a victim of breathing or cardiac emergencies. This course will be taken twice; once in the summer of first year in the program for initial certification and then again in the summer of the second year in the program for recertification.

SMED 5101 - Athletic Training Clinical Experience I

1 sem. hrs. (1:0) SMED 5101 offers a field-based professional experience to provide students the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies in the field of athletic training. Corequisite: SMED 5322 and SMED 5331

SMED 5102 - Athletic Training Clinical Experience II

1 sem. hrs. (1:0) SMED 5102 offers a field-based professional experience to provide students the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies in the field of athletic training. Prerequisite: SMED 5101. Corequisite: SMED 5323

SMED 5103 - Athletic Training Clinical Experience III

1 sem. hrs. (1:0) SMED 5103 offers a field-based professional experience to provide students the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies in the field of athletic training. Prerequisite: SMED 5102. Corequisite: SMED 5334.

SMED 5104 - Athletic Training Clinical Experience IV

1 sem. hrs. (1:0) SMED 5104 offers a field-based professional experience to provide students the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies in the field of athletic training. Prerequisite: SMED 5103. Corequisite: SMED 5343.

SMED 5105 - Athletic Training Clinical Experience V

1 sem. hrs. (1:0) SMED 5105 offers a field-based professional experience to provide students the opportunity to apply knowledge and theory related to the philosophy, principles, and competencies in the field of athletic training. Prerequisite: SMED 5104. Corequisite: SMED 5335.

SMED 5200 - Taping, Bracing, and Preventative Care in Athletic Training

2 sem. hrs. SMED 5200 provides students with lab-based instructions and experiences to introduce the various products and equipment used in the development and construction of pads and braces for injury prevention during sport and physical activity. Students will learn how to apply taping, bracing, bandaging and padding techniques that are common practice in Athletic Training. Corequisite: SMED 5321

SMED 5310 - Evidence Based Practice

3 sem. hrs. SMED 5310 prepares students with the knowledge, skills and abilities necessary to make independent judgments about the validity, results, and application of clinical research and to implement evidence-based clinical practice in their careers. Corequisite: SMED 5311

SMED 5311 - Research Methods I

3 sem. hrs. SMED 5311 provides students with an intellectual opportunity to explore the methods and designs associated with research. This course explores the process and methods of scientific inquiry and interpretation of research findings in athletic training. Students will gain familiarity with the major elements of research including literature review, quantitative and qualitative methodology, design, evaluation of research, statistical analysis, presentation of data, and ethical considerations. Corequisite: SMED 5101

SMED 5312 - Research Methods II

3 sem. hrs. SMED 5312 provides students with an intellectual opportunity to integrate their knowledge of research basics and clinical skills, with a possibility for publication. Prerequisite: SMED 5311 and SMED 5313. Corequisite: SMED 5105.

SMED 5313 - Biological Statistics for Athletic Training

3 sem. hrs. SMED 5313 presents a study of the basic biological statistical concepts and their application to research problems in Athletic Training. Knowledge of biological statistics is imperative as students are required to participate in a case study, critically appraised topic, and/or research project. Students are encouraged to publish thus adding to the body of knowledge within Athletic Training. Topics will include issues related to descriptive and inferential statistics. Prerequisite: SMED 5311. Corequisite: SMED 5102.

SMED 5321 - Lower Extremity Assessment, Evaluation and Management

3 sem. hrs. SMED 5321 provides students with general knowledge of evaluation techniques of athletic injuries to the lower extremities including history taking, observation, palpation, neurologic and orthopedic testing as well as its acute management and documentation. Students will learn to utilize critical thinking skills to evaluate differential diagnosis and analyze the patient's signs and symptoms to defend a clinical diagnosis. Prerequisite: SMED 5341 and SMED 5310. Corequisite: SMED 5200.

SMED 5322 - Upper Extremity Assessment, Evaluation and Management

3 sem. hrs. SMED 5322 provides students with general knowledge of evaluation techniques of athletic injuries to the upper extremities including history taking, observation, palpation, neurologic and orthopedic testing as well as its acute management and documentation. Students will learn to utilize critical thinking skills to evaluate differential diagnosis and analyze the patient's signs and symptoms to defend a clinical diagnosis. Prerequisite: SMED 5321. Corequisite: SMED 5311.

SMED 5323 - Head, Neck & Spine Extremity Assessment, Evaluation and Management

3 sem. hrs. SMED 5323 provides students with general knowledge of evaluation techniques of athletic injuries to the head, neck and spine including history taking, observation, palpation, neurologic and orthopedic testing as well as its acute management and documentation. Students will learn to utilize critical thinking skills to evaluate differential diagnosis and analyze the patient's signs and symptoms to defend a clinical diagnosis. Prerequisite: SMED 5322. Corequisite: SMED 5332.

SMED 5324 - General Medical Conditions in the Athlete

3 sem. hrs. SMED 5324 will provide students with lectures, discussions, and laboratory activities concerning general medical conditions, evaluation techniques, and athletic injuries to internal organs. In addition, inter-professional working relationships with other health and medical professionals and the role of an athletic trainer within the healthcare system will be discussed and explored. Prerequisite: SMED 5323. Corequisite: SMED 5103 and SMED 5333.

SMED 5331 - Therapeutic Intervention I

3 sem. hrs. SMED 5331 provides the student with knowledge of current theory and application of therapeutic modalities used in the treatment of musculoskeletal injuries. Prerequisite: SMED 5200 and SMED 5341. Corequisite: SMED 5101 and SMED 5322.

SMED 5332 - Therapeutic Intervention II

3 sem. hrs. SMED 5332 provides the student with knowledge of current theory and application of therapeutic exercises and manual therapy used in the treatment of musculoskeletal injuries. Prerequisite: SMED 5323 and SMED 5331. Corequisite: SMED 5102.

SMED 5333 - Pharmacology for the Athlete

3 sem. hrs. SMED 5333 will include lectures and discussion of selected sports medicine topics focusing on pharmacology in athletics and activity. Students will examine different classes of medication and their impact on sports and exercise. In addition, inter-professional working relationships with other health and medical professionals and the role of an athletic trainer within the healthcare system will be discussed and explored. Written assignments are designed to provide the student with an opportunity to demonstrate their library research and written communication skills. Prerequisite: SMED 5332. Corequisite: SMED 5324.

SMED 5334 - Emerging Practices in Athletic Training

3 sem. hrs. SMED 5334 provides students with creative, flexible and innovative learning experiences on key emerging concepts and techniques that are newly arising within the field of Athletic Training. Content and instruction will examine new technology in the field, emerging theories, legal/ethical challenges and changes, as well as other evolving issues within the profession of athletic training. Prerequisite: SMED 5333. Corequisite: SMED 5104 and SMED 5342.

SMED 5335 - Athletic Training Seminar

3 sem. hrs. SMED 5335 provides students with an organized study session to prepare students to be eligible to sit for the Board of Certification (BOC) national examination. This course is in line with the 6th Role Delineation Study from the BOC. Prerequisite: SMED 5343. Corequisite: SMED 5105.

SMED 5341 - Law & Ethics in Athletic Training

3 sem. hrs. SMED 5341 provides students with knowledge concerning the legal and ethical issues associated with the practice of athletic training and other health care fields. This course examines the legal principles including negligence, tort, and liability as well as other issues concerning those practicing athletic training. In addition, this course will examine moral and ethical issues in the field which may or may not align with the legal issues in the field. This course is designed to engage students in critical thinking and to challenge them to begin to think about their lives from a legal and ethical perspective. Corequisite: SMED 5310

SMED 5342 - Sports Psychology in Athletic Training

3 sem. hrs. SMED 5342 includes aspects of psychology for understanding and explaining behaviors in the context of exercise and sport. Discussions of identifying high-risk individuals, counseling and referring individuals for help are emphasized. This course will also examine the relationships between psychological factors and human physical activity while obtaining peak performance. Evaluating published research, particularly theory and research methodology practices will be required. Motivational interviewing and behavioral change theory will be briefly discussed. Corequisite: SMED 5334

SMED 5343 - Administration, Leadership, & Professional Development in Athletic Training

3 sem. hrs. SMED 5343 provides the general knowledge and application of athletic training administration including facility design, insurance claims, liability issues, and

injury and treatment records. This course is designed to engage students in critical thinking and to challenge them to begin to think about their lives from a professional leadership perspective. This course is in line with the 5th Role Delineation Study from the BOC. Prerequisite: SMED 5333. Corequisite: SMED 5104.

Theatre

THEA 5370 - Seminar in Theatre

3 sem. hrs. Selected topics that investigate the history, theory, and production of draMA including Dramatic Criticism, Technical Theatre, Directing Problems, and Theatre History. May be repeated when topics vary.

THEA 5371 - Styles of Acting

3 sem. hrs. Intensive exploration of various performance styles for the actor from the Classical to Contemporary Periods. Prerequisite: THEA 3375 or equivalent.

THEA 5372 - Stage Direction

3 sem. hrs. Intensive study and practice in the principles of stage direction including stage movement, script analysis, theatre aesthetics, and audience analysis. Prerequisite: THEA 4360 or equivalent.

THEA 5384 - 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, direct 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 and department chair in advance of registration. As part of the application process the number of credit hours will be determined by the instructor. May be repeated twice for credit.

THEA 5396 - Individual Study

3 sem. hrs. Individual study, reading or research with faculty direction and evaluation. Credit for this course is limited to 6 hours in any degree plan. Offered on application to and approval of the program coordinator.