Undergraduate and Graduate Courses in
Alphabetical Order by Course Name.
This includes the course description only. Please refer to the catalog for additional course details as it pertains to your program.

ACCOUNTING (ACC)
ADMINISTRATIVE SYSTEMS AND TECHNOLOGY (AST)
AGRICULTURAL BUSINESS (AGB)
ANIMAL SCIENCE (ANSC)
ANTHROPOLOGY (ANTH)
ART (ART)
ASTRONOMY (ASTR)
BIOLOGY (BIOL)
CHEMISTRY (CHEM)
COMMUNICATION (COMM)
COMPUTER INFORMATION SYSTEMS (CIS)
COMPUTER SCIENCE (CS)
COMPUTER SCIENCE ART TECHNOLOGY (CSAT)
COMPUTER SCIENCE CYBER SECURITY (CSST)
CRIMINAL JUSTICE (CJ)
DEVELOPMENTAL EDUCATION
ECONOMICS (ECO)
EDUCATION (ED)
  EDUCATION (ED)
  EDUCATION CERTIFICATION (ED)
  SPECIALIZATION (ED)
ENGLISH (ENG)
FINANCE (FIN)
FINE ARTS (FA)
FRENCH (FREN)
FRESHMAN LEADERSHIP PROGRAM
GENERAL BUSINESS ADMINISTRATION (GBA)
GENERAL STUDIES (GS)
GEOGRAPHY (GEOG)
GEOLOGY (GEOL)
HISTORY (HIST)
HONORS PROGRAM (HONS)
INDUSTRIAL TECHNOLOGY (IT)
JOURNALISM (JOUR)
KINESIOLOGY (KES)
LIBERAL ARTS (LA)
MANAGEMENT (MGT)
MARKETING (MKT)
MATHEMATICS (MATH)
MEXICAN AMERICAN STUDIES (MAS)
MUSIC (MUS)
NATURAL RESOURCE MANAGEMENT (NRM)
PHILOSOPHY (PHIL)
PHYSICAL EDUCATION (PE)
PHYSICAL SCIENCE (PHSC)
PHYSICS (PHYS)
POLITICAL SCIENCE (PS)
PSYCHOLOGY (PSY)
SAFETY EDUCATION (SED)
SOCIOLOGY (SOCI)
SPANISH (SPAN)
SRSU FIRST YEAR SEMINAR (SRSU)
THEATRE (THEA)
VOCATIONAL NURSING (VNSG)
WOMEN'S STUDIES (WS)

Texas Common Course Numbering System
The prefix and numbers in parentheses immediately after the Sul Ross course prefix and number represent the course equivalent in the Texas Common Course Numbering System.

Course Numbering System
The four-digit numbering system is based on the following criteria: The level of the courses is identified by the first digit as follows: freshman, 1; sophomore, 2; junior, 3; senior, 4; and graduate, 5-7. The semester credit hour is identified by the second digit. University and/or departmental codes are identified by the last two digits.

Course titles in the academic programs section of this catalog are followed by two numbers in parentheses. The first number refers to the number of lecture contact hours per week; the second refers to the number of laboratory contact hours per week. For example, (3-2) indicates three contact hours of lecture and two contact hours of laboratory each week.

Lecture contact hours are the hours per week students are required to spend in contact with faculty in a lecture setting, e.g., class, conference, seminar, individual instruction, private lesson, thesis or dissertation discussion, or independent study. Laboratory contact hours are the number of hours per week that students are required to spend in contact with faculty in an experiential situation, e.g., laboratory clinical, practicum, internship, or student teaching.

ACCOUNTING (ACC)
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2301 (ACCT 2301) Principles of Accounting I (3-0). Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporations.

2302 (ACCT 2302) Principles of Accounting II (3-0). Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporation. Introduction to cost behavior, budgeting, responsibility accounting, cost control, and production costing. Prerequisite: ACC 2301

3330 Intermediate Accounting I (3-0). Concepts, principles, and practices of accounting with emphasis on determination of income and financial position of business corporations. Prerequisites: ACC 2301 and ACC 2302
3331 Intermediate Accounting II (3-0). Continuation of Intermediate Accounting I. Prerequisite: ACC 3330

3332 Cost Accounting (3-0). Cost accounting fundamentals, product costing, planning and control; job order and process costing, budgeting, standard cost, profit-cost volume relationships, and inventory control. Prerequisite: ACC 2302

3333 Accounting for Managers (3-0). This course provides an integrated approach to accounting. Concepts and issues in all functional areas of accounting are presented. Topics include budget and cost control, accounting data in planning, and policy formulation. Prerequisite: ACC 2302.

4330 Principles of Taxation (3-0). Principles of taxation with emphasis upon federal income tax as it applies to individuals. Prerequisite: ACC 2302

4332 Advanced Accounting (3-0). Complex financial accounting problems, including consolidated statements, not-for-profit accounting, partnerships and multinational accounting. (Various) Prerequisite: ACC 3331

4333 Auditing Principles (3-0). Principles and problems of auditing financial records with emphasis on procedures; working papers; reports; and the duties and responsibilities of the junior and senior accountants in audits. Prerequisite: ACC 3331.

4334 Computer Application in Accounting and Auditing (3-0). Use of the computer in the processing of business transactions, analysis of accounting information and in auditing. (Various) Prerequisites: ACC 3331 and 4333

4336 Business and Professional Ethics (3-0). This course explores business ethical issues and ethical decision-making for the accounting professional. It examines a guidance system, rules, ethical expectations, and ethical pitfalls of the accounting professional.

4350 Advanced Readings and Research in Accounting (3-0). Selected seminar topics in accounting. Prerequisites: ACC 3330, ACC 3331.

5307 Accounting for Management (3-0). Topics include budget and cost control, accounting data in planning, and policy formulation.

**ADMINISTRATIVE SYSTEMS AND TECHNOLOGY (AST)**

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1101 Personal Financial Literacy (1-0). The topics to be covered will include, but are not limited to, budgeting, managing debt and credit, saving and investing, preventing identity theft, and retirement planning.

1305 (BCIS 1305) Business Computer Applications (3-1). Computer technology, hardware, software, operating systems, and information systems relating to the business environment. The main focus of this course is on business applications of software, including word processing, spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. (WECM: POFI 1301)

1383 Word Processing Production & Advanced Keyboarding (3-0). Word processing software features are covered throughout the course. Creating and editing correspondence, reports, merging, and graphics allow students to complete word processing projects. Students will use keyboarding software to improve keyboarding skills. E-mail and Internet are used. Prerequisite: AST1382 or demonstrated keyboarding skill. (WECM: POFI 2401 or POFT 2401)

2311 Independent Study in AST (3-0). Independent study and research on a designated topic. May be repeated for credit.

2331 Desktop Publishing (3-0). The design and development of printed documents such as brochures, newsletters, forms, and more will be covered. Students will integrate technology generated graphics and animations to create electronic documents. Industry-standard software will be used.

2380 Administrative Procedures (3-0). Emphasis is placed on administrative procedures, including records management, reprographics, personal finance, and priority setting. Improvement of productivity through the use of office tools, software, and procedures is covered. (WECM: POFT 1309 or POFT 1409)

2381 Legal & Medical Administrative Systems (3-0). Procedures and application of skills needed in the legal and medical office are covered. Terminology, office management principles, and software relevant to the legal and medical office are studied.

3311 Independent Study in AST (3-0). Independent study and research on a designated topic. May be repeated for credit.

3380 Administrative Support Supervision (3-0). Planning and implementation strategies for administrative support development are covered. Topics include supervision of administrative support personnel and management of the workplace. Ergonomics and technology issues are stressed. Students research and report on course-related information related to major business industry, government, and educational entities.

3381 Social Media Concepts & Applications (3-0). Students will apply the concepts of social media, including blogs, podcasts, wikis, RSS feeds, voice recognition, and social networking to business, academic, and personal needs. Students will evaluate, create, and participate in social media applications.
3383 Multimedia Applications (3-0). Principles of multimedia design and production using industry-standard photo editing software tools and equipment are used to create media for interactive training and instruction.

3384 Practicum and Internship in AST (3-0). Students apply knowledge & training in an actual work environment, completing approximately 120 clock hours in a business setting. Workplace supervisors and the instructor evaluate student performance on the job. Prerequisites: Permission of instructor or completion of minimum 12 SCH in business technology or business administration courses.

3385 Training & Development (3-0). Techniques for the design and implementation of professional and staff development programs in any industry or educational environment are covered. Emphasis is placed on developing interactive methods of training, including the use of games and technology. Teacher certification students will learn techniques for teaching business and work-based education courses.

4350 Special Topics in AST (3-0). This course will be offered covering a variety of current topics related to administrative systems and business technology. This course may be repeated for credit.

AGRICULTURAL BUSINESS (AGB)

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2302 Agricultural Economics (3-0). Orientation to the application of economic theory to agribusiness management. Microeconomic principles pertaining to the production and marketing of agricultural products. Offered fall, even years.

3302 Agricultural Marketing (3-2). An overview of the nature and structure of agricultural product markets in the U.S.; agricultural product prices, price determination and price discovery processes; use of commodity futures as a marketing tool. Offered spring, even years.

3304 Range Use Economics (3-0). This course covers all facets of the economics of rangeland management, including grazing management, supplemental feeding and other inputs, balancing multiple species use, and calculating the benefits of range improvement and opportunity costs associated with rangeland use.

3310 Special Topics (3-0). Selected topics in the field of agricultural business. Topics selected according to student interest and need. May be repeated as topics vary.

4301 Sustainability & Diversity in Ranch Business (3-0). This course introduces and develops the idea of sustainability and diversity within the framework of a ranching business. Emphasis will be placed on how sustainability practices and diversity within business can mediate market risks and increase overall income and long term rangeland and economic health.

4303 Agri-Business Management (3-0). Agriculture production as a business. Types of legal organization for farms and ranches, as well as businesses involved in the processing, wholesaling, and retailing of agricultural products. Principles of business management applied to the agri-business with emphasis on factors affecting profits, choice of enterprises, and the efficient use natural, financial and human resources. Offered spring, even years.

4308 Natural Resource and Environmental Economics (3-0). Topics covered will include: an overview of the modern environmental movement, economic impacts of law and regulation including planning, zoning and farm policy, the economics of pollution and recycling, private property and free market conservation with an emphasis on the economic impacts and influences on farm, ranch, and agribusiness decision making processes. Offered spring, odd years.

4311 Problems in Agricultural Business (3-0). Individualized instruction in all facets of agricultural business. This course is developed to meet specific needs of individual students. May be repeated with approval of NRM chair.

4315 Farm and Ranch Records and Accounting (3-0). A review of the principles of accounting as they apply to the modern farm or ranch. Fundamentals of cost and managerial accounting applied directly to agricultural production at the farm and ranch level: product costing, planning, control, standards and budgeting, and profit-cost volume relationships. This course will emphasize the use and applications of spreadsheets programs. Offered fall, odd years. Prerequisite: ACC 2301.

4316 International Development of Agriculture (3-0). Degradation of the environment, explosive population growth, poverty, hunger, and the associated political unrest continuously threaten world peace. These are perhaps the most critical problems of today as well as the foreseeable future. This course is an interdisciplinary approach to the role of agricultural development in solving these problems within the economic growth process. It focuses on neoclassical economic theory but stresses the importance of modifying that theory to fit the specific regional/cultural situation.

ANIMAL SCIENCE (ANSC)

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1101 Freshman Seminar (1-0). Seminar course designed to introduce students to faculty, facilities, and programs in ANRS and introduce students to study skills essential to a successful career. Offered fall and spring.

1419 (AGRI 1419) Introductory Animal Science (3-2). An introductory survey course. Farm animals as a source of food, clothing, labor; the place of livestock in farming; the place of the United States and Texas in the livestock industry, heredity, the
basis for improvement; selecting and judging and its importance; the place and advantage of each type of livestock, showing classification; classification of the breeds and market types of horses, beef cattle, hogs, sheep, and goats. Offered fall and spring.

2301 Exotic Game Animal Management (3-0). This course introduces and overviews the many facets of the exotic game ranch industry. Beginning with the history of exotic wildlife industry in the United States, this introductory course will discuss the exotic wildlife’s current career opportunities; its development, and its current economic impact. Students will gain familiarity with the different breeds of non-indigenous game animals and their husbandry. Leaders from within the exotic industry will speak on these topics.

2302 Exotic Game Animal Management II (2-2). This course will introduce and expand on health needs of exotic game and wildlife. Information about diseases and syndromes affecting exotic an indigenous wildlife species will be taught by a member of the veterinary community. Special focus will highlight zoonotic diseases, regulated diseases and preventable diseases. Instruction will utilize lab procedures including field necropsy and immunization and treatment techniques. Additionally familiarity with the regulations and provisions in the regards to animal health and the movement of animals will be taught in this course.

2303 Horsemanship I (1-4). Students will learn the inherited behaviors, learned behaviors and psychological aspects of behavior modifications used in training horses. Emphasis will be placed on equine handling, grooming, basic training techniques, riding equipment, and safety. Students will learn how to perform basic ground work and basic riding maneuvers on an assigned school or personal project horse. Fall odd years.

2304 Agricultural Education in Secondary Schools (3-0). An analysis of evolving concepts and philosophies of agricultural education programs with emphasis upon history, legislation, and principles underlying organization and practice.

2305 Meat Animal and Carcass Evaluation (2-2). Evaluation of carcasses and wholesale cuts of beef, pork and lamb, factors influencing grades, yields and values in cattle, sheep, and swine. Offered fall.

2308 Horsemanship II (1-4). Emphasis will be placed on application of actual training young horses and teaching advanced maneuvers to older horses. Students will learn how to utilize advanced training practices and applications to enhance the training and performance of horses.

2310 Anatomy and Physiology of Domestic Animals (3-0). An introduction to basic anatomy and physiology, focusing on domestic animals. Topics will range from cell biology through organ systems and include both anatomy and physiology within the systems and total body interaction. Prerequisite: ANSC 1419

2311 Problems in Animal Science (3-0). Individualized instruction in all facets of Animal Science. Course development to meet specific needs of individual students. May be repeated with approval of ANSC Chair. Offered all semesters.

2312 Current Issues in Agriculture (3-0). This course is designed to educate students about major issues in agriculture, life sciences, and natural resource sciences and to expose students to a variety of methods used to effectively communicate, inform, and influence decisions about these issues.

2313 Principles of Agricultural Leadership (3-0). A study in basic vocational education including the following essential elements including concepts and skills relating to self-awareness, academics to vocational education, study habits, productive work habits, attitudes and employability skills, consumer management, occupational awareness and career decision making and associated with diverse human relations and personality development. Vocational Education history and parliamentary procedure will also be included.

2315 Equine Exercise Physiology (3-0). In-depth study focusing on the physiological changes that occur in the respiratory, cardiovascular and muscle-skeletal system in the exercising horse. Special emphasis will be placed on conditioning the performance horse. Prerequisite: ANSC 1419

2401 Advanced Farrier Training (3-2). Advanced course in Equine Footcare including: contemporary aspects of hot forging handmade shoes for all uses. It will include contemporary and evolving technologies in shoe and tool making.

3201 Advanced Live Animal Evaluation (1-2). Characteristics of the different types of livestock; methods used and procedure followed in competitive judging; recommended procedure in selecting animals for purchase; methods used in score card judging, giving oral reasons for the placing of animals judged in classes; coaching livestock judging teams. Prerequisite: ANSC 2201 or permission of instructor.

3301 Clinical Pathology (2-2). Routine clinical examination and basic fundamentals of blood analysis, blood chemistry, urinalysis. Included in this course will be a review of the principles and practices of blood sampling, total and different counts, coagulation, sedimentation, and hemoglobin determination. Offered fall. Prerequisite: Chemistry 1311/1111.

3302 Swine Production and Management (2-2). The course will include study and research in approved production practices for swine. Breeding, feeding, and management will constitute the body of the course with practical phases applied through laboratory experiences. Offered alternate odd years, spring only.

3304 Wildgame Hospitality, Conservation and Ethics (2-2). This course includes introduction to the different aspects of the
hospitality component of game ranches and agritourism facilities. The different types of exotic animal conservation efforts are reviewed in addition to the current topics affecting these industries.

3305 Horse Production and Management (3-0). Introduction to the various careers and economics associated with the equine industry. The course will focus on basic equine care and use, breeds, identification methods, horse selection, and diseases and disease control. Offered fall even years, alternate with ANSC 2302.

3306 Exotic Game Animal Behavior (2-2). This course will cover capture, handling and restraint of exotic game animals. Behavior of different species will be emphasized in regards to their handling. Capture techniques involving traps, nets and chemical immobilization will be taught and demonstrated in the laboratory portion of this course, both in the classroom and out in the field. An overview of the confined deer breeding industry will be presented including pen design, handling, herd health and working facilities. Field trips to several game ranches will be incorporated into the semester including instruction from veterinarians specializing in immobilization and treatment of exotic game species.

3308 Agricultural Statistics (3-0). Major emphasis is placed upon design, analysis and interpretation of agricultural and biological experimental data. Information presented in this course will include statistical concepts and models, simple tests of significance, analysis of variance, mean separation procedures, and linear regression-correlation analysis. Offered fall and spring. Prerequisite: Math 1314, 1332, 1342 or permission of instructor.

3309 Sheep and Goat Production and Management (2-2). This course will include study of accepted practices in sheep and goat production and management. To be included are: breeding, feeding, and management. Laboratory exercises will be an important portion of the course. Offered alternate years; offered spring only.

3310 Special Topics (3-0). Selected topics in the field of Animal Science. Topic selected according to student interest and need. May be repeated as topics vary. Offered all semesters.

3315 Behavior and Management of Domestic Animals (3-0). An in-depth study into the basic components of animal behavior and how these principles apply to the management of domestic livestock. Special emphasis will be placed on facility design, handling techniques, stress, training and current animal welfare and ethics issues.

3316 Feed Manufacturing and Formulation (3-0). This course is designed to survey and provide a thorough understanding of the feeds and nutrients, their classifications and how livestock species digest absorb feed ingredients. Livestock species will be discussed individually and how their rations vary and how they are formulated. Both computer and hand formulation will be practiced. Prerequisite: ANSC 1419

3317 Livestock and Wildlife Nutrition (3-0). This course is designed to survey and provide an introductory understanding of livestock and wildlife nutrition. Nutrient classes and their structure and metabolism will be discussed as well as an overview of gastrointestinal anatomy and function between species. Prerequisite: ANSC 1419

3318 Teaching Methods in Agricultural Education (3-0). Instructional methodology course that focuses on the selection and use of teaching strategies, methods/approaches, and techniques; evaluating learning; and managing learning environments for teaching agricultural subjects in formal educational settings.

3319 Program Planning in Agricultural Education (3-0). Principles and practices used in designing courses of instruction for effective teaching and total program development.

3320 Teaching in Agricultural Lab Settings (3-0). This course is designed to introduce pre-service agricultural education teachers to laboratory integration into the agricultural education curriculum at the secondary level. Emphasis will be placed on skill acquisition, developing knowledge of laboratory components in agriscience, laboratory utilization, facilitating student learning in the laboratory setting, appropriate teaching methods and techniques, curriculum applications, and classroom resources. Course content will be presented during the semester-long course and travel to off-campus sites will be required.

3402 Beef Cattle Production and Management (3-2). The course will be divided into the areas of history, breeding, feeding, and management of beef cattle. Range laboratory exercises will be an integral part of the course. Offered fall only.

3405 Parasitology (3-2). A study of the biology, morphology, and ecology of parasitic organisms as they relate to various host-parasite relationships and diseases in animals and man. The diagnosis, pathology, treatment and prevention of parasitism will be discussed. Post mortem examinations and treatment of animals will be performed in lab as available. Prerequisite: General Zoology or equivalent.

3407 Sausage Manufacturing (3-2). The manufacturing of processed meats. Product formulation, curing, smoking, sanitation, and quality control. Offered spring.

3411 Livestock Slaughter Inspection (3-2). The content of this course deals with federal and state regulations pertaining to livestock slaughter for human consumption. Laboratory training will be given to promote proficiency in meat inspection procedure. Offered alternate years; offered spring only.

4300 Meat Technology (2-2). The basic characteristics of meat and products as they relate to quality are stressed. Product identification, economy, nutritive value, preservation, and utilization are studied. Offered spring only, alternate (even) years.
4302 Management Procedures in the Meat Industry (2-2). An in-depth study of business management practices conducted in the Meat Industry. The computer-based course will focus on specialized aspects of the business. Ethics and acceptable business practices will also be reviewed.

4304 Reproductive Physiology (2-2). Study of anatomical and physiological process of reproduction in domestic animals and wildlife. Offered fall.

4305 Agricultural Genetics (3-0). Quantitative genetic principles applied to mating and selection of domestic livestock, wildlife, and range plants. The course integrates Mendelian principles with biomedical and statistical probability techniques for proper application to breeding, selection, inbreeding, line breeding, and pedigree information for progressive animal and plant breeding. The influences of gene frequency, heritability, and genetic relationships on the gene pool of populations is integrated into this course. The course includes application of the Hardy-Weinberg law and statistical correlation and regression as applied to selection of superior genetic lines of plants and animals. Offered fall only.

4306 The Control of Domestic and Wildlife Diseases (2-2). Management as related to the control of animal diseases; sanitation and its importance in disease prevention; diseases prevented by vaccination; practical means of diagnosing diseases and ailments; treatment of affected animals. Offered alternate years, fall only. Prerequisite: Biology 2406 or permission of instructor.

4307 Reproductive Techniques (2-2). Evaluation and application of various techniques to control and determine reproductive functions in livestock. Techniques covered will include semen collection and freezing, in vitro fertilization, embryo freezing and transfer; palpation; and ultrasonography.

4310 Artificial Insemination of Farm Animals (2-2). History, importance and implications of artificial insemination; advantages and limitations of its use in farm animals. Various methods of collection are studied; evaluation of semen, dilution and storage of semen and techniques of insemination are covered. Offered summer only.

4311 Problems in Range Animal Science (3-0). Individualized instruction in all facets of Animal Science. Course developed to meet specific needs of individual students. May be repeated with approval of ANSC Chair. Offered all semesters. Prerequisite: Approval of ANSC chair.

4314 Andrology (3-0). Study of male reproductive biology, diseases of the male genital organs, and male infertility. Special emphasis is on endocrinology, spermatogenesis, semen analysis, fertilization, contraception, and cryopreservation.

4315 Endocrinology (3-0). A study of the Physiology and regulation of endocrine secretions. Course emphasizes neuroendocrine, reproductive, growth and metabolic aspects of endocrinology. Examples are selected from livestock and humans.

4316 Embryology (3-0). Study of the development of embryos from conception to birth in livestock species.

5303 Special Topics (3-0). Advanced studies in current agricultural and natural resource sciences research. Topics assigned according to the experience, interest, and needs of the individual student. Registration approval by the ANSC chair. May be repeated under different subject matter titles.

5304 Research (0-6). Advanced studies in current agricultural research in animal production. Problems assigned according to the experience, interest, and needs of the individual student. Registration approval by the ANSC chair. One enrollment required of each non-thesis students for assigned research paper. May be repeated for credit.

5308 Principles of Teaching Adult Learners (3-0). This course covers a broad range of topics in the field of adult education. The purpose is to further the development of adult educators; therefore, the course focuses on theories, methods, and issues in adult education.

5312 Biostatistical Analysis I (2-2). An introduction to statistical concepts and models applied to agricultural and biological systems. The course introduces the scientific method, inferential theory, data types, descriptive statistics, goodness of fit, contingency tables, the normal distribution and one- and two-sample hypothesis testing. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Offered Fall.

5313 Biostatistical Analysis II (2-2). An advanced course in statistical concepts and models applied to agricultural and biological systems. The course will cover experimental designs, paired-sample hypotheses, multivariable hypotheses (ANOVA), multiple comparisons, factorials and nested ANOVA, data transformations, liner regression, and correlation, multiple regression and correlation, polynomial regression and the binomial distribution. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Offered Spring. Prerequisite: ANSC 5312 or permission of instructor.

5314 Advanced Endocrinology (3-0). Structure and function of endocrine glands and how their secretions regulate biochemical reactions, integrate tissue and organ systems, and control behavior.

5315 Advanced Reproductive Techniques (3-0). Detailed study of the various techniques to control and determine reproductive functions in domestic and nondomestic species. Techniques covered will include semen collection, evaluation and freezing; super ovulation, oocyte-embryo collection, in vitro oocyte maturation, sperm capacitation, in vitro fertilization, embryo culture, embryo micromanipulation, embryo freezing and transfer; and ultrasonography.

5316 Project Research (1 to 9-0). Research for thesis project. Prerequisite: Master of Science students that have been admitted
to candidacy. May be repeated.

5317 Implementing Change (3-0). This course examines the processes by which professional change agents influence the introduction, adoption, and diffusion of technological changes.

5320 Animal Industries (3-0). An in-depth study of business management practices conducted in the Animal Industry. This course will focus on specialized business aspects of business in the animal industry.

5321 Animal Science Business Planning (3-0). This course lays out the basic theory of microeconomics with numerous examples from the food and agricultural industries, while the coverage of macroeconomics emphasizes real world applications rather than pure theory.

5322 Statistics for the Animal Sciences (3-0). This course emphasizes statistical literacy, use of real data and technology, statistical conceptual understanding and active learning.

5323 Research Literature (3-0). This course guides the student, step-by-step, from the selection of a problem, through the process of conducting authentic research, to the preparation of completed report, with practical suggestions based on a solid theoretical framework.

5324 Animal Physiology (3-0). Emphasizes animal anatomy, biochemical and biochemistry in the transformation of muscle to meat.

5325 Agricultural Genetics and Biotechnology (3-0). This course provides a student with solid grounding in core genetics and biotechnology concepts, as well as information on cutting-edge science and technology and their applications in real-world agriculture, medicine, and health care.

5326 Animal Reproduction (3-0). Study of the anatomical, cellular and physiological mechanisms that control the endocrine and reproductive systems of domestic animals and wildlife.

5327 Animal Nutrition (3-0). A study of animal nutritive requirements for all classes of livestock; special emphasis on balanced rations from available feed stuffs.

5328 Meat Production (3-0). The course will investigate live animal, meat products, and formulation of recipes for processed meats and sausage products of domestic meat production.

5329 Animal Breeding (3-0). Advanced topics in breeding animal selection using scenario-based techniques and animal data to optimize production systems. Breeding plans of all livestock species including rotational and terminal crosses and the use of crossbreeding advantages of heterosis and breed complementarity. Additionally, heritability estimates and economically important traits will be focused on.

5403 Special Topics (4-0). Advanced studies in current agricultural and natural resource sciences research. Topics assigned according to the experience, interest, and needs of the individual student. Registration approval by the ANSC chair. May be repeated under different subject matter titles.

6301 Thesis Proposal (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the ANRS dean, and filed in the Office of the Executive Vice President and Provost for Academic Affairs.

ANTHROPOLOGY (ANTH)

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1301(ANTH 1301) Cultural Anthropology (3-0). A survey of the study of cultural anthropology, including the nature of culture in space and time, human subsistence and settlement, social and political organization, ritual and religion, and linguistics. The course will include an overview of the adaptations of human populations to arid regions.

1302 (ANTH 1302) Introduction to Archeology (3-0). An introduction to the history, development, techniques, and underlying principles of archeological sciences. The focus of the class is on archeological methodology and theory as practiced within a framework or interdisciplinary research, and as viewed from both scientific and humanistic perspectives.

2301 Archeology of Texas and Northern Mexico (3-0). An introduction to Native American prehistory from 10,000 B.C. through early contact with Spanish entradas during the sixteenth and seventeenth centuries A.D. in Texas and north-central Mexico. The course will explore basic archeological theory, data collection, and analytical techniques used in the reconstruction of life ways of nomadic, semi-sedentary, and sedentary human populations through time.

2302 Environmental and Cultural Diversity (3-0). This course examines the dynamic interplay between environment and culture among prehistoric, historic, and contemporary peoples on a global basis. Ethnographic studies are used to facilitate comparative analysis of cultures in both similar and widely differing environmental settings, from Arctic tundra to shifting sands
of the Sahara. Emphasis is on the study of present-day "simple" societies, and includes evaluation of the use of analogy in reconstructing life ways of extinct cultures.

2303 Readings and Research (3-0). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3301 Laboratory Techniques in Archeology (3-0). Provides practical experience on the conceptualization, design, and conducting of archeological projects, with emphases on techniques of laboratory analysis, data quantification, analogy, and the interpretation of findings.

3601 Summer Archeological Field School (0-6). An intensive six week summer field course that provides hands-on training for students in archeological field and analytical techniques, including site survey and recording, instrument mapping, site testing and evaluation, controlled excavation, and field laboratory techniques: Location to be announced. Prerequisite: Anthropology 2301 or consent of instructor.

4308 Readings and Research in Anthropology (3-0). Selected readings on research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4311 Special Topics in Anthropology (3-0). Special courses on topics not included in the regular curriculum. May be repeated for credit with departmental approval.

ART (ART)

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1301 (ARTS 1301) Art Appreciation (3-0). An introductory course leading to an understanding of the Visual Arts.

1303 (ARTS 1303) Art History I (3-0). A survey of the art and architecture of the Western World from prehistoric times through the Gothic Period.

1304 (ARTS 1304) Art History II (3-0). A survey of the art and architecture of the Western World from the Early Renaissance to the contemporary period. Qualifies for general education credit.

1311 (ARTS 1311) Design I (2-4). An introduction to the fundamentals of two-dimensional design.

1312 (ARTS 1312) Design II (2-4). Three-dimensional design and color theory. (May be taken before Design I)

1316 (ARTS 1316) Drawing I (2-4). An introduction to drawing fundamentals with stress upon observations and techniques involving various drawing media.

1317 (ARTS 1317) Drawing II (2-4). Continuation of drawing skills and techniques as begun in Drawing I (1316) with emphasis on compositional skills. Prerequisite: ART 1316.

2304 Independent Study in Art (2-4). Independent investigation into an art subject area: i.e. in only one area such as painting, drawing, sculpture, design, ceramics, printmaking, jewelry, fibers or art education. May be repeated for different subject areas.

2311 Alternative Methods of Photography (2-4). A survey of nontraditional photographic printing process such as Van Dyke Brown, Cyanotype, Solarization and Texture Screens. Prerequisite: IT 2304.

2313 (ARTS 2313) Design Communications I (2-4). An introduction to the basic processes and techniques of advertising art.

2316 (ARTS 2316) Painting I (2-4). Exploring opaque painting media (oil or acrylic) with emphasis on color and composition.

2323 (ARTS 2323) Life Drawing I (3-2). Advanced drawing class that involves drawing fundamentals in relationship to the human form with stress on observation and human anatomy. May be taken for up to nine hours of credit. Each semester of work is progressively more advanced than the previous semester. Prerequisite: ART 1316.

2326 (ARTS 2326) Sculpture I (2-4). Exploratory studies in the principles, materials, and techniques of sculpture. (ARTS 2326)

2346 (ARTS 2346) Ceramics I (2-4). An introduction to basic ceramic processes, including wheel throwing, hand building, glazing and firing.

2347 (ARTS 2347) Ceramics II (2-4). A further exploration of intermediate ceramic processes, including wheel throwing, glazing and kiln firing. Prerequisite: ART 2346.

2366 (ARTS) Watercolor I (2-4). Exploring transparent painting media (watercolor or tempera) with emphasis on methods and techniques.

3301 Art Studio Concentration (2-4). First level of advanced investigation into a studio art subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. The course may be repeated for credit up to three times in an area of specialization. Student will need to discuss their artistic background with the instructor.

3302 Printmaking (2-4). An introduction to the basic printmaking processes including collaggraphic, intaglio, stencil, and relief.
3303 Art Theory I and Practice for Children (2-2). (Elementary Art Theory). A survey and analysis of the theories and practices of teaching art to children. Topics include artistic development, art programming content, philosophies, methodologies, objectives and assessment.

3306 Seminar in Art (3-0). A discussion of subjects such as resume and portfolio development, art careers, art marketing and sales, and other areas which are of interest and importance to all art students. (Required for art majors—preferably taken in junior year.)

3307 Women in Art (3-0). Art history class tracing the overlooked area of women in art.

3308 Contemporary Art History (3-0). A survey of painting, sculpture, architecture, and other arts from Post-Impressionist to Contemporary Period.

3309 Crafts (2-2). An introduction to art theories and methods governing the teaching of craft activities in the classroom. Required for Art Education majors.

3310 Special Topics (3-0). Topics to be selected from history and literature of art, art in the general culture, techniques of teaching art in the public schools, or other topics in the field of art. (May be repeated for credit when topic varies.)

3312 Rock Art (1-3). Art history class tracing the indigenous art of American Indians in this area.

3313 European Art and Architecture (3-0). A "hands-on" investigation of the artistic and architectural styles and historically significant works of art in European cultures. The course meets the multicultural requirements.

3314 Latin American Art Survey (3-0). A survey of painting, sculpture, architecture and other arts from pre-Columbian times through the present day of Latin America.

3315 Art Theory II and Practice for Adolescents (2-2). A survey of advanced methods related to the understanding of aesthetic achievement in the secondary art programs. This course required for art education majors. The theories and practice of adolescent art learning. Topics include learning environment, artistic development, presentation methodologies, objectives, assessments and other current topics.

3316 Extruded Ceramics (3-3). An exploration to the use of the ceramic extruder as a ceramic design tool. Students will learn to make and use dies to create ceramic extrusions to be used as design elements in finished work. Prerequisite: Ceramics I or permission of the instructor.

3317 Handmade Ceramic Tile (3-3). An exploration in the designing, making and decorating of handmade ceramic tile. Students will design and create tiles using the slab method as well as the hand pressed method to create a body of original tile that can be used In table tops, counter tops or any other tile application. Prerequisite: Ceramics I, Design I or permission of the instructor.

3318 Pinhole Photography (2-4). An introduction to the pinhole photography experience through artistic means. Students will design and build a pinhole camera and create a portfolio of finished pinhole photographs.

3319 Photography: Specific Topics (2-4). A course dealing with topics in the study of photography such as darkroom, techniques, printing processes, and photographic processes. May be repeated when topics vary. Prerequisite: IT 2304.

3320 Ancient and Medieval Art (3-0). A survey of the art and architecture of the Ancient and/or Medieval periods. This course may focus on a particular subject or topic of an Ancient or Medieval art, including but not limited to Ancient Near Eastern, Egyptian, Greco-Roman, Early Christian, Byzantine, Islamic, Romanesque or Gothic Art. May be repeated for credit as the topic varies.

3321 Renaissance Art (3-0). A survey of the art and architecture of the Renaissance. This course may focus on a particular subject or topic of Renaissance Art, including, but not limited to, Early Renaissance, Italian Renaissance and Northern Renaissance Art. May be repeated for credit as the topic varies.

3322 Baroque Art (3-0). A survey of the art and architecture of the Baroque Period. This course may focus on a particular subject or topic of Baroque Art, including, but not limited to Spanish, French, Italian and Dutch Baroque Art. May be repeated for credit as the topic varies.

3323 18th and 19th Century Art (3-0). A survey of the art and architecture of the 18th and 19th centuries. This course may focus on a particular subject or topic of art of the 18th and 19th centuries, including but not limited to, the Rococo, Neoclassicism, the Art of the Academy, Romanticism, French Realism and Impressionism. May be repeated for credit as the topic varies.

3326 Jewelry (1-4). Basic techniques in working with the process for creating jewelry, hollowware, and small sculpture.

4301 Advanced Studio Concentration I (2-4). Advanced studio art specialization in subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. These classes develop formal competence in the technical mastery of materials. Comprehensive compositional and formal skills, expressive characteristics in the visualization of ideas and innovative formal considerations. Prerequisite: ART 3301.
4302 Advanced Studio Concentration II (2-4). Advanced investigation into a studio art subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. These classes develop formal competence in the technical mastery of materials, comprehensive compositional and formal skills, expressive characteristics in the visualization of ideas and innovative formal considerations. A formal proposal for the development of a senior capstone exhibition is developed in this class before the student enters exhibition. The course may be repeated for credit two times in an area of specialization. Prerequisite: ART 4301 and written proposal.

5301 Curriculum Enrichment (1-4). Seminar in the problems unique to university teaching problems. Students meet as a group to do peer review and professional practices and also work independently with a selected instructor in a class specific to their discipline. Prerequisite: must have passed undergraduate class in same area of specialization or permission of instructor.

5303 Individual Research Problems (1-4). Designed for students who are prepared to do research within a visual arts specialization area. The course may be repeated for credit up to four times with number designate for area of specialization. Prerequisites: must have passed upper level undergraduate class in the same area of specialization.

5304 Graduate Art Studio I (2-4). Designed for students who are prepared to do work in any visual arts areas of specialization. The course may be repeated for credit up to four times with letter number designate for area of specialization. Prerequisite: Must have passed upper level class in same area of specialization.

5306 Art History (3-0). Study of the visual arts of the world. The course may be repeated for credit where topic varies.

5307 Contemporary Art History (3-0). A survey of the visual arts of the world with emphasis on the development of architecture, sculpture, painting and the minor arts in the Twentieth Century.

6301 Thesis Proposal (0-6). Satisfactory completion of this class will result in an acceptable proposal for an art research thesis presented to the graduate committee. A student will normally register for this course after the second semester of graduate work in art history. The student should only enroll in this class when the committee members are available to work with them and the library or other research facilities are available for their use.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term when the committee members are available to work with them and the library or other research facilities are available for their use. Satisfactory completion of this course will result in the completed thesis presented to the committee, accepted by the Dean of the College of Arts and Sciences and filed in the office of the Provost and Vice President for Academic and Student Affairs.

**ASTRONOMY (ASTR)**

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1103 (ASTR 1103) Stars and Galaxies Laboratory (0-2). Laboratory includes instruction in the university planetarium as well as telescopic observations.

1104 (ASTR 1104) Solar System Laboratory (0-2). Laboratory includes observations of the night sky and solar objects with various university telescope systems.

1303 (ASTR 1303) Stars and Galaxies (3-0). A descriptive, non-mathematical course that deals mainly with stellar and galactic astronomy, but begins with a brief survey of the solar system. Emphasis is on the study of properties of stars, star clusters, nebulae, interstellar gas and dust, the Milky Way galaxy, and exterior galaxies.

1304 (ASTR 1304) Solar System (3-0). A descriptive, non-mathematical course that deals mainly with the solar system and its components. Emphasis is on the study of the celestial sphere, the history of astronomy, motions in the heavens, and the survey of planets.

**BIOLOGY (BIOL)**

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1101 Freshman Seminar (1-0). Seminar course designed to introduce students to the faculty, facilities, and programs within the Biological, Geological, and Physical Sciences. Course is also intended to introduce students to the essential study skills and techniques needed for a successful career in the sciences.

1111 (BIOL 1111) General Botany Lab (0-2). Laboratory activities will reinforce fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi.

1113 (BIOL 1113) General Zoology Lab (0-2). Laboratory activities will reinforce fundamental biological concepts relevant to animals, including systematics, evolution, structure and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology.

1301 Medical Terminology (3-0). This course is intended to introduce students to the importance of the medical terminology in order to properly use it in a medical environment. This goal will be addressed through an examination of the terminology of the human body, starting with the general terms and then specializing on the various systems of the body, including the integument, muscular, skeletal, cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary. Combined with on-
line resources, students will acquire an understanding of how medical terms should be used, pronounced, and the meaning behind these terms.

1311 (BIOL 1311) General Botany (3-0). A general survey of the plant kingdom which considers the fundamentals of biological facts, laws, and principles as they apply to plants. Structure and functions of the organs of representative plants will be considered.

1313 (BIOL 1313) General Zoology (3-0). A general survey of the animal kingdom which considers the fundamentals of biological facts, laws, and principles as they apply to animals. The structure and functions of the organs and systems of representative animals will be covered.

2100 Independent Study/Research (0-3). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2200 Independent Study/Research (0-6). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2300 Independent Study/Research (0-9). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2320 Special Topics (3-0). A course offering selected topics in biology. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2401 (BIOL 2401) Anatomy and Physiology I (3-2). Study of the structure and function of the integumentary, skeletal, muscular, and nervous systems. Also focuses on basic cellular physiology and how it applies to various systems of the body. This course will involve the dissection of mammalian material. Course is intended for pre-nursing, pre-medical, pre-optometry, pre-veterinary, other pre-health professionals, and biology majors. Prerequisite: General Zoology.

2402 (BIOL 2402) Anatomy and Physiology II (3-2). Study of the structure and function of the cardiovascular, respiratory, and digestive, urinary, immune, endocrine, and reproductive systems. This course will involve the dissection of mammalian material. Course is intended for pre-nursing, pre-medical, pre-optometry, pre-veterinary, other pre-health professionals, and biology majors. Prerequisite: General Zoology and Human Anatomy and Physiology I or by permission of instructor.

2404 (BIOL 2404) Anatomy and Physiology (3-2). Basic structure and function of human systems, including: skeletal, muscular, cardiovascular, respiratory, nervous, digestive, and urinary systems. Laboratory emphasis on anatomy and lecture emphasis on physiology. Recommended for Kinesiology and pre-vocational nursing students. This course will not count toward credit in a Biology major or minor. Prerequisite: General Zoology or permission of instructor.

2405 Plants and People (3-2). A survey of plants and plant products that have major uses in human life. Such uses include food, fiber, medicines, religious sacraments, poisons, stimulants, inebriants, oils, perfumes, dyes, spices, and beverages. Examples from Trans-Pecos Texas will be discussed, including forages, toxic plants and invasive species. Prerequisite: General Botany or equivalent.

2406 (BIOL 2406) Environmental Biology (3-2). An introduction to the biological effect of the human activities on the environment. This course emphasizes water, soil, and air pollution as well as other current ecological concerns. The course serves as one of the introductory courses in environmental science. The laboratory will focus on the EPA Standards Method used in field and laboratory analysis of environmental samples. Prerequisite: Consent of instructor.

2420 Special Topics with Laboratory (3-2). This is a course offering selected topics in biology with laboratory. It may be repeated if topic varies. Prerequisite: General Botany or General Zoology or permission of instructor.

2421 (BIOL 2421) Microbiology for Science Majors (3-2). Principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. Laboratory activities will reinforce principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment. This course is designed for biology majors and minors, pre-nursing, pre-dental, and pre-veterinary students. Prerequisite: Chemistry 1311 and 1111, either Biology 1311 and 1111 or Biology 1313 and 1113.


3302 Unseen Life on Earth (3-0). A lecture course examining microbial functions and how microorganisms affect everything from medicine to environmental issues to global politics. Students gain an enhanced appreciation of the field of microbiology by studying the work of scientists and other experts in the field. Prerequisite: General Botany or General Zoology.

3303 Sciences in Cinema and Television (3-0). A lecture course examining the scientific content or lack thereof in classic and current films. Films with a scientific theme will be viewed and the merits of the scientific content will be discussed. Students will gain an understanding and appreciation of how science is portrayed to the viewing public by the film and television industries and
can be used as a persuasive tool for political maneuvering. Prerequisite: General Botany or General Zoology.

3305 Women in Science (3-0). Explores the roles and contributions that past and present women have made within the sciences, including: chemistry, earth and physical sciences, biology, and natural resource management.

3306 Genetics (3-0). A comprehensive introduction to four main areas of modern genetics: Mendelian genetics, cytogeneration, molecular genetics, and population genetics. The historical and philosophical basis for these areas will be dealt with using plant and animal studies. Prerequisite: General Botany or General Zoology or equivalent.

3307 Animal Behavior (3-0). The study of feeding, defense, animal orientation, instinctive behavior, learning, communication, social, and sexual behavior with emphasis on evolutionary and ecological relationships. Prerequisite: General Zoology or equivalent.

3403 Parasitology (3-2). A study of the biology, morphology, and ecology of parasitic organisms as they relate to various host-parasite relationships and diseases in animals and man. The diagnosis, pathology, treatment and prevention of parasitism will be discussed. Post mortem examinations and treatment of animals will be performed in labs as available. Prerequisite: General Zoology or equivalent.

3405 Agrostology (3-2). The classification, phylogeny, natural history, and literature of the important range grasses of the Trans-Pecos region of Texas. Collection and field trips. Prerequisite: General Botany or equivalent.

3408 Invertebrate Zoology (3-2). The study of the life history, morphology, taxonomy, phylogeny, and ecology of invertebrate organisms. Prerequisite: General Zoology or equivalent.

3601 General Entomology (4-4). A comprehensive introduction to the field of entomology, including functional anatomy, physiology, behavior, ecology, and control of insects. Laboratory section emphasizes taxonomy. Collection of insects is required. Prerequisites: General Zoology or equivalent.

3602 Plant Taxonomy (4-4). The taxonomic study of vascular plants, emphasizing the flowering plants of Trans-Pecos Texas. Included are traditional aspects of plant classification, phylogeny, herbarium techniques, collections, and field trips. Usually offered only in summer. Prerequisite: General Botany or equivalent.

4101 Biology Senior Review (1-0). Pertinent topics in biology. Required for all majors and in order to be eligible for teaching certification. To be taken during last long semester before graduation. Prerequisite: Completion of, or current enrollment in, all required departmental courses (e.g., Genetics and Cell Biology).

4102 Individual Studies (1-0). Individual study of selected topics in biological literature or field biology.

4202 Individual Studies (2-0). Individual study of selected topics in biological literature or field biology.

4300 Individual Studies (3-0). Independent study of selected topics in Biology.

4301 Cell Biology (3-0). A study of the particulate morphology and basic physiology of the cell and cell organelles, including basic facts, concepts, and problems in modern cellular biology. Prerequisite: General Botany and General Zoology or equivalent.

4302 Recreational Diseases (3-0). A lecture course examining the infections and infectious agents we may contact in leisure activities during exposure to vacation climates, pets, recreational activities, and exotic cuisine. Prerequisite: Introduction to Microbiology or permission of instructor.

4305 Special Topics (3-0). A course dealing with selected and timely topics in biology such as Animal Physiology, Co-evolution, Aquatic Plants, or many other potential subjects. May be repeated when topic varies. Prerequisite: General Botany and General Zoology or equivalent.

4307 Capstone Research (3-0). A capstone research project – undergraduate thesis designed to culminate the undergraduate experience in the Biology program. Course is designed to have students coordinate research activities with a mentor, conduct a study, write up results in a publishable format according to the appropriate discipline, and present findings to a scientific audience. Prerequisite, if any: Biology major of Junior or Senior classification.

4401 Molecular Biotechnology (2-4). Molecular biotechnology applies the principles of recombinant DNA technology (genetic engineering, gene cloning) to the development of agricultural and commercial products. The methods of recombinant DNA technology, molecular diagnostic systems, cloning and development of genetically modified organisms (GMO) will be discussed. Ethical issues surrounding these techniques will be addressed. Animal, plant, bacteria, and examples will be discussed. Laboratory will focus on DNA purification virus techniques, gene cloning and amplification, and DNA analysis using RFLP and PCR techniques. Prerequisite: Microbiology and General Chemistry.

4402 Ichthyology (3-2). The systematic, phylogeny, natural history, and economic importance of the fishes of the world with emphasis on those found in the fresh and salt waters of Texas. This course also serves as an introduction to Vertebrate Zoology. Prerequisite: General Zoology or equivalent.

4403 Herpetology (3-2). The systematic, natural history, and phylogeny of the amphibians and reptiles with emphasis on those found in the American Southwest. Prerequisite: General Zoology or equivalent.
4404 Ornithology (3-2). The systematic, phylogeny, natural history and field study of birds with emphasis on those found in the Trans-Pecos region of Texas. Prerequisite: General Zoology or equivalent.

4405 Plant Physiology (3-2). The study of the life processes of plants and the physical and chemical phenomena of plant cells, and their relationship to the environment. Studies of photosynthesis, transportation, translocation, nitrogen fixation, and hormones will be included with emphasis on vascular plants. Prerequisite: General Botany.

4406 Principles of Ecology (3-2). A study of the interrelationships of plants and animals with the environment. To include, but not limited to, energy flow, community and ecosystem development, ecological classification, nutrient cycling, sampling and censusing techniques, limiting factors, predator-prey relationships, and aspects of speciation. Prerequisite: General Botany or General Zoology or equivalent.

4408 Morphology of the Vascular Plants (3-2). The study of the vascular plants, including life cycles, life histories, and consideration of evolutionary trends. Field trip. Prerequisite: General Botany or equivalent.

4409 Mammalogy (3-2). The systematic, natural history, phylogeny, and economic relations of mammals of the world with particular emphasis on mammals native to the Trans-Pecos region of Texas. Museum technique and field work will be stressed. Prerequisite: 12 hours in Biology, including General Zoology or equivalent.

4410 Medical and Veterinary Entomology (3-2). A comprehensive introduction to the insects and other arthropods of medical and veterinary importance. Lectures emphasize life-cycles, transmission of disease, and control practices. Laboratory studies emphasize taxonomy and techniques. Prerequisite: General Zoology or General Entomology or equivalent.

4411 Microbial Ecology (3-2). A study of the ecological roles of microorganisms. Examples from freshwater, marine, terrestrial and other ecosystems will be used to illustrate the activities and importance of microorganisms in these habitats. Prerequisite: Introduction to Microbiology recommended.

4412 Medical/Veterinary Microbiology (3-2). A comprehensive introduction to the microbiology of pathogenic organisms in the medical and veterinary microbiology, the immune response and pathogenesis, principles of laboratory diagnosis, bacteriology, virology, mycology, and parasitology. Laboratory will focus on specimen collection and diagnostic methods. Prerequisite: Introduction to Microbiology or consent of instructor.

4413 Collections Management (3-2). Learn the techniques and skills required to operate, curate, and manage a variety of biological collections. This will include proper handling, preservation, organization, and accessioning techniques for both zoological and botanical materials. The legal side of collection maintenance will be covered, in addition to practical applications of museums in research. Prerequisite: General Botany or General Zoology.

4420 Special Topics with Laboratory (3-2). A course offering selected topics in biology with laboratory. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or by permission of instructor.

4601 Desert Ecology (4-4). A course dealing with the biology of North American deserts, primarily the Chihuahuan Desert. Offered in summer session, several field trips including multi-day. Prerequisite: General Botany and General Zoology or permission of instructor.

4607 Special Topics Field Studies (4-4). A course offering selected topics in Biology that consist of field work. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or by permission of the instructor.

5100 Individual Studies (1-0). Independent study of selected topics in biology.

5101 Graduate Seminar (1-0). Discussion of pertinent topics in biology, with emphasis changing depending upon instructor.

5200 Individual Studies (2-0). Independent study of selected topics in biology.

5301 Cacti and Succulents of the Southwest (2-2). A study of the life cycles, life histories, and environment with special attention to survival and adaptation of the cacti and succulents of the Southwest and in particular those in the Trans-Pecos region.

5302 Molecular Techniques (1-4). Primarily a laboratory course designed to provide skills in the purification, amplification, restriction endonuclease analysis, and sequencing of DNA. Prerequisite: Concurrent enrollment in Biology 5315.

5305 Techniques of Scientific Research (3-0). Style and format in manuscript, proposal and thesis preparation. Materials and methods of scientific investigation and science education. Orientation to graduate level and professional studies. Required in first semester or at first opportunity thereafter.

5307 Special Topics (3-0). A course dealing with selected and timely topics in biology. May be repeated when topic varies.

5310 Applied Entomology (3-0). Introduction to principles and theories of insect control strategies. Includes concepts of chemical, cultural, and physical controls, and biological and integrated pest management. Prerequisite: General Entomology or equivalent.

5311 Evolution (3-0). The study of the theory and current concepts of evolution, including: natural selection, gene flow, founder effect, and speciation.
5312 Graduate Research (0-9). Qualified students may conduct individual research under the direction and supervision of the staff. May be repeated once when topic varies.

5314 Advanced Mammalogy (2-2). Current issues and debates in the mammalogy literature pertaining to systematics, evolution, ecology, and population dynamics with emphasis on Southwestern United States.

5315 Molecular Biology (2-2). A course covering the theory and principles of molecular biology. With an emphasis on vector development and use, students will learn laboratory skills in recombinant DNA technology using a prokaryotic system. Prerequisite: Concurrent enrollment in Biology 5302.

5316 Biostatistical Analysis I (2-2). An introduction to statistical concepts and models applied to agricultural and biological systems. The course introduces the scientific method, inferential theory, data types, descriptive statistics, goodness of fit, contingency tables, the normal distribution and one- and two-sample hypothesis testing. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Required for MS Thesis Plan I option. Offered Fall.

5317 Biostatistical Analysis II (2-2). An advanced course in statistical concepts and models applied to agricultural and biological systems. The course will cover experimental designs, paired-sample hypotheses, multi-sample hypotheses (ANOVA), multiple comparisons, factorial and nested ANOVA, data transformations, linear regression and correlation, multiple regression and correlation, polynomial regression and the binomial distribution. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Offered Spring.

5318 Toxic and Medicinal Plants (3-0). A graduate-level survey of toxic and medicinal plants, including their identification & classification, clinical signs of intoxication, toxic principle, mechanism of action, and treatment (if any). Emphasis is on toxic plants of West Texas and major medicinal plants of historical significance.

5403 Molecular and Classical Cytogenetics (2-4). Chromosome structure, aberrations and evolution, the origin and significance from classical and molecular points of view. Prerequisite: Permission of instructor.

5404 Systematics (3-2). Study of classical and contemporary philosophy approaches, and techniques having to do with the analysis and understanding of evolutionary relationships. Examples from botanical or zoological literature may be emphasized depending upon instructor.

5406 Phytochemistry (3-2). The study of chemical constituents of plants, including: flavonoids, alkaloids, terpenoids, isozymes, and cpDNA.

5407 Special Topics with Laboratory (3-2). A course dealing with selected and timely topics in biology with laboratory. This course may be repeated if topic varies.

5601 Field Botany (3-6). Studies of plants in their natural environments including aspects such as: taxonomy; morphology; ecology; biogeography; and/or phylogeny. Revolving emphasis (e.g., woody plants, monocots, or composites) and a flexible program according to demand. Offered in summer session, several field trips including multi-day.

5602 Field Zoology (3-6). A course devoted primarily to acquainting the student with animal life in its natural habitat. Collecting, museum techniques, systematic and ecological implications will be stressed.

5603 Environmental Microbiology (3-6). A course covering the principles and applications of microbiology in the natural environment of the desert southwest. The environmental impact of microorganisms, aspects of pollution, waste treatment, biodegradational of environmental contaminants, and nutrient cycling will be examined.

5604 Advanced Microbial Ecology (3-6). A course studying pathogenic and non-pathogenic microorganisms in natural environments: diversity, distribution, energetic, and growth of heterotrophic and autotrophic microbes in oxic and anoxic habitats. Roles of microbial populations and communities in biogeochemical cycling, ecosystem functioning, landscapes, industrial, agricultural, and environmental applications will be investigated. The course will include lab, field-oriented exercises and field trips that teach an introduction to research methods. Advanced microscopic, culturing, molecular, and computational techniques will be used. Prerequisites: Introduction to Microbiology, General Chemistry I, and General Zoology or equivalent.

5607 Special Topics Graduate Field Studies (3-6). A course offering selected topics in biology that consist of field work. This course may be repeated if topic varies.

6040 Thesis Research (0-18). The student will enroll in this course after earning credit for BIOL 6301 (Thesis Prospectus), each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. The course is variable for 1 to 9 credit hours, and may be repeated with approval of advisor. Credit hours earned may not be applied towards the 30 or 36 hours required for the degree. Prerequisites: Master of Science students that have been admitted to candidacy, including earned credit for Thesis Prospectus.

6301 Thesis Proposal (0-6). Satisfactory completion of this course will result in an acceptable prospectus to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The prospectus is expected to be completed promptly, and this course may not be taken more than two long semesters.

6302 Thesis Defense (0-6). The student will enroll in this course at the time of the defense, and after earning credit for BIOL
6301 (Thesis Prospectus). Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the College, and filed in the Office of the Executive Vice President and Provost for Academic Affairs. Prerequisite: Thesis Prospectus.

**CHEMISTRY (CHEM)**

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**1111 (CHEM 1111) General Chemistry I Lab (0-2).** Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Corequisite: CHEM 1311.

**1112 (CHEM 1112) General Chemistry II Lab (0-2).** Basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Corequisite: CHEM 1312.

**1311 (CHEM 1311) General Chemistry I (3-0).** This course covers introduction to matter, atomic theory, atomic structure, concept of mole, chemical units of concentration, concept of pH, concept of balanced chemical reaction equation, chemical bonding, and kinetic molecular theory of gases. Prerequisite: Math 1314 or equivalent. Advanced placement in Chemistry 1311 may be given on successful completion of advanced placement examination.

**1312 (CHEM 1312) General Chemistry II (3-0).** This course covers colligative properties of solutions, chemical kinetics, chemical equilibrium, acid-base systems, energy relationships in chemistry reactions, and electrochemistry. The laboratory includes an introduction to qualitative and quantitative analysis. Prerequisite: Chemistry 1311.

**2401 (CHEM 2401) Analytical Chemistry I (2-4).** This course includes chemical equilibria, acid-base equilibria, buffers, solubility equilibria, and volumetric methods of analysis. Prerequisite: Chemistry 1312/1112.

**3402 Forensic Chemistry (3-1).** This laboratory course is designed to introduce students interested in law enforcement professions to methodologies such as filtration, recrystallization, titration, pH determination, and chemical reactions. Students will use the optical microscope for testing pieces of evidence, develop and lift latent finger prints, perform micro-testing of drugs, and utilize a novel technique developed at SRSU for the preparation of hair fibers for SEM analysis.

**3403 Physical Chemistry I (3-2).** This course includes an in-depth study of gaseous systems, thermodynamics, phase equilibria, colligative properties of solutions, and surface chemistry. Corequisite: Math 2413 or equivalent, and Chemistry 2405.

**3404 Physical Chemistry II (3-2).** This course includes an in-depth study of statistical thermodynamics, molecular reaction dynamics, reaction kinetics, electrochemistry, and homogenous and heterogeneous equilibrium. Prerequisite: Chemistry 3403; Corequisite: Math 3320.

**3407 Organic Chemistry I (3-2).** A thorough study of the chemistry of aliphatic and aromatic hydrocarbons and their derivatives. Special emphasis on stereochemistry spectroscopy, reaction mechanisms, and fundamental principles of organic chemistry. Prerequisite: Chemistry 1312/1112.

**3408 Organic Chemistry II (3-2).** The study of heterocyclic compounds, carbohydrates, amino acids, proteins, and steroids. Prerequisite: Chemistry 3407 or permission of the instructor.

**4300 Undergraduate Research (3-0).** Individual research or studies on topics of general interest encouraged. May be repeated once for credit. (On demand)

**4301 Biochemistry I (3-0).** This course covers the structure and function of amino acids, proteins, carbohydrates, lipids, nucleotides and nucleic acids. This course also introduces biological membranes, membrane transport, enzyme kinetics and enzyme regulation. Prerequisites: Organic Chemistry I (CHEM 3407) or instructor’s permission.

**4302 Biochemistry II (3-0).** This course covers major metabolic pathways of the cell: glycolysis, pentose phosphate pathway, gluconeogenesis, glycogen metabolism, citric acid cycle, electron transport, oxidative phosphorylation, photosynthesis, lipid, amino acid and nucleotide metabolism. This course will also provide the student with an understanding of the chemistry of key enzymes and coenzymes, genetic diseases related to metabolism and the mechanisms of regulating the pathways. Prerequisites: Biochemistry I (CHEM 4301)

**4304 Advanced Inorganic Chemistry (3-0).** This course involves an in depth study of wave mechanical principles, chemical bonds, comparison of valence bond and molecular bond theories, coordination compounds, and inorganic nomenclature. Prerequisite: Chemistry 3404.

**4307 Qualitative Organic Analysis (3-0).** The isolation and identification of organic compounds by modern chromatographic and spectroscopic techniques. Prerequisite: Permission of instructor.

**4311 Special Topics (3-0).** A course covering various topics in Chemistry. May be repeated for credit when topic varies.

**4401 Instrumental Analysis (2-4).** The theory and application of instrumental methods such as gas chromatography, infra-red spectroscopy, nuclear magnetic resonance spectroscopy, atomic absorption spectroscopy, and ultra-violet and visible spectroscopy. Prerequisite: Chemistry 2405 or permission of instructor.
4402 Special Problems (3-3). Individual directed readings and conference on special topics in Chemistry. A lecture or seminar format may be used when sufficient interest exists in a topic.

COMMUNICATION (COMM)

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1101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

1307 (COMM 1307) Introduction to Mass Communication (3-0). A survey and analysis of the history, regulations, scope, social implications, and problems of electronic mass media, including radio, television and news media.

1310 Fundamentals of Communication (3-0). Introductory communication course focusing on oral communication theory and skills needed by game and communication designers. Course emphasizes team work utilizing the SCRUM technique, interviewing, concept pitching and oral reports that would be found in the gaming and communication design industries.

1311 (SPCH 1311) Introduction to Speech Communication (3-0). Theory and practice of speech communication behavior in interpersonal, small group, and public communication situations.

1318 (SPCH 1318) Interpersonal Communication (3-0). An introductory course designed to raise student awareness of the complexity and power of the communication process in daily life; to provide students with personally relevant concepts of interpersonal communication; and to help students develop their interpersonal communication skills. Prerequisite: COMM 1311

1320 (SPCH 1321) Business and Professional Communication (3-0). This course focuses on multiple modes of communication in business, government, industrial, and not-for-profit or service organizations ranging from routine messages, memos, and email to letters and professional presentations. Course highlights persuasion as a key component of all business and professional messages. It will include an analysis of the organizational structures of the workplace as well as job-oriented interviewing from the standpoint of the employer and employees. Meets oral communication requirement.

1325 Introduction to Film Studies (3-0). This course focuses on viewing films as literature and promotes understanding the ‘story within the story’. It serves as an introductory course in film theory and criticism with some global cinema perspectives.

1330 Introduction to Strategic Communication (3-0). This course will explore the history of public relations and strategic communications in American society with particular emphasis on print media, broadcasting, advertising, and the internet. Basic theories, concepts, and approaches to strategic communication will be introduced, as well as discussions of the professional and ethical demands on practitioners.

1335 Introduction to Communication Studies (3-0). An introductory survey of the discipline of communication studies and its major fields. Course will cover a broad range of communication concepts and their application, such as communication in the workplace, effectively using social media, and improving interpersonal relationships. New and prospective majors will be exposed to the four emphasis areas of the program and students will also be exposed to the career opportunities associated with communication studies.

2101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

2306 Basic Television (3-1). Theory and practice of video production and television station operation. Lab practice in studio operations, scriptwriting, fundamental production skills (cameras, microphone, lighting, editing, etc.), studio and field assignments. Includes one-hour production lab.

2307 (COMM 2303) Basic Radio (3-1). Theory and practice of audio production and radio station operation. Lab practice in studio operations, scriptwriting, fundamental production skills (microphone, recording, editing, etc.), studio and field assignments. Includes one-hour production lab.

2308 Web Page Design (1-2). A computer based course in which students learn to design, construct, and evaluate web pages. Will include the use of web page software.

2309 Communication and Sport (3-0). This course surveys several fields within the discipline of communication studies as they approach sport as a context. The course includes discussions of sport across a wide range of topics including gender, crisis communication, parent-child interactions, race and ethnicity, performing identity, commodification, sport fan cultures, and more. Prerequisite: COMM 1311

2333 (SPCH 2333) Discussion & Small Group Communication (3-0). Emphasis on effective group interaction in task-oriented situations. Course will focus on elements of small group structures and communication styles which influence the problem-solving process. Includes small group participation and analysis of group communication.

2335 Visual Communication (2-1). This course is an introduction to visual communication using perceptual, physiological, psychological, cultural and semiotic concepts. The course focuses on visual awareness and processing as key elements in effective
communication. This course studies the principles, theories, and language of visual communication, emphasizing the evaluation and use of images, both mediated and face-to-face. Prerequisite: ENG 1301

3101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

3302 Broadcast News Gathering (3-1). Theory and practice of electronic journalism. Lab practice in writing and editing new copy, studio and field operations, reporting, preparation of newscasts and stories, studio and field assignments. Includes one-hour production lab.

3303 Radio Workshop (1-4). Application of basic audio skills in radio station setting. Students will produce individual and group projects/productions. Emphasis will be placed on the creative use of the audio medium. Prerequisite: Communication 2307 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.

3304 Critical Reasoning (3-0). This course is designed to provide an introduction to ideas about rationality and criticism. Through the study of the practical reasoning process, students will learn how to articulate the stages through which actual arguments and discussions go. Class discussion and exercise assignments are used to explore the human transaction known as reasoning.

3305 Mass Communication and Culture (3-0). This course is designed to provide an introduction to the history and theories of mass communication for students majoring in communication and as a general education for students from other disciplines who seek to understand the processes and impact of mass communication. The history and cultural impact of individual media examined will include, print media, film, television, radio and news media.

3307 Studies in Film (3-0). Students will be exposed to classic methods of film analysis (e.g. historical, content, psychological, genre studies, liturgical, and cultural, et al.). Utilizing a combination of full length films and "film on film," students will gain an understanding of film and related mass media. Course may be repeated for credit when film topic changes (e.g. Women in Film; Minorities in Film; Family in Film; et al.).

3308 Video Workshop (1-4). This course is designed for students interested in applying basic television knowledge and skills to the production of individual and group video projects and productions. Emphasis will be placed on creative use of the video medium. Prerequisite: Communication 2306 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.

3309 Family Communication (3-0). The family unit is studied from a communication perspective, considering in-depth the communication processes within the family as well as the extent to which they affect and are affected by the interdependence of family members.

3311 Gender Communication (3-0). This course is designed to teach students how gender is socially constructed and sustained in cultural life. Students will be encouraged to expand their communication skills by utilizing styles historically associated with both genders, rather than a single gendered form of speech.

3312 Advanced Web Page Workshop (0-3). This course is designed for students interested in applying basic web page design knowledge and skills to the construction of individual and group projects. Emphasis will be placed on creative web page design and construction. Course meets university computer competency requirement. Prerequisite: COMM 2308 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.

3313 Advanced Television Production (3-1). Continued study of camera, lighting and sound techniques. Pre-production and post-production elements also included. Course will focus on producing program content to be aired on campus television station. Prerequisite: Communication 2306.

3315 Organizational Communication (3-0). This course provides an examination and exploration of applications of communication theories within the framework of an organization. Attention will be given to strategies for diagnosing communication problems and affecting change in communication behaviors through an analysis of organizational communication theories and methods and a study of organizational culture and communication patterns.

3320 Principles of Public Relations (3-0). A study of the principles and practices in the field of public relations with special emphasis on practical case study experiences. Prerequisite: CSAT 2323 Writing for Digital Media or COMM 1330 Intro to Strategic Communication

4101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

4301 Persuasion (3-0). This course focuses on our dual roles as producers and consumers of persuasive messages. Students will examine persuasion in a variety of texts and contexts, as well as examine persuasive elements in human interaction and behavior. Topics covered include characteristics such as expertise, trustworthiness, and likeability; the use of emotions such as fear and humor; and the sequencing of messages for maximum impact. The course explores how psychological theories about consistency, conformity, and reciprocity help us understand what is persuasive.

4302 Communication Theory and Research (3-0). This course covers a broad exploration of communication theory and
research practices. The course introduces various theories of communication and research methods in and across communication contexts. Emphasis is placed on understanding human communication as a symbolic process that creates, maintains, and alters personal, social, and cultural identities.

4303 Studies in Speech (3-0). Directed individual study and practice in a selected area of speech. May be repeated for credit when topic varies.

4304 Special Topics (3-0). A course dealing with topics in speech communications. May be repeated for credit when topic varies.

4305 Relational Communication (3-0). This course examines social scientific research and theory on the role of communication in developing and maintaining interpersonal relationships. Nature of interpersonal communication, relationship change processes, interpersonal control through communication and personal communication networks.

4307 Intercultural Communication (3-0). An examination of the interpersonal dimensions of intercultural communication as it occurs in a variety of contexts. Topics include: international cultures, co-cultures, cultural contexts, verbal processes, nonverbal interaction, and ethical considerations for the future.

4310 Senior Capstone (0-3). The Senior Capstone is the culminating course in the Communication major sequence. Each Capstone is implemented by students with the help and encouragement of an academic advisor. Capstone experiences allow each student to demonstrate the capacity to bring information, skills, and ideas acquired from the major to bear on one significant project. It is aimed at providing students with the opportunity to integrate the knowledge and skills they have acquired as communication majors as well as provide experiences for students to exhibit competent communication skills learned during their program of study in order to prepare for a career in communication.

4315 Public Relations Campaigns (3-0). A comprehensive study of case-method and campaign planning as they pertain to strategic communications in a modern society. Students learn the professional approach to the practice of strategic communication that includes all media print, electronic, Social Networking, and broadcast-radio and how to evaluate its creative strategy and media selection. Prerequisite: CSAT 2323

5304 Speech Communication Workshop (1-4). Advanced study and analysis of speech communication performance areas. Course may be repeated for credit.

5305 Individual Study in Speech Communication (3-0). Individually guided research in speech communication. May be repeated for credit when topic varies.

5307 Public Relations (3-0). Graduate Public Relations is designed to acquaint public administrators and other professionals with the terms, theory and procedures associated with modern public relations efforts. Special emphasis will be placed on practical applications of PR techniques, including organizational analysis, resource preparation, and crisis management.

5308 Nonverbal Communication (3-0). The course is designed to provide student with an in-depth examination of the major theories, principles, and latest research findings regarding nonverbal communication and its role in the total communication process. Through assigned readings, class discussions, and research projects, this course will examine how different nonverbal communication codes function in interaction to influence the management of conversation, the impressions formed in interaction, the development and maintenance of relationships, and the process of social influence

5309 Organizational Communication (3-0). This course provides the student with frameworks for thinking about how and why communication occurs at different levels of analysis in organizations, and how to recognize, analyze and improve different communication problems. Through assigned readings, class discussion, and research projects, this course will examine the nature of organizations communication; classical or organizational structure theories; behavioral and systems theories; sense-making theories; organizational climate and cultures and; information flow and communication networks.

5310 Internet and Society (3-0). Special courses on topics not included in the regular curriculum. May be repeated for credit with departmental approval.

5311 Small Group Communication (3-0). The aim of this course is to study the nature and dynamics of small groups focusing on communication research and theory as applied to the process of small group decision-making.

5312 Oral Communication Course Development (3-0). A course designed to prepare students to teach the basic communication course in higher education and other professional environments. The course covers course design, course evaluation, methodologies for skill development, and related topics. Provides theoretical and experiential knowledge about communication goals/objectives, teacher/student communication needs & expectations, reinforcement & feedback, climate & influence, and teacher/student communicator style, characteristics, and behavior.

5313 Mass Communication Theory and Research (3-0). This course is designed to explore the research and theory that attempt to explain the effect of mass communication on individuals and society. The course will primarily concentrate on the mass media of the last two centuries, considering how they have been shaped by society and how they have affected society by reviewing relevant theory and research.
3306 Special Topics (3-0). A course designed for discussion of current issues and trends in computer information systems. May be repeated for credit as topics change.

3317 Electronic Commerce (3-0). Focuses on e-commerce from three perspectives: (1) customer-business; (2) business-business; and (3) intra-organization. The Internet, Intranet and Extranets, electronic data interchange (EDI), electronic payments systems, tax issues, and global policy will be investigated. Students will create or enhance a web page as part of the course requirements.

3320 Information Security and Disaster Recovery (3-0). Focuses on concepts and principles of system and data security. Issues covered include risks and vulnerabilities; policy formulation; controls and protection methods; database security; encryption; authentication technologies; host-based and network-based security issues; and issues of law and privacy. Discussions include firewall design and implementation; secure Internet and Intranet protocols; and techniques for responding to security breaches.

3323 Human and Computer Interaction (3-0). A course designed to introduce the student to the dynamic process of human-computer interactions. Key elements will focus on user interface, ease of use, speed, comfort level, and software design strategies.

3370 Systems Analysis and Design (3-0). Focuses on the overview of a systems development life cycles. Emphasis is on current system analysis, data flows, data structures, file design, input and output designs and program specifications. Discussion

1309 (COSC 1309) Logic Design (2-2). A discipline approach to problem-solving with structured techniques and representation of algorithms using pseudo-code and graphical tools. Discussion of methods for testing, evaluation, and documentation. Prerequisite: Concurrent enrollment in Math 1314.

1320 Beginning Object-Oriented Programming (2-2). Introduces the fundamental concepts of object-oriented programming. Topics include data types; control structures; functions, structures, arrays, pointers, pointer arithmetic, unions, and files; the mechanics of running, testing, and debugging programs; introduction to programming; and introduction to the historical and social context of computing. Prerequisites: CS 1309 and Math 1314.

2303 Individual Studies (3-0). Investigation of special topics in Computer Science, conducted on an individual basis. The course may be repeated with different topics.

2305 Topics in Computer Languages (2-2). This course introduces the concepts of object-oriented design using a modern scripting programming language. The student will learn the syntax of the programming language and how to construct object classes. Programming applications will be drawn from a variety of commercial, technical, and scientific problem areas. Prerequisite: CS 1320.

2306 Special Topics (3-0). Discussion of selected topics in computer science suitable for lower division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.

2315 (COSC 2315) Data Structures (2-2). Further applications of programming techniques. Topics may include file access methods, data structures and modular programming, program testing and documentation, and other topics not normally covered in an introductory computer programming course. Prerequisite: CS 1320.

2330 Introduction to Databases (3-0) This course introduces the basics of database systems, as well as the modeling, design, and manipulation of relational databases. The students will gain the required knowledge to describe databases, their characteristics, functions, pros and cons. Topics include data modeling, databased design theory, data definition and manipulation languages, storage and indexing techniques, etc.

2360 LINUX (3-0). This introduction to the LINUX operating system covers UNIX shell commands, shell programming, AWK programming, VI test editor, the SED editor, UNIX platforms, and X-Windows. Offered spring odd years. Prerequisite: CS 1320.

3101 Departmental Seminar (1-0). A forum for the presentation and discussion of results from various disciplines relating to Computer Science and Mathematics. Presentations will be made by visitors, faculty, and students. Students enrolled for credit in the departmental seminar will be expected to make at least one oral presentation during the semester. The course may be repeated during different semesters. (This course is a cross-listing of MATH 3101). Offered fall and spring. Prerequisite: Upper division standing.

3302 Computer Aided Instruction (2-2). This course will cover the fundamental concepts of parallel programming, including GPUs to maximize performance of modern computer systems. It will include parallel programming models, GPU programming with CUDA, and cluster computer with MPI and other parallel environments. Prerequisite: Permission of the instructor.
3306 Special Topics (3-0). Discussion of selected topics in computer science suitably for upper division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.

3310 Computer Communications (3-0). Course covers network systems, topology, media, the theoretical network, real-world networks, and configuration of networks. Offered fall even years. Prerequisite: CS 1320

3320 Object-Oriented Programming (3-0). Concepts and techniques of object-oriented programming. Objects, classes, methods, inheritance, polymorphism. Memory management of objects. Comparison of object-oriented languages such as C++, Smalltalk and CLOS. Offered fall odd years. Prerequisite: CS 2315

3331 Advanced Database Systems (3-0). Study of the concepts of database management systems. Topics include file structures, access methods, database modeling and design, structured query language (SQL), and high level language interfaces to database systems. Offered spring even years. Prerequisite: CS 2315

4306 Individual Studies (3-0). Investigation of special topics in Computer Science, conducted on an individual basis. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of the instructor.

4320 Software Engineering (2-2). This course emphasizes the software life cycle and the tools and models that have been developed to build large systems. Planning, estimating, and managing project development are discussed. Both the structured and the object-oriented paradigms will be covered. Offered fall even years. Prerequisite: CS 2315 or permission of the instructor.

4340 Computer Architecture (2-2). Topics include combinational logic circuits and design sequential circuits, registers and counters, memory and programmable logic devices, register transfers and data paths, and sequencing and control. Offered fall odd years. Prerequisites: CS 2315

4390 Senior Project (0-6). This is a capstone course in which the student is required to complete a project demonstrating command of a significant body of computer science. Includes oral defense of a paper written in ACM style and an exit examination designed to show mastery of all computer science courses completed. This course is required of all senior Computer Science majors. Offered when needed. Prerequisite: Permission of instructor.

5301 Special Topics in Computer Science (3-0). Selected topics in Computer Science. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

5302 Topics in Software Engineering (3-0). This course encompasses different methods and techniques in software engineering, developing the software life cycle and implementation of business-related software needs. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

5303 Independent Studies (3-0). Independent study of selected topics in Computer Science. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

**COMPUTER SCIENCE ART TECHNOLOGY (CSAT)**

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2108 Web Development Programming (1-0). A class covering client/server programming in various operating systems, including JAVA script, ASP, PHP, and others.


2112 Animation Programming (1-0). This course covers basic animation Programming techniques using high-level languages.

2306 Basic Television Technology (3-0). Introductory course dedicated to basic television principles as related to game technology and communication design. Including, but not limited to camera, sound, lights, story board, and basic production elements to be used with green screen technology.

2307 Introduction to Audio (2-2) Students learn the fundamentals of the physics of sound and basic recording and editing techniques.

2308 Web Page Development (3-0). Layout and design of web pages, including structuring the page with proper alignment, consistency and site navigation; visual appeal of color and concepts for choosing color schemes that best represent the purpose of the website; and consideration of copyright law as applied to web page technology.

2309 Introduction to Game Design (3-0). Students will study a range of game genres in order to understand the fundamentals of game design and what makes a game interesting, addictive, and fun. Game ideas will be developed using paper prototyping and, later in the course, digitally prototyped using game-creation software. Prerequisite: CS 1320

2310 Introduction to Digital Imaging (1-2). This course covers digital imaging techniques including Photoshop and Illustrator. The course will focus on digital image editing, digital painting and illustration.

2312 Introduction to Animation (2-2). This course will introduce students to traditional animation techniques using Toon
Boom’s Animate software and by studying notable historic examples of animation. Basic animation principles will be taught via presentations and reinforced through many practical exercises.

2315 Introduction to Game Programming (3-0). A course designed to introduce students to programming languages and techniques used in the computer gaming industry. This course serves as the foundation for all other courses in the Gaming Technology concentration. Prerequisite: CS 1320

2316 Computer Layout Design (3-0). A basic course in layout and production design for computer, online and information technology applications, including webpages, Human Computer Interface (HCI) design, e-publishing and information communication design. This course will focus on the art direction and aesthetics of layout design for computer applications. Students will be introduced to Photoshop, Illustrator, InDesign and other related programs.

2317 Layout Design Programming (3-0). This course will support the technical/programming needed for CS 2316. Various programs such as Photoshop, Illustrator, and InDesign will be explored and applied for use in web pages, human-computer interfaces, and e-publishing.

2323 Writing for Digital Media (3-0). The main focus of the course is the transition of invention and composition to digitally communicated formats emphasizing best practices for design, composition, and usability in the creation and implementation of digital content. Prerequisite: ENG 1302

2360 Mobile Program Android/MACiOS (3-0). This class will address programming principles to be applied in Android and MAC IOS operating systems. Prerequisite: CS 1320

3120 Gaming and Script Programming (1-0). This course will address gaming script languages to develop games and applications for mobile devices such as iPhone, iPad, Android, and others. Prerequisite: CS 1320

3121 Branding and Identity Design Development (1-0). This course will address the developing process of branding and identity considering current market trends and its impact in society.

3130 Animation Programming (1-0). A laboratory course in which students apply techniques learned in CSAT 3330 using software available in the Technology Learning Center. Concurrent enrollment: CSAT 3330

3160 User Interface Design (1-0). Design related to interactive displays, interfaces, and environments for controlling a variety of computer applications including games and communication, and other programs including human-computer interface applications.

3301 Acting for Animation (2-2). An Advanced study of animation techniques and approaches focused on motivation, expression, and empathy. Prerequisite: CSAT 2312

3310 Art History for the Designer (3-0). This course is a survey of the visual arts of the world tailored specifically to the needs of designers. It will cover all regions and periods of the visual arts and focus on how students can utilize historical styles for their own design work. Emphasis will be placed on how to replicate authentic and historical styles for a variety of design purposes, including gaming, print, costume, theatre, and communication design applications. Prerequisite: CSAT 2310 or FA 2302

3311 History of Communication Design (3-0). This course introduces the history of visual communication, including text and image. Lectures, slides, and discussions focus on the work of important practitioners in the field and on the historical and cultural significance of design, technology, and innovation

3312 Advanced Webpage Design (3-0). An advanced course in webpage and information technology design. This course will cover advanced XHTML, CSS, and interactive webpage design applications. The course will focus on art direction, layout, design, aesthetics and art production for webpages and related applications. Prerequisite: CSAT 2308

3316 Advanced Publication Design (3-0). This course covers advanced methods for layout, photo, and art direction for prepress, print, and electronic publishing. The course focuses on managing art direction and production for print and electronic publishing.

3320 Gaming and Screenwriting (2-2). A class exploring how to simulate movement and life using 2-dimensional and 3-dimensional means. Students will study selected examples from history of animation and create their own short pieces in a variety of software. Prerequisites: CSAT 2315 or permission of instructor.

3321 Branding and Identity Design (3-0). This course explores methods for designing effective logos, creating marketing materials, and establishing advertising programs using computer technology.

3330 Introduction to Maya (2-2). This course introduces students to the techniques and concepts used to create 3-dimensional graphics using Autodesk’s Maya. Students will learn how to build light and animate 3-dimensional objects for use in gaming and animation.

3340 Advanced Animation (2-2). Further study of frame-by-frame animation continue to develop their animation skilled through examples and projects.

3341 Video Editing for Gaming (3-0). Computer driven course focused on non-linear digital editing processes utilizing green
screen technology.

3342 Advanced Audio Production (2-2). Students record, edit, and mix audio for video game production. Includes techniques for voice talent. Prerequisite: CSAT 2307

3345 Techniques of Video Production (3-0). Production course reviewing use of camera and lighting techniques and incorporating studio sound and motion capture technology. Students learn studio production planning, lighting, and audio along with basic video engineering. Students will practice all crew positions, including floor director, camera operator, lighting technician, audio technician, technical director, and program director. Prerequisite: CSAT 2306

3350 Advanced Two-Dimensional Imaging (3-0). A course in advanced digital imaging, including creation of original digital matte paintings, illustration and photo manipulation for print, gaming and art applications. Students will work in a variety of industry standard programs including Photoshop and Illustrator. Prerequisite: CSAT 2310

3360 User Interface Programming (3-0). Programming related to interactive displays, interfaces, and environments for controlling a variety of computer applications including games and communication, and other programs including human-computer interface applications. Prerequisite: CS 2315

3370 Game Producing (2-2). An overview of managing the game production process, including business practices, team management, marketing, scheduling, budgeting, and contracts.

3380 Motion Capture (2-2) Covers the basics of directing and capturing 3D data for use in character design and movement in videogames.

4301 Voice-Over Techniques (2-2). An advanced approach to vocal production and voice-over performance utilizing audio recording equipment. Prerequisite: THEA 2336

4302 Advanced Maya (3-0) This course is the further study of Maya to create 3-dimensional graphics. Students will refine the creation, lighting, texturing, and animation of their 3-d objects. Prerequisite: CSAT 3330

4310 Senior Capstone (3-0). The Senior Capstone is the culminating course in the CSAT concentrations sequence. Each capstone is implemented by students with the help and encouragement of an academic advisor. Capstone experiences allow each student to demonstrate the capacity to bring information, skills, and ideas acquired from the major to bear on one significant project. It is aimed at providing students with the opportunity to integrate the knowledge and skills they have acquired as Computer Science majors as well as provide experiences for students to exhibit competent Computer Science skills within their concentration learned during their program of study in order to prepare for a career in Computer Science Applied Technology.

4311 Capstone II (2-2). Continuation of Senior Capstone. Students complete a collaborative video game project and present a working product and business plan. Prerequisite: CSAT 4310

**COMPUTER SCIENCE CYBER SECURITY (CSST)**

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1170 Ethics of Computer/Network Resources (1-0) This course focuses on computer science programming and management ethics with consideration for others. It also provides students with an overview of the various access points to wired and wireless networks with the types and purposes of the computer hardware and software on campus.

1340 Systems Administration/Virtualization (3-0) This course provides students with an understanding of the roles of an operating system, its basic functions, the services provided by the operating system, and the skills to perform basic operations involved in system administration by utilizing virtualization technologies. It includes and secure configuration of a system, password policies, updates and patches, backups, and port security.

2303 Individual Studies (3-0) Investigation of special topics in Computer Science Cyber Security, conducted on an individual basis. The course may be repeated with different topics. Prerequisite: Permission of instructor.

2306 Special Topics (3-0) Discussion of selected topics in security technology suitable for lower division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.

2370 Fundamental Security Design (3-0) This course provides students with basic security design components that help create systems worthy of. It covers the first principles of security, security failures, identification of good human interfaces, and their balance against security mechanisms. Prerequisite: CSST 1340

2372 Fundamental Information Assurance & Guidelines (3-0) This course provides students with the fundamentals of information assurance and common security architectures with a discussion of policy, legal, ethics, and compliance. It addresses risks, security models, access controls, and legal relationships to systems such as DMZs, proxy servers, cascading dependencies, and secure networks. It also addresses HIPAA, FERPPA, the Computer Security Act, Sarbanes-Oxley, privacy, payment cards, etc. as well as State, U.S and International standards.

2374 Cyber Threats & Defenses (3-0) This course provides students with a basic awareness of the threats that may be present in the cyber realm and the defenses used to mitigate and defend against them. It addresses adversaries, types of attacks, network security, and vulnerabilities. Prerequisite: CSST 2370

2376 Introduction Cryptography (3-0) This course provides students with the basic ability to understand where and how
cryptography is used. It addresses symmetric cryptography, public key cryptography, key management, hash functions, digital signatures, protocols, and evolution from DES to AES.

3303 Individual Studies (3-3). Investigation of special topics in Computer Science Cyber Security, conducted on an individual basis. The course may be repeated with different topics. Prerequisite: Permission of instructor.

3306 Special Topics (3-0) Discussion of selected topics in security technology suitable for upper division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.

3322 Secure Programming Practices (3-0) This course provides students with an understanding of the characteristics of secure programs and the ability to implement programs that are free from vulnerabilities. It addresses robust programming, defensive programming, and programming flaws. Prerequisite CS 1320 (may be concurrent).

3330 Database Systems (3-0) This course provides and introduction to many of the valuable skills required for employment as a database professional. Topics include basics of database systems, database types, SQL queries, database design theory, data and manipulation languages, relational databases, storage and indexing techniques, privilege levels, etc. It will establish a foundation for more advanced work with database technology and gain a solid understanding of how database systems are deployed and used within the context of real-world issues.

3370 Supply Chain Security (3-0) This course provides students with an understanding of the security issues associated with building complex systems out of the third-party components of unknown origin. It addresses global development, offshore production, and transport and logistics of components. Prerequisite: CSST 2372

3371 Secure Hardware/Firmware (3-0) This course provides students with the ability to apply security methods to the diverse components in hardware/firmware. It addresses microcode, firmware, hardware abstraction layers, virtualization layers, and how software and hardware interact. Prerequisite: CSST 1340

3382 Cyber Sec Planning and Management (3-0) This course provides students with the ability to develop plans and processes for a holistic approach to cyber security for an organization. It addresses CBK, operational and tactical strategic plans and management, and making cyber security a strategy. Prerequisite: CSST 2370

4372 Intrusion Detection/Prevention Systems (3-0) This course provides students with knowledge and skills related to detecting and analyzing vulnerabilities and threats and taking steps to mitigate associated risks. It addresses deep packet inspection, log file analysis, cross log comparison and analysis, host or network based intrusion detection, honeynets and honeypots. Prerequisite: CSST 3310

4374 Network Defense (3-0) This course provides students with knowledge of the methods of analyzing and mitigating threats coming from inside or outside the network. It addresses network protocols, security devices, security services, configuration, and packet capture and analysis. Prerequisite: CSST 3330

4380 Security Risk Analysis (3-0) This course provides students with sufficient understanding of risk assessment models, and processes such that they can perform a risk assessment of a particular system and recommend mitigations to identified risks. Prerequisite: CSST 3370 (may be concurrent).

4382 Life-Cycle Security (3-0). This course provides students with an understanding of how security principles can be applied to improve security throughout the system or product life-cycle. It addresses system life-cycle phases and issues, development processes, configuration management, development threats, and software assurance maturity model. Prerequisite: CSST 4380, CSST 4384 (may be concurrent).

4384 Quality Assurance/Functional Testing (3-0) This course provides students with methods to assess how well functional unit meets a security requirement. It includes testing methodologies, test analysis, test generation and execution, and validation of results. Prerequisite: CSST 4380, CSST 4382

4390 Senior Capstone (3-0) This is a capstone course in which the students is required to complete a project demonstrating command of a significant body of security technology including oral defense of a paper written in ACM style and an exit examination designed to show mastery of all security technology courses completed. This course is required of all senior Security Technology majors. Offered when needed. Prerequisite: Permission of the instructor.

CRIMINAL JUSTICE (CJ)

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1301 (CRIJ 1301) Introduction to Criminal Justice (3-0). History and philosophy of criminal justice and ethical considerations; crime defined; its nature and impact; overview of criminal justice system; police prosecution and defense; trial process; corrections. (Required)

1302 Introduction to Homeland Security (3-0). This course will introduce students to the organization, structure and function of Homeland Security at the federal, state, and local levels as well as in the civilian world. Constitutional issues and special criminal processing will also be discussed.

1307 (CRIJ 1307) Crime in America (3-0). American crime problems in historical perspective; social and public policy factors affecting crime; impact of crime and trends; social characteristics of specific crimes; prevention of crimes.

1313 (CRIJ 1313) Juvenile Justice System (3-0). Study of the juvenile justice system and juvenile crime and delinquency. Theories of delinquency.

1320 Police Academy I (3-0). 1st of 4 part credit for Police Academy. Prerequisite: concurrent enrollment in the SRSU Police
Academy and enrollment in 1321, 1322, 1323

1321 Police Academy II (3-0). 2nd of 4 part credit for Police Academy. Prerequisite: concurrent enrollment in the SRSU Police Academy and enrollment in 1320, 1322, 1323

1322 Police Academy III (3-0). 3rd of 4 part credit for Police Academy. Prerequisite: concurrent enrollment in the SRSU Police Academy and enrollment in 1320, 1321, 1323

1323 Police Academy IV (3-0). 4th of 4 part credit for Police Academy. Prerequisite: concurrent enrollment in the SRSU Police Academy and enrollment in 1320, 1321, 1322

2302 Basic Skills for Criminal Justice (3-0). Thinking skills such as critical thinking, legal reasoning, and social-scientific thinking. Basics of criminal justice library research including Internet and data sources. Criminal justice communication skills including report and paper writing and testifying. Ethics and Professionalism.

2313 (CRIJ 2313) Correctional Systems and Practices (3-0). Corrections in the criminal justice system; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues.

2321 Special Topics in Criminal Justice (3-0). Study of selected issues in criminal justice. May be repeated when topic varies.

2323 (CRIJ 2323) Aspects of Law Enforcement (3-0). Police authority; responsibilities; constitutional restraints; laws of arrest, search and seizure; police liability. (Required)

2328 (CRIJ 2328) Police Systems and Practices (3-0). The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police community interaction; current and future issues

3101 Independent Study (1-0). Independent research of a selected topic in the Criminal Justice or Homeland Security field. Prerequisite: Permission of instructor.

3201 Independent Study (2-0). Independent research of a selected topic in the Criminal Justice or Homeland Security field. Prerequisite: Permission of instructor.

3302 Victimology, Victim Services and Victims’ Rights (3-0). A study of victims, victimization and the consequences of victimizations, including victims of sexual assault and child abuse; victim precipitation, self-help and prevention of victimization; victimization surveys and other data sources; history of victims’ rights and the victims' rights movement; victims' rights and services.

3303 Crime and Justice in the Movies (3-0). Examination of the interrelationships between cinema, reality, and public opinion. Examination of stereotypes and assumptions shown in cinema as compared to fact. Study of professional, ethical, and historical issues in criminal justice as reflected in movies May be repeated when topic varies.

3304 Wildlife Law Enforcement (3-0). Application of investigative and evidentiary procedures to wildlife law enforcement; legal basis for wildlife laws; federal and state wildlife laws; role of wildlife law enforcement in wildlife management.

3307 Organized Crime (3-0). Analysis of crime problems of an organized nature; economic impact upon society; laws regulating organized crime; investigation techniques.

3311 Women and Crime (3-0). This course is designed to give the student a basic knowledge of the issues surrounding women and their interaction with the criminal justice system. Topics covered will include women as victims of crime, as perpetrators of crime, and as workers within the system.

3312 Criminal Investigation (3-0). Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation, photography.

3316 Domestic Violence (3-0). This course is designed to give the student a basic knowledge of the issues surrounding victims and perpetrators of domestic violence. Topics covered will include victim and perpetrator characteristics, explanations for the violence, and explanations for the victim's behavior. Criminal justice responses to domestic violence situations both currently and historically will also be covered.

3317 White Collar Crime (3-0). This course is designed to familiarize the student with the special crimes that qualify as white collar crime. By the end of the course the student will be able to distinguish white collar offenses from other types of crimes. Additionally, students will be familiar with the criminal justice system’s contemporary responses to white collar crimes.

3320 Emergency Management (3-0). This course covers risk management and disaster management theory, risk assessment, protection of critical infrastructure, Incident Command Systems, FEMA strategies, and other efforts to prevent and mitigate terrorist attacks, natural disasters, and other large scale events. The role of all levels of government, military, and citizenry will be examined.

3321 Human Trafficking (3-0). This course is designed to give the student a basic knowledge of the issues surrounding human trafficking, including organization, finance, legislation, and regional perspectives.

3322 Cybersecurity (3-0). The course introduces students to the wide range of modern communications technologies and uses of...
those technologies for intelligence gathering and crime fighting. Additionally, a brief overview of law and policy concerning cyber communications are discussed beginning with the National Security Act of 1947.

4301 Multicultural Studies in Criminal Justice (3-0). Understanding, communicating and working with persons from different cultures; basic human relations skills needed by those working in the criminal justice system; women in the criminal justice? system; equal protection of the law and anti-discrimination, civil rights, sexual harassment and related laws; criminal justice ethics. (Required)

4302 Seminar in Special Problems in Criminal Justice (3-0). Exploration and analysis of contemporary problems related to police, courts or corrections. May be repeated for credit when topics vary.

4303 Death Penalty (3-0). This class is designed to examine the moral, legal, social and political aspects surrounding the death penalty issues. We will focus on the history of capital punishment both domestic and abroad. Issues of deterrence as well as how problems of discrimination are actively addressed. This course will utilize past legal and criminological research to argue both for and against the death penalty in America. This course is not designed to reinforce a student's current belief-rather to challenge and broaden their understanding of a complicated and divisive criminal/political issue.

4304 Criminology (3-0). Study of factors that contribute to crime; criminological theories; criminal types; research methods; types of crimes; crime trends. (Required)

4306 Gangs (3-0). The Gangs class is designed to introduce and guide students in the understanding of the advent and expansion of criminal gangs. Topics and discussion will focus on the history, organization, identification, and criminological theories surrounding both "street" and "prison" gangs. Emphasis will be placed on the spread of prison gangs in Texas prisons and their influence on Texas prison policy. Street gangs will be studied as an artifact of the "Drug War".

4307 Internship (3-0). This course is designed to give students the opportunity to apply classroom theory to actual practice. Internship may be repeated twice for credit at different agencies. It is the student's responsibility to find a suitable agency to intern for. Students must have a 3.0 GPA and must complete a minimum of 45 hours of supervised work time. (No person may obtain internship credit for full or part time paid employment.) Prerequisite: Criminal Justice Majors only: Junior or Senior standing and permission of the Department Chair.

4308 Terrorism (3-0). This class is specifically designed to introduce students to the threat of terrorism both domestic and international. We will discuss the implications of all aspects of terrorism on U.S. society. Students will have an opportunity to research and present to the class specific topics of interest. We will address the religious, sociological, criminal and legal issues of the police, prosecutors, and courts. Additional focus will be on the application of" The Patriot Act" as it impacts U.S. Freedoms.

4309 Senior Seminar (3-0). Professional ethics and professionalism, role of the private sector in criminal justice, opportunities for employment and graduate study, criminal justice data sources, history and future of discipline and current developments. Offered spring only (Required). The final exam for this course for CJ majors will be the CJ Senior Exam which must be passed to graduate. Students will write a major student-competition level paper. Prerequisite: CJ 1301, 2305, and 4304.

4310 Deviant Subcultures (3-0). This course examines the roots, structures, habits, and sociological implications of deviant subcultures. The most obvious example of a deviant subculture is criminal gangs, either street gangs or prison gangs.

4311 Sexual Predators (3-0). This course examines the roots, structures, habits and sociological implications of sexual predators. The most obvious example of sexual predators is the violent sexual serial killer.

4312 Punishment (3-0). In this course we will review the public policy concerning the death penalty and punishment. We will further look into issues that may or may not affect the use of the death penalty within the various states.

4313 Juvenile Delinquency (3-0). This course will focus on the nature and extent of delinquent behavior, theories of delinquency and their implications for intervention, and the cultural and social factors related to delinquency.

4315 Serial Killers (3-0). This class examines Serial Killers worldwide. Students will be exposed to numerous highly publicized Serial Killers, as well as many that are not so well known. This class will examine the root causes of these criminals and their impact on society.

4318 Advanced Homeland Security (3-0). This course will explore the creation and evolution of the Department of Homeland Security. Additional focus will be on the War on Terror, Weapons of Mass Destruction, new technologies and the role of civilian organizations within Homeland Security.

4319 School Violence (3-0). This class is designed to familiarize students with the sociological and legal issues concerning violence in schools. The subject is not limited to the United States.

4320 Forensic Ballistics: Handguns (3-0). This course is mainly a firearms examination course. Students will learn the historical evolution Handguns and their relationship to changes in the American society. The identification of and differences between all forms Handguns will be emphasized. This course will spend considerable time covering the usage and investigation of the criminal application of Handguns in crime, as well as, the tactical applications employed by law enforcement. The course includes considerable “hands-on” time with actual firearms.
4321 Forensic Ballistics: Long Guns (3-0). This course is mainly a firearms examination course. Students will learn the historical evolution of both Rifles and Shotguns and their relationship to changes in American society. The identification of and differences between all forms of “long guns” will be emphasized. This course will spend considerable time covering the usage and investigation of the criminal application of “long guns” in crime, as well as, the tactical applications employed by law enforcement. The course includes considerable “hands-on” time with actual firearms.

4322 Topics in Homeland Security (3-0). This course covers current and emerging issues in the area of Homeland Security. Topics may include programs, emerging technologies, and legal trends in both the domestic arena and on the global stage.

4323 Transnational Crime (3-0). This course is designed to introduce the student to the study of criminal organizations and their crimes on the global stage. Focus is particularly on those organizations and crimes that cross international boundaries. Areas of study include organized crime, trafficking in drugs, humans and weapons, piracy, and other crime groups and individual criminals. Global efforts and prevention, interdiction and punishment will also be covered. A particular focus will be on placing these issues in the context of Homeland Security and the war on terror.

4324 Immigration Issues (3-0). This course will focus on the history and development of immigration patterns and policies in the United States. Emphasis will be placed on policy issues as related to the work of Criminal Justice practitioners, particularly in the post-9/11 world. Students will also be expected to analyze policy impact on various groups of immigrants.

5301 Overview and Administration of the Criminal Justice System (3-0). An advanced and detailed overview of the criminal justice system and its administration. This course will take a systematic perspective of our system of police, courts, and corrections. Focus will be placed on how the system, as a system, reacts to changes in legislation and social mood. Some emphasis will be placed on the legislative and political process surrounding U.S. criminal justice efforts.

5305 White Collar Crime (3-0). This course will cover topics relating to white collar crimes across America. Topics will cover both historical and contemporary perspectives as well as corporate and individual level offenses.

5306 Drug Abuse (3-0). The focus of this course is on drug use, misuse and abuse in America. Topics covered include history of drug use, laws concerning use and abuse, illicit and prescription drug abuse, drug control approaches and other relevant topics.

5308 Special Populations in Criminal Justice (3-0). This course will explore issues related to minorities at all levels of the system from three perspectives: employees, victims, and offenders. At the end of the course, the student should have developed a knowledge of and appreciation for the complexity of the effect of the criminal justice system on the lives of minorities in this country.

5310 Capital Punishment (3-0). In this course we will review the public policy concerning the death penalty. We will further look into issues that may or may not affect the application of the death penalty within the various states. Both the history of the death penalty and the future application or abolition of the death penalty will be addressed.

5311 Advanced Law Enforcement Administration (3-0). Management issues in modern police agencies including hiring, retention, training, dismissal, human relations and cultural sensitivity. Communication, management styles, policy development, effectiveness, problem-solving and community policing are also covered.

5313 Seminar in Policing (3-0). This advanced level course will focus on the history and development of modern professional policing. Emphasis will be placed on the evolving role of police in a democracy as well as the trends toward community oriented policing styles.

5314 Seminar in Corrections (3-0). A course on the evolution of corrections. Theories of punishment as well as correctional management techniques will be addressed. This course will go beyond the concepts of institution corrections and will explore modern correctional alternatives and special topics relevant to corrections.

5315 Seminar in Courts and Judiciary (3-0). A Specialized course which will focus on the theories of American justice. Attention will be paid to the structure of the U.S. justice system. A portion of the course will cover the role of each judicial element Federal, State and Local Courts. Students should expect some exposure to case briefs and legal research.

5316 Women and Crime (3-0). This course will cover topics relating to women and their interaction with the various components of the criminal justice system as victims, offenders, and employees. Each of these three categories of women will be covered in the context of police, courts, and corrections. Additionally issues relating to the rights women have in American society will be covered from a historical and contemporary perspective.

5317 Juvenile Delinquency (3-0). This course will focus on the nature and extent of delinquent behavior, theories of delinquency and their implications for intervention, cultural and social factors related to delinquency, as well as the philosophy and functioning of the juvenile justice system. Emphasis will be placed on school related delinquency, the role of the media in creating delinquency panics, and the differences between males and females.

5318 Seminar in Criminal Justice Theory (3-0). An advanced study of theories used in Criminal Justice to explain crime and deviance. This course will require students to explain criminal and deviant behavior and apply their theoretical understanding to policy issues.
5319 Use of Force in Criminal Justice (3-0). Study of the use of and legal rules and concepts involved in the use of force by criminal justice personnel. The course will include both legal and conceptual dimensions of the issue. Among topics to be covered are force continuaums, non-lethal force, verbal judo, and alternatives to using force.

5321 Domestic Violence (3-0). This course will cover topics relating to domestic violence including spousal abuse, other types of family abuse, and caretaker abuse. Discussion will include possible explanations for the abuse, reasons why the victims stay, and intervention issues.

5322 Immigration Issues (3-0). This course will focus on the history and development of immigration patterns and policies in the United States. Emphasis will be placed on policy issues as related to the work of Criminal Justice practitioners, particularly in the post 9-11 world. Students will also be expected to analyze policy impact on various groups of immigrants.

5323 Homeland Security (3-0). This course will explore the various aspects of the government entity – Homeland Security. Discussion will focus on defining the role for this agency, government restructuring, legal basis for actions and the various divisions within the agency. Also, special projects undertaken in support of the agency’s mission will be discussed with emphasis on the effects these will have on the various levels of government and the civilian population.

5324 Social Deviance (3-0). This course focuses on the concept of deviance; deviant behaviors, and explanations of such behaviors. Although criminal behavior is considered a form of deviance, there are plenty of legal and quasi-legal behaviors that also fall under this category. In the course we will discuss a variety of behaviors considered deviant, such as smoking, drinking, drug use and sexual activity.

5325 Graduate Seminar (3-0). Professional ethics and professionalism, role of the private sector in criminal justice, opportunities for employment and doctoral level study, criminal justice data sources, history and future of discipline and current developments. Prerequisite: CJ 5304, CJ 5318 and CJ 5334

5326 Victimology (3-0). This course is designed to give the student a basic knowledge of the issues surrounding criminal victimization. Topics covered will include types of victims, reactions to victims by society and the criminal justice system, and the victim rights movement.

5328 Seminar on Transnational Crimes (3-0). This course is designed to introduce the student to the study of criminal organizations and their crimes on the global stage. Focus is particularly on those organizations and crimes that cross international boundaries. Areas of study include organized crime, trafficking in drugs, humans and weapons, piracy, and other crimes groups and individual criminals. Global efforts and prevention, interdiction and punishment will also be covered. A particular focus will be on placing these issues in the context of Homeland Security and the war on terror.

5329 Seminar in Emergency Management and Disaster Preparedness (3-0). This course covers risk management and disaster management theory, risk assessment, protection of critical infrastructure, Incident Command Systems, FEMA strategies and other efforts to prevent and mitigate terrorist attacks, natural disasters and other large-scale events. The role of all levels of government, military and citizenry will be examined.

5330 Emerging Issues in Homeland Security (3-0). This course covers current and emerging issues in the area of Homeland Security. Topics may include programs, emerging technologies, and legal trends in both the domestic arena and on the global stage.

5331 Topics in Criminal Justice (3-0). Intensive study of selected issues in Criminal Justice. May be repeated when topic varies.

5333 Internship (0-3). Supervised work experience in an approved criminal justice agency. Designed to allow the student to synthesize theory and practice. It is the student's responsibility to find a suitable agency at which to intern. To be eligible the student must have a minimum GPA of 3.5. A minimum of 45 supervised hours will be required. A student's compensated employment may not be utilized as an internship. Prerequisite: Permission of the Graduate Coordinator.

5334 Methods of Social Research (3-0). An introduction to research methods within the social sciences and the major contemporary approaches to it.

5335 Human Trafficking (3-0). This course is designed to give the student a basic knowledge of the issues surrounding human trafficking. Topics covered will include: the rise of human trafficking, the financial side of human trafficking, legislation and regional perspectives on human trafficking as well as women and children as sex slaves.

5336 Seminar on Domestic Terrorism (3-0). This class is specifically designed to introduce students to the threat of domestic terrorism. We will discuss the implications of all aspects of such terrorism on U.S. society and on the world at large. We will address the root causes of such behavior and the international response to incidents and actors. Additional focus will be on the application of "The Patriot Act" as it impacts U.S. freedoms.

5337 Seminar on International Terrorism (3-0). This class is specifically designed to introduce students to the global threat of international terrorism. We will discuss the implications of all aspects of such terrorism on U.S. society. We will address the root causes of such behavior and the criminal justice response to incidents and actors. Additional focus will be on the Department of Homeland Security and its anti-terrorism programs and policies.

5338 Cybersecurity (3-0). This course introduces students to the wide range of modern communication technologies. Use of these
technologies by government and business entities for intelligence gathering, their limitations, and vulnerabilities are introduced to the students. An overview of the history of computer hacking is covered. Additionally, a brief overview of law and policy concerning cyber communications are discussed beginning with the National Security Act of 1947.

**6301 Thesis (0-6).** Satisfactory completion of this course will result in an acceptable prospectus presented to the thesis committee. The student must have completed all coursework with a 3.8 GPA, and passed all sections of the comprehensive exams. The student will enroll each semester or summer term in which assistance is provided by the thesis committee or when use is made of the library or other research facilities of Sul Ross State University. Students should be aware that faculty may not be available during one or both summer sessions and plan accordingly. This course may not be taken for elective credit. Prerequisite: Permission of the Graduate Coordinator and successful completion of all coursework and Comprehensive Exams. Students must also complete the Thesis Committee Agreement form prior to registration. See the Criminal Justice Graduate Handbook for details.

**6302 Thesis (0-6).** After satisfactory completion of CJ 6301, the student will enroll in this course each semester or summer term in which assistance is provided by the thesis committee or when use is made of the library or any other research facilities of Sul Ross State University. Satisfactory completion of this course will result in a completed thesis presented to, and accepted by, their graduate committee, accepted by the Dean of the College, and filed in the office of the Provost and Vice President for Academic and Student Affairs. Students should be aware that faculty may not be available during one or both summer sessions and plan accordingly. This course may not be taken for elective credit. Prerequisite: CJ 6301 and permission of the Graduate Coordinator and department Chair.

### DEVELOPMENTAL EDUCATION

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**Education (ED)**

**B100 BASE Reading Review (0-0).** This course is a six-hour review of ED 0200 BASE Reading Skills.

**0100 ED 0300 Reading Review (0-0).** This course is a six-hour review of ED 0300.

**0200 BASE Reading Skills (2-0).** This course is designed for students whose score on an approved assessment instrument does not meet the minimum developmental education requirement. In the course, students will develop basic reading skills. Topics included in this course are building vocabulary, defining context clues; identifying main and supporting ideas; identifying author’s purpose and tone. Credit in this course cannot be used to satisfy requirements for any degree.

**0300 Reading Skills (3-0).** This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the reading portion of the assessment. In this course, students will develop reading and study skills. Topics included in this course are defining vocabulary in context; identifying stated, implied main ideas and central point; identifying details that support and differentiate between fact or fiction; identifying author's purpose and tone; determining points and support of a critical argument. This course will emphasize correction of reading problems identified through diagnosis. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to any intensive reading course.

**English (ENG)**

**B100 BASE Writing Review (0-0).** This course is a six-hour review of ENG 0200 BASE Writing Skills.

**0100 ENG 0300 Writing Review (0-0).** This course is a six-hour review of ENG 0300.

**0110 ENG 0310 IRW Review (0-0).** This course is a six-hour review of ENG 0310.

**0200 BASE Writing Skills (2-0).** This course is designed for students whose score on an approved assessment instrument does not meet minimum developmental education requirement. Topics included in this course are sentence and paragraph development, grammar and vocabulary. Credit in this course cannot be used to satisfy requirements for any degree.

**0300 Writing Skills (3-0).** This course is designed for students who score on an approved assessment instrument does not meet minimum requirements on the writing portion of the assessment. In this course, students will develop their writing and reading skills through daily exposure to writing and reading exercises. Topics included in this course are: grammar, sentence structure, paragraph development, and essay writing. Areas which will be emphasized for essay writing are: appropriateness, unity and focus, development, and organization. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to ENG 1301. (ENG 0300).
0310 Integrated Reading and Writing Skills (3-0). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the writing and/or reading portion of the assessment. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates preparation in basic academic reading skills in writing a variety of academic essays. Credit in this course cannot be used to satisfy requirements for any degree. Student must earn a grade of C or better to progress to ENG 1301. Prerequisite: C or better in ENG 0300 or ED 0300 OR satisfactory score on placement exam.

Mathematics (MATH)
B100 BASE Math Review (0-0). This course is a six-hour review of MATH 0200 BASE Math Skills.

0100 MATH 0300 Review (0-0). This course is a six-hour review of MATH 0300.

0101 MATH 0301 Review (0-0). This course is a six-hour review of MATH 0301.

0200 BASE Math Skills (2-0). This course is designed for students whose score on an approved assessment instrument does not meet the minimum developmental education requirement. In the course, students will develop basic mathematics skills. Topics included in the course are operations with whole numbers, integers, fractions, decimals and percents; univariate linear equations, including multi-step equations and proportions and verbal and written communication involving mathematical language, symbols and notation. Credit is in the course cannot be used to satisfy requirements for any degree.

0300 Introductory Algebra (3-0). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the mathematics portion of the assessment. Topics included in this course are algebraic operations on real numbers, the solving of equations and inequalities, basic operations with polynomials, simple graphing techniques, critical thinking skills, and college readiness skills. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to the next level math course.

0301 Intermediate Algebra (3-0). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the mathematics portion of the assessment. Topics included in this course are real numbers, exponential, rational, and radical expressions, factoring, complex numbers, and critical thinking skills. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to the next level math course. Prerequisite: C or better in MATH 0300 or satisfactory score on placement exam.

Non-Course Based Options NCBO)
0111 NCBO Tutoring (0-0). Developmental education students enrolled in a college-level course through differentiated placement receive tutoring support.

0112 NCBO Academic Support (0-0). Developmental education students enrolled in a college-level course through differentiated placement receive academic support.

English Second Language (ESL)

0300 ESL Reading and Vocabulary (3-0). This course develops English reading proficiency and vocabulary for academic, career, or personal purposes in speakers of languages other than English and prepares them to function in a multicultural, multilingual society.

0301 ESL English Composition (3-0). This course develops strategies and techniques of writing and composition for ESL students.

ECONOMICS (ECO)
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2301 (ECON 2301) Principles of Macroeconomics (3-0). An analysis of the economy as a whole including measurement and determination of Aggregate Demand and Aggregate Supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy.

2302 (ECON 2302) Principles of Microeconomics (3-0). Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade.

4303 Current Economic Financial Problems (3-0). Examination and analysis of the more important and more pressing economic problems of the nation and world.

4305 Advanced Readings and Research in Economics and Finance (3-0). Selected topics in economics and/or finance to be offered as a seminar or individual study.

5301 Comparative Economic Thought-Free Enterprise (3-0). Survey of the four influential schools of economic thought – Austrian, Keynesian, Monetarist, and Marxist. Emphasis on the development of capitalist theory and free markets as these
influenced the economy of the United States. Original works will be reviewed and discussed in the context of recent events.

5303 Managerial Economics (3-0). Economic analysis applied to business problems including cost and revenue measurement, profit planning, and market structure. Special emphasis is placed on optimizing techniques, basic econometrics, and business forecasting. Prerequisite: ECO 2302

5304 Research and Readings in Economics (3-0). Class directed reading or research in a particular field of economics. The course may be repeated for credit when the topic varies.

EDUCATION (ED)

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Educational certification programs are being revised. It is important to check with an advisor in the major field each semester for updated information.

3300 Principles of Education (3-0). A course for teachers that includes the legal and ethical aspects of teaching, and the recognition of and response to signs of abuse and neglect in children; structure, organization, and management of the American school system, with emphasis on the state and local structure in Texas. Prerequisite: Completion of Blocks I and II.

3301 Curriculum and Instruction for Classroom Teachers (1-2). A course designed for the classroom teacher with emphasis on appropriate curriculum and instruction for the classroom. This course will provide companion theory and practice to ED 3303 with field work. Includes 10 hours of field experience. Prerequisite: Completion of Block I.

3302 Developmental and Learning Theories (3-0). An integrated study of correct developmental and learning theories pertaining to human physical, cognitive, emotional and cultural development. Includes 10 hours of field experience. Prerequisite: Admitted to Block I.

3303 Methods and Materials for the Classroom Teacher (1-2). A course designed for the classroom teacher with an emphasis on practical, hands-on techniques, classroom management and field experience. Prerequisite: Completion of Block I

3309 Early Childhood: The Young Child (3-0). A study of the growth and development of infancy and early childhood with detailed case studies of a kindergarten age child.

3312 Fine Arts in the Classroom (3-0). Course is designed to introduce students to the principles of art, music, and theatre that can be related to the expressive and developmental needs of children in the Early Childhood-Sixth grade classroom. Students will learn basic techniques, activities, and strategies for integrating art, music, and theatre into the EC-6 curriculum.

3314 Language Arts/Social Studies Methods (3-0). This course explores methods and strategies in teaching language arts and social studies in the elementary school. Classroom management, instructional materials, curricula, and measurement and evaluation of outcomes are included. Field Experiences Required.

4314 Reading Skills for Content Subjects (3-0). Methods and materials for teaching skills needed for locating, interpreting, and organizing reading materials used in science, social studies, math and the other content subjects. Includes interpretation of graphic aids, skimming and scanning. Includes 10 hours of field experience. Prerequisite: Admission to Teacher Education

4322 Classroom Management (3-0). This course presents practical methods for creating a positive learning environment working with behavior problems and dealing with a range of challenges in the K-12 classroom. An online format that provides discussion opportunities during student teaching. Prerequisite: Approval of Coordinator of Field Experiences; completion of Blocks I and II.

4601 Student Teaching in the Elementary School (0-6). The course serves as a capstone experience for teacher candidates enrolled in the teacher education program. Students are required to work within their placement campuses and fulfill the responsibilities and obligations outlined in the student teaching handbook. Students are expected to serve in a teaching and leadership role in public school classroom(s) under the supervision of an experienced cooperating teacher and university supervisor. Prerequisite: Approval of the Director of Teacher Education.

4602 Student Teaching in the Middle School (0-6). The course serves as a capstone experience for teacher candidates enrolled in the teacher education program. Students are required to work within their placement campuses and fulfill the responsibilities and obligations outlined in the student teaching handbook. Students are expected to serve in a teaching and leadership role in the public school classroom(s) under the supervision of an experienced cooperating teacher and university supervisor. Prerequisite: Approval of the Director of Teacher Education.

4603 Student Teaching: All-level Certification (0-6). The course serves as a capstone experience for teacher candidates enrolled in the teacher education program. Students are required to work within their placement campuses and fulfill the responsibilities and obligations outlined in the student teaching handbook. Students are expected to serve in a teaching and leadership role in a public school classroom(s) under the supervision of an experienced cooperating teacher and university supervisor. Prerequisite: Approval of the Director of Teacher Education.

4605 Student Teaching in the Secondary School (0-6). The course serves as a capstone experience for teacher candidates enrolled in the teacher education program. Students are required to work within their placement campuses and fulfill the responsibilities and obligations outlined in the student teaching handbook. Students are expected to serve in a teaching and leadership role in a public
school classroom(s) under the supervision of an experienced cooperating teacher and university supervisor. Prerequisite: Approval of the Director of Teacher Education.

**EDUCATION CERTIFICATION (ED)**

**5100 Pedagogy of Mathematics for the English Language Learner (1-0).** This course is for teachers of mathematics and introduces basic concepts associated with the effective teaching of mathematics to English language learners (ELL) on the Math STAAR objectives. Three areas covered are: best practices for ELL (Spanish), mathematics vocabulary, and dual language problem solving.

**5138 Professional Development Appraisal System (PDAS) (1-0).** An investigation of the PDAS training for appraisers in the Professional Development Appraisal System developed by the Texas Education Agency. Included are statutory requirements, historical development, domains, criteria, indicators, exception quality, and holistic expectations. Prerequisite: ED 5236.

**5236 Leadership and Evaluation of Instruction (ILD) (2-0).** An investigation of the processes and procedures used to evaluate instructional and administrative personnel in the public schools. Special attention is given to the role of the principal and supervisor. Included in the content are programs of clinical supervision and staff development. Prerequisite: Approval of advisor.

**5300 Internship in Teaching I (0-3).** Required for post-baccalaureate certification candidates seeking to satisfy the teaching requirement by teaching full-time as a teacher of record in an accredited school, jointly supervised by University faculty and school district personnel. This is the first semester of the Internship. Prerequisite: Must be accepted in the Post-Baccalaureate Initial Certification Program.

**5301 Internship in Teaching II (0-3).** Required for post-baccalaureate certification candidates seeking to satisfy the teaching requirement by teaching full-time as a teacher of record in an accredited school, jointly supervised by University faculty and school district personnel. This is the second semester of the Internship. Prerequisite: ED 5300. ED 5301 must be taken the next consecutive long semester after successful completion of ED 5300; must be accepted in the Post-Baccalaureate Initial Certification Program.

**5302 The Principalship (3-0).** A course designed especially for elementary and secondary school principals in which the role, scope and function of the principalship is thoroughly studied.

**5305 Technology in the Educational Setting (3-0).** This course will focus on technology for content-area instruction, instructional software, multimedia presentations, telecommunications, data organization, and student projects. Issues regarding equity, copyright law and fair use will be included.

**5306 Assessment of Individual Intelligence (3-0).** Required for educational diagnostician certification. Students will administer, score, and interpret major assessment instruments used to determine eligibility and services provided through special education. Legal requirements and ethical practices will be stressed. Prerequisite: Instructor’s approval.

**5307 Graduate Research (3-0).** A course designed to broaden the perspectives of graduate students and to introduce them to the techniques of research and the various fields of graduate work offered on this campus. Must be completed in first 12 sch.

**5308 Foundations of Reading (3-0).** A study of reading problems from the standpoint of maturation and growth of the pupil, together with the adoption of reading materials to the needs and stages of reading readiness of the child.

**5310 Organization and Structure of the Public School Curriculum (3-0).** A course designed for post-baccalaureate students pursuing teacher certification. Emphasis will be upon developmental appropriate curriculum design, qualitative and quantitative evaluation, and classroom organization.

**5311 Improvement of Instruction in the Public School (3-0).** A course designed for post-baccalaureate students pursuing teacher certification. Emphasis will be upon learner-centered practices in specific academic areas, and effective teaching behaviors for diverse learners.

**5312 Advanced Survey, Exceptional Children (3-0).** A survey of exceptional children involving categorical identification, terminology, advocacy litigation, legislation at the national and state levels, and state guidelines, involving special populations.

**5313 Career Development and Life Planning (3-0).** A study of career development theory; systems of career awareness, exploration, preparation, and growth, and their application to career counseling, career guidance, career decision making, life planning, and career education. Prerequisite: ED 7302.

**5314 Personality and Counseling Theory (3-0).** A study of human personality dynamics as related to counseling theory and practice, emphasis on modern humanistic and phenomenological theories as they apply to counseling and developmental guidance.

**5315 Assessment in Counseling (3-0).** An introduction to testing and assessment for use in counseling individuals and groups, including: basic psychometric theories and approaches to appraisal; psychometric statistics; factors influencing appraisals, data and information gathering; and use of appraisal results in the helping process. Also addresses test selection, test administration, and the dynamics of test interpretation.
5316 Diversity in Public Education (3-0). A study of theory, research and methodology relative to the needs of multicultural and special student populations.

5317 History, Philosophy, and Trends in Education (3-0). This course is a survey of the historical, philosophical and contemporary landscape of schools in the United States. Emphasis is placed on enduring debates about the purposes of education in a democratic society.

5318 Management and Development of Human Resources (3-0). A comprehensive study of the human resource function in public schools. Included are job analyses, staffing needs, recruitment, selection, placement, induction, evaluation, appraisal, and development of school personnel at all levels.

5319 School Law (3-0). A study of general laws applying to all states concerning education, and in-depth study of cases and decisions affecting current education.

5320 Advanced Methodology for Exceptional Children (3-0). An advanced study of ways to organize, modify, and supplement the traditional curriculum, to provide appropriate learning activities, and to evaluate progress on an individual basis for the exceptional student.

5321 Foundations of Special Education Law (3-0). A course designed to provide an understanding of the laws governing the area of special education, focusing on current law as such as IDEA, Section 504, and ADA, as well as the legal aspects of the development and implementation of IEPs and IFSPs. Previous cases impacting special education will be examined.

5322 Behavior Management (3-0). An in-depth look at classical and operant conditioning principles from the standpoint of human application, from the classroom to the home, from private practice to institutional placements. Actual behavior modification project included. Prerequisite: Approval of instructor.

5323 Appraisal of Educational Disabilities (3-0). Required for educational diagnostician certification. Students will administer, score, and interpret major academic achievement tests used to identify educational disabilities, and design appropriate instruction and services. Students will examine current trends in programs designed for early identification and intervention of possible educational disabilities. Factors involved in multicultural assessment will be addressed. Prerequisite: Instructor’s approval.

5324 Advanced Educational Psychology (3-0). An advanced study in the sets of circumstances that are present when human learning occurs, including the conditions that govern learning beyond the traditionally studied prototypes of response conditioning and association.

5325 Advanced Educational Remediation (3-0). An advanced study of ways to design and implement instructional intervention for the remediation, compensation, or adjustment to the exceptional learner’s deficiency in order to design and implement individualized instruction programs. Additional focus on functional assessment of behavior and academic performance in order to develop positive behavioral supports as well as intervention plans.

5327 Readings and Research (3-0). A course taught on an individual basis wherein special topics are studied. Course content varies according to needs of the student. Prerequisite: Approval of advisor and instructor.

5330 Introduction to School Administration (3-0). An overview of school administration that includes roles, functions and duties of those who administer and supervise in the schools. Policy development, planning, goal setting, program evaluation, and accreditation standards are also included.

5350 Nature of Gifted and Talented Students (3-0). Introduction to the intellectual, social, and emotional characteristics of gifted and talented individuals with emphasis on educational needs. Includes varied concepts of giftedness and research findings on creativity.

5351 Curriculum for Gifted and Talented Students (3-0). Methods and materials to meet the needs of gifted, talented, and creative students. Individual assessment, curriculum modification, instructional materials, and classroom organization will be covered. Includes theories and models of creativity and high-level thinking.


5353 Program Planning for Gifted and Talented Students (3-0). Instruments and procedures for identification of gifted, talented and creative students. Program models and evaluation and implementation of programs are also covered.

5360 Professional Roles and Responsibilities (3-0). A course that provides an understanding of the roles and responsibilities of teaching that includes knowledge of legal and ethical issues and requirements for teachers; professional knowledge and skills needed for communicating and collaborating with professional colleagues, the community, and families; and the importance of family involvement in children's education. A course designed to meet the needs of those seeking initial teacher certification through the PBICP alternative certification route.

5600 Clinical Teaching in the Post Baccalaureate Program (6-0). This is for Post Baccalaureate students who wish to satisfy the teaching experience requirement for certification through clinical teaching in the public schools. Prerequisite: Approval of the Director of Education
5627 Clinical Teaching in the Post baccalaureate Program (0-6).  The course serves as a capstone experience for teacher candidates enrolled in teacher education program. Students are required to work within their placement campuses and fulfill the responsibilities and obligations outlined in the student teaching handbook. Students are expected to serve in a teaching and leadership role in a public school classroom(s) under the supervision of an experienced cooperating teacher and university supervisor.

6109 Administration of the UIL Program (1-0). A course designed to provide students the opportunity to study the University Interscholastic League organization and operation for governing interscholastic competition in the public schools of Texas.

6304 Organization and Theory in Administration (3-0). Current trends, issues and problems in the elementary and secondary schools involving the planning, organizing, administering and evaluating the total school system.

6307 School Public Relations (3-0). A course designed to acquaint the school administrator and the teacher with the techniques of dealing with the public in such a way as to give an intelligent understanding of the aims, the scope, the achievements, and the problems of an educational program.

6308 Advanced Human Growth and Development (3-0). A study of the human life span from conception to death, with emphasis on childhood and adolescence, and the implications for effective academic and interpersonal experiences.

6311 Emergent Literacy and Language Development (3-0). A course that focuses on the correlation between the development of language and literacy during the preschool, kindergarten, and primary grades. It is designed to provide students with an understanding of how language is acquired and how competence in oral language supports the development of reading and writing. Prerequisite: ED 5308 or enrollment in ED 5308 concurrently.

6313 Teaching Reading in the Content Areas (3-0). A course that focuses on the development of reading skills in elementary, middle, junior high, and high school subject area content classes. Multiple literacies and their classroom applications are examined, strategies for developing reading fluency and comprehension are emphasized, and methods for expanding vocabulary are included.

6314 Diagnosis and Correction of Reading Disabilities (3-0). A course that focuses on the symptoms and causes of reading disabilities, methods of assessing and diagnosing reading disabilities, and strategies for intervening, remediating, and correcting reading disabilities. Opportunities for assessing, diagnosing, and designing intervention programs are included. Prerequisite: ED 5308.

6315 Design and Implementation of the Instructional Program (3-0). A course which examines curriculum theory and development in grades K-12; emphasis on trends, development of curricular units and courses of study, and on federal, state and local curricular influences.

6316 Seminar in Counseling (3-0). Issues and topics in counseling; may be repeated twice if course content varies.

6317 Organization and Supervision of Reading Programs (3-0). The organization and administration of regular and corrective reading programs in the public schools. The emphasis is on the integration of reading and writing skills and diagnostic principles and procedures in the classroom instructional program.

6318 Literacy Through Literature (3-0). A course that focuses on using literature in the elementary, junior high, and secondary classroom to teach and support the skills necessary for independent reading. Children's and young adult literature is explored through different genres and cultures, current technology applications, and informative evaluation criteria. Prerequisite: ED 5308.

6320 School Support Services (3-0). A study of the management of school services for which a chief administrator of an educational unit is responsible. Course content includes attendance, accounting, physical plant and facilities, construction and maintenance, human resources, nutrition, and transportation.

6341 Psychopathology (3-0). This course examines existing concepts of mental illness and offers a healthier, client-freeing approach. Presentations on medications, stress and the immune system, mental status exam, and cases exemplifying diverse responses to human suffering are included. Prerequisite: Approval of advisor.

6342 Addictive Disorders (3-0). Introduces counseling students to the field of addictions, including basic pharmacology, conceptualizations or addictions, assessment, models of treatment, prevention, and family issues. Prerequisite: Approval of advisor.

6344 Counseling in a Multicultural Society (3-0). Designed to help students develop knowledge, skills, and attitudes needed to provide effective counseling in a multicultural and pluralistic society. Issues addressed include awareness of one's own worldview and that of others; racism, stereotyping, and discrimination; demographic community, and family characteristics of various minority groups; and the application of theory, technique, and ethics to multicultural counseling. Prerequisite: Approval of advisor.

6345 Family Counseling (3-0). A survey of the field of family counseling, examining history, theories, and practice. Includes discussion of ethical, legal, and other professional issues related to family counseling. Prerequisite: Approval of advisor.

6346 Ethical and Legal Issues in Counseling (3-0). A course to familiarize students with ethical and legal practice in the field of counseling; included are standards of ethical practice and their application to the various areas of counseling, ethical decision-making, major ethical and legal issues, and ethical responses to unethical behavior. Prerequisite: ED 5314.
6371 History and Principles of Career and Applied Technology Education (3-0). A course in the history, development, and operation of career technology education programs, including the impact and implications of state and federal legislation and regulation.

6372 Information Resources for Career Development (3-0). A course designed to train counselors in the collection, evaluation, and interpretation to data related to the labor market and market trends. Emphasis is placed upon sources of information (government, industry, professional), and the means by which such information can be used by teachers, counselors, students, and parents.

6373 Career and Technology Student Identification, Placement, and Follow-up (3-0). A course designed to develop counselor competencies in the identification, placement, and follow-up of students who may participate in career and technology education programs. Emphasis is placed on involvement at the appropriate grade levels as an alternative or in addition to college preparation for career entry and advancement.

7211 Practicum in Superintendency I (2-0). This course provides a conduit for students enrolled in the fall semester of the superintendent certification program to gain the required clock hours of superintendent practicum for the fall courses in the superintendent certification program. This course will serve the purpose of a single depository for students who are working on their assistant/deputy school superintendent in a public school in Texas. Prerequisite: Full admission to the Superintendent Certification Program

7212 Practicum in Superintendency II (2-0). This course provides a conduit for students enrolled in the spring semester of the superintendent certification program to gain the required clock hours of superintendent practicum for the spring courses in the superintendent certification program. This course will serve the purpose of a single depository for students who are working on their assistant/deputy school superintendent in a public school in Texas. Prerequisite: Full admission to the Superintendent Certification Program

7301 Clinical Practice in Counseling (3-0). Provides a conceptualization of the counseling process and clinical interviewing; emphasizes development of the counseling skills necessary to function appropriately as an entry-level counselor in a variety of settings. Training is done through role-play, coaching, and experiential activities. Includes presentation of case studies applicable to current issues, multicultural concerns, legal decisions, and ethics in the field. Prerequisites: Must be taken in the final semester of degree coursework.

7302 Management of Guidance, Counseling, and Human Services Programs (3-0). A professional orientation course covering program development, organization, management and accountability; professional organizations; codes of ethics; legal aspects of practice; standards of preparation; position functions. Prerequisite: ED 5314

7303 Techniques of Counseling (3-0). The initial course in the sequence of counseling practice courses which applies knowledge of ethical practice, counseling theory, and human development to the process of therapeutic change and growth; emphasis is on basic counseling skills and various techniques in individual practice and crisis intervention. Prerequisite: ED 5314.

7304 Educational Leadership for Principals (3-0). A critical examination of the theory and practice of leadership. The behaviors, skills, attributes, beliefs, and attitudes for leadership will be researched and investigated. Special attention will be given to the difference between the concept of leadership and the concept of management in organizations and preparation for the TExES examination (068) for Principals.

7305 Workshop in Education (3-0). A special topics course in which the course content varies according to the instructor's course design. May be repeated when the course content varies.

7306 Superintendent Leadership (3-0). This course will provide a comprehensive overview of the leadership aspects of the school superintendency. This would include dealing with the board, the public, the school community and all stakeholders within the district and how to view the big picture of being the CEO of a school district, including keeping all entities fully informed on a continuing basis, long range planning on all levels, leading and managing campus-based planning committees and district-planning committees, curriculum development and management, and all else pertaining to school district leadership. Prerequisite: Full admission to the Superintendent Certification Program

7307 Advanced Seminar in Administration (3-0). A course designed especially for preparing administrators for the superintendency; emphasis on decision-making modes and leadership change strategies.

7308 The Superintendency (3-0). This course is an introduction to school superintendency which would provide a broad overview of what a practicing superintendent is required to do as well as the legal implications of the position. Additionally, the expectations of the Sul Ross State University Superintendency Certification program of study would be clearly delineated. Additionally, 75 clock hours of internship with a practicing superintendent in which the students will be exposed to the daily routine of the superintendent will be required. Prerequisite: Full admission to the Superintendent Certification Program

7309 State and Federal Programs in Public Schools (3-0). A study of federal and state programs currently being used in public schools.

7310 Public School Buildings (3-0). A study of past and present building architecture with a special emphasis on building types.
7311:1 and 7311:11 Superintendent Internship (0-3) and (0-3). A course which provides the student with a minimum of 300 clock hours of reality experiences in the superintendent in a T.E.A. accredited public, private, or parochial school; students work with a superintendent, assistant superintendent, or business manager in the conduction of everyday central office administrative duties. Prerequisite: Approval of advisor and have completed the mid-management/principal certification program. Clock hours must be accumulated during two consecutive semesters. 7311:1 is required for enrollment in 7311:11.

7312 Practicum in Reading (0-3). A course that provides internship experiences for students seeking the reading specialist certificate. It consists of a 160-hour, 15-week field experience designed to allow students opportunities to put into practice the knowledge gained throughout the program. Students will be supervised by university faculty as they administer and interpret diagnostic assessments, plan and conduct intervention programs, and document the reading development of their case studies. Prerequisite: Must have completed 18 hours of reading or be in last semester of coursework; consent of advisor.

7313 Practicum in School Administration (0-3). A course which provides reality experiences in the principalship in a T.E.A. accredited public, private, or parochial school; students spend a minimum of 160 clock hours working with a principal and/or assistant principal in the conduction of everyday administrative duties. Students will take the TExES examination and additional coursework and re-testing is required if students do not pass on the initial attempt. Prerequisite: Approval of advisor and completion of a minimum of 18-24 semester hours of mid-management coursework.

7315 Group Processes in Guidance and Counseling (3-0). A course which explores numerous theoretical models, exposes students to various techniques and principles, and includes class presentations, role play and opportunity for "hands on," experiential involvement in a group. Prerequisite: ED 5314 and 7303.

7316 Practicum in Guidance and Counseling (0-3). A course that provides reality field experiences in guidance and counseling in an appropriate school or agency setting; students spend a minimum of 160 clock hours under supervision in the conduction of counseling and guidance activities. May be taken twice, with permission of advisor. Prerequisite: Approval of advisor and completion of a minimum of 27-30 semester hours of counseling coursework.

7317 Internship in Guidance and Counseling (0-3). A course that provides field supervision and high-quality professional development throughout the entire term of the internship, including all extension of the initial term. Required for and restricted to probationary certification candidates seeking to satisfy the school counseling requirements by working full time as a school counselor of record in an accredited school, under supervision of the appointed counseling program University faculty. Prerequisite: Must be accepted in the school counseling probationary certification program. May be taken repeatedly.

7318 Practicum in Special Education (0-3). A course which provides field experience in special education in a T.E.A. accredited public, private, or parochial school or identified agency. Students spend a minimum of 160 clock hours under supervision of designated mentor and university faculty. Prerequisite: Instructor’s approval.

7319 Practicum in Gifted and Talented (0-3). A course which provides field experience in gifted and talented education programs in a T.E.A. accredited public, private, or parochial school. Students spend a minimum of 100 clock hours under the supervision of school and university faculty. Prerequisite: Completion of a minimum of 12 hours of gifted and talented course work and permission of the instructor.

7321 Superintendent/School Board Relations (3-0). This course would provide a comprehensive view of the legal ramifications a practicing superintendent faces both on a daily basis and long range and would specifically focus on how this affects the working relationship with the Board of Trustees. This would include dealing with the Board of Trustees on/with the following: policy matters, working with human resources, learning to keep abreast of impending and new enacted legislation and working with the board and school community to develop long range predictions as to how possible future legislation and proposed legislation will affect the school community. Prerequisite: Full admission to the Superintendent Certification Program.

7322 Superintendent Finance Issues (3-0). This course would provide a comprehensive view of all things financial with which the practicing school superintendent must deal on both a daily basis and as an aspect of long range planning, including budgeting, fiscal growth, facilities planning and the politics of each aspect of finance. Prerequisite: Full admission to the Superintendent Certification Program.

EDUCATION SPECIALIZATION (ED)

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2311 Diversity in American Society (3-0). Education Specialization Survey of diverse populations found in American society including issues of race, ethnicity, gender, age, religion, sexual orientation, exceptionalities and socio-economic status.

3307 Technology in the Instructional Setting (3-0). Education Specialization This course prepares teachers to plan, organize, deliver, and evaluate instruction that incorporates the effective use of current technology. Includes 20 hours of field experience.

3308 Language Acquisition and Emergent Literacy (3-0). Education Specialization A course in language acquisition in children. Developmentally appropriate activities, diversity, and individual learning styles found in the educational setting are discussed as they facilitate language and literacy in young children. Includes 20 hours of field experience.

4303 Measurement and Evaluation (3-0). A survey of available standardized educational tests and their interpretation and uses, and principles of test development.
4306 Survey of Exceptional Children (3-0). Education Specialization A survey of exceptional children involving categorical identification, learning characteristics, instructional intervention, and adjustment needs.

4308 The Teaching of Reading (3-0). Education Specialization Intensive study of reading assessment, readiness, beginning reading, remedial reading, reading devices, and the use of audio-visual aids in reading.

4313 Reading Comprehension and Enrichment (3-0). Education Specialization Emphasis on divergent learning in the following reading areas: vocabulary development, critical-analytical reading, research and reporting, and appreciative reading. Includes 20 hours of field experience.

4315 Reading Diagnosis and Remediation (3-0). Education Specialization Strategies for teaching reading to pupils who have problems in auditory learning, visual learning, language learning, and the slow learner. Prerequisite: ED 4308.

4318 Word Identification Skills (3-0). Education Specialization The study of the skills involved in word identification in the context of language concepts. Attention will be given to phonics, structure, context, whole word skills, and the teaching strategies useful to increase the students’ knowledge of words and word analysis skills. (No prerequisite. Suggested as a foundation course for students specializing in reading and open to other students.) Includes 20 hours of field experience.

4327 Readings and Research (3-0). Education Specialization A course taught on an individual basis wherein special topics are studied. Course content varies according to needs of the student.

4399 Special Topics (3-0). Education Specialization A course covering various topics in the field of education. May be repeated for credit when topic varies. Prerequisite: Approval of advisor.

ENGLISH (ENG)

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1301 (ENGL 1301) Composition I (3-0). This is an introductory college course which emphasizes the composition of short essays and reading skills. Required of all students. Prerequisite: English 0300 or sufficient English, verbal, and reading scores to meet the requirements of English 0300 as described above.

1302 (ENGL 1302) Composition II (3-0). This course includes the study of various writing modes, with emphasis on exposition, critical analysis, and research techniques. Students will write well-developed, critical, persuasive, documented papers. Required of all students. Prerequisite: English 1301.

All sophomore and advanced English courses require completion of the freshman English courses as a prerequisite.

2306 Topics in Literature (3-0). A sophomore-level study related to literature. Topics may include Introduction to Poetry, Rural Literature, Multicultural Literature. May be repeated for credit when the topic varies. Prerequisite: ENG 1301 and ENG 1302

2310 Introduction to Folklore (3-0). An introduction to folklore that may include genres of folklore, fieldwork techniques, cultural contexts for folklore, and folklore in literature.

2311 (ENGL 2311) Technical and Business Writing (3-0). The study and practice of writing technical and professional reports related to scientific, industrial, and commercial fields.

2312 Writers of the American West (3-0). A study of writers of the American West from the nineteenth century to the present. Readings may focus on works by one author or on works by several authors.

2315 Environmental Literature (3-0). An ecocritical survey of literature that reflects relationships among humans, animals, and nature. Readings will span literature from rural, agricultural, Native American, Hispanic, and world cultures.

2322 (ENGL 2322) British Literature I (3-0). English literature of the Anglo-Saxon Period, Middle Ages, Renaissance, and Age of Reason.


2327 (ENGL 2327) American Literature I (3-0). A study of American literature from Colonial times through the Civil War.

2328 (ENGL 2328) American Literature II (3-0). A survey of American literature from the Reconstruction to the Second World War.

2331 (ENGL 2331) World Literature (3-0). A study of masterpieces of world literature from ancient times to 1600.)

2341 (ENGL 2341) Forms of Literature (3-0). Techniques of critical analysis of major literary types: prose, fiction, poetry, and drama.

3301 Contemporary Literature (3-0). A study which emphasizes works of fiction, drama, and poetry since 1960.

3303 Structure and History of the English Language (3-0). The structural essentials of English, with some treatment of the historical development of the language, from Anglo-Saxon to modern English.
3304 *Shakespeare* (3-0). Shakespeare's principal histories, comedies, and tragedies.

3305 *Principles of Linguistics* (3-0). Introduction to the study of language with attention to phonology, morphology, and syntax. Includes study of the similarities and differences of English and other languages, especially Spanish.

3306 *Language and Culture* (3-0). A study of the function of language within social and cultural contexts. Course is cross-listed with Anthropology and Sociology.

3307 *Sociolinguistics* (3-0). A study of the relationship between language and society including language varieties, speech communities, language and culture, and speech acts and speaking.

3308 *Language and Gender* (3-0). A study of the role of language in the construction of gender identities, in the use of direct and indirect speech acts, in the creation of gendered metaphors and stereotypes, and in the concept of “language of power.”

3311 *Children's and Adolescent Literature* (3-0). A survey of children's and adolescent literature and a familiarization with outstanding authors and illustrators of that literature. Includes the application of literary evaluation to children's and adolescent literature and a survey of resource. Prerequisite: English major or Interdisciplinary Studies major.

3312 *Advanced Composition* (3-0). An intensive study of writing techniques useful to the advanced writer. Areas of concentration include grammar, rhetorical strategies, and style.

3320 *Creative Writing: Fiction* (3-0). Emphasis on writing short stories. Includes the study of ways to examine and incorporate techniques used by established short story writers into original short fiction. Focuses on writing and critiquing original short stories.

3321 *Creative Writing: Poetry* (3-0). Emphasis on poetry. Provides intensive study of various poetic forms. Focuses on writing and critiquing original poetry.

3322 *Creative Writing: Nonfiction* (3-0). Emphasis on writing creative nonfiction (creative essays). Includes the study of various rhetorical devices used in effective creative nonfiction. Focuses on writing and critiquing original creative nonfiction.

3323 *Creative Writing: Nature Writing* (3-0). An intensive study of various forms of nature writing. Focuses on writing and critiquing the natural history essay, travel writing, the ramble, and others.

3324 *Creative Writing: Introduction to Novel Writing* (3-0). An intensive study of techniques and aims unique to writing and critiquing original novel chapters.

4300 *Portfolio Capstone Course* (3-0). A course required of English majors in which they compile the portfolio of materials which must be submitted to the department for its assessment of program learning outcomes. Students enroll in this class during their final semester in the English undergraduate program.

4302 *Southwestern Literature* (3-0). A study of the literature of the Southwest with attention given to its regional characteristics and the social background that produced it.

4303 *Literary Studies* (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Autobiography, Multicultural Literature, Graphic Novels. May be repeated for credit when topic varies.

4304 *Photography for Writers* (3-0). A survey of basic photographic and written skills needed for publication and visual literacy. Emphasis on developing photographs and text as matched pairs in order to enhance the aesthetic value and meaning of both.

4309 *Readings and Research* (3-0). Individually guided study and research in English, American or international literature or the English language. May be repeated for credit when the topic varies.

4310 *Topics in Folklore* (3-0). Emphasis on folklore in distinct cultures and literature. Topics may include Western, African-American, Women's, Native American, American, or Multicultural folklore. May be repeated for credit when topic varies.

4312 *Women in Literature* (3-0). A study of women writers, images of women in literature and feminist literary criticism. Topics may include Regional Women Writers, 19th Century Women Novelists, Women's Autobiography, Contemporary Women Poets. May be repeated for credit when topic varies.

4315 *Film as Narrative* (3-0). A study of narrative in cinematic form, considering both original film creations and adaptation from other literary genres.

4316 *Teaching Language Arts* (3-0). A study of the development of reading and writing in English, focusing on applying this knowledge to the language arts classroom. Preparation for the TExES certification exam in English Language Arts and Reading 8-12.

4318 *Arthurian Literature* (3-0). A study of the Arthurian literary tradition from the Middle Ages to the present. The course also emphasizes the impact of Arthurian themes and characters on art and film.
4320 International Literature (3-0). A study of contemporary international, often postcolonial, literature by authors from countries such as Australia, New Zealand, India, the Caribbean, and various African nations.

4322 Predators in Literature (3-0). A study of the way large charismatic predators (lions, tigers, wolves, jaguars) are represented in literature. Perspectives include those from folklore, myth, symbol, religion, and science.

5300 Studies and Research Techniques in Bibliography and Critical Theory (3-0). An introduction to graduate research methods in literature, including experience in enumerative and analytical bibliography, and to critical theory as applied to literature.

5302 Seminar: Creative Writing (3-0). A writing workshop course which may be devoted to fiction, poetry, nonfiction, or other such genres. May be repeated for credit when topic (genre of writing) changes.

5304 Studies and Research Techniques in General Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Contemporary Literature, Folklore, and Multicultural Literature. May be repeated for credit when the topic changes.

5305 Studies and Research Techniques in English Teaching Methods (3-0). Recent trends and discoveries in teaching methods and learning process as related to the teaching and learning of rhetoric, composition, literature, or creative writing. May be repeated for credit when the topic varies.

5306 Seminar: Studies and Research Techniques in English Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Shakespeare; British Novel; Victorian Poets; Contemporary Fiction. May be repeated for credit when the topic varies.

5307 Seminar: Studies and Research Techniques in American Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Thoreau; American Short Fiction; Southern Fiction; Twentieth-Century Fiction. May be repeated for credit when the topic varies.

5308 Studies and Research Techniques in the English Language (3-0). A study of specific problems concerned with the English language. May be repeated for credit when the topic varies.

5309 Readings and Research (3-0). Individually guided research in English or American literature or the English language. May be repeated for credit when the topic varies.

6301 Thesis Proposal (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the third semester of graduate study. The student will enroll each semester of summer term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the College, and filed in the Office of the Executive Vice President and Provost for Academic Affairs.

FINANCE (FIN)

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FIN 1101 Personal Financial Literacy (1-0). The topics to be covered will include, but are not limited to, budgeting, managing debt and credit, saving and investing, preventing identity theft, and retirement planning.

FIN 3340 Corporation Finance (3-0). Money and Capital Markets, financial news and investor services; and gives a broad view of the entire financial field with special emphasis on discounted cash flow analysis, stock and bond valuation models, financial statement analysis, capital budgeting, cost of capital, and working capital management. Prerequisite: ACC 2301, MATH 1314, GBA 3352

FIN 4342 Investments (3-0). Sources of information for investors; investment planning; securities selection; types of stocks and bonds; investment companies. Prerequisite: FIN 3340

FIN 5306 Seminar in Financial Management (3-0). Scope and objective of financial management in the modern corporation; nature and mathematical formulation of underlying relationship in financial decision-making. Theories of capital budgeting, cost of capital, and investment.

FINE ARTS (FA)

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1302 (MUSI 1306) Music Appreciation (3-0). This course develops music appreciation through an exploration of the relationship between musical symbolic sounds and technological innovations with a focus on instrument construction and musical composition. The course familiarizes students with music technology in a broad array of historical and geographical music environments through readings, lectures and hands-on exercises covering the timbres, scales, rhythms and forms that instruments produce, the contexts people play instruments in, and the reasons why they play.
1304 Art History for the Designer (3-0). The course is a survey of the visual arts of the world tailored specifically to the needs of designers. It will cover all regions and periods of the visual arts and focus on how students can utilize historical styles for their own design work. Emphasis will be placed on how to replicate authentic and historical styles for a variety of design purposes, including gaming, print, costume, theater and communication design applications. This course meets the multicultural requirement.

1315 (HUMA 1315) Fine Arts Appreciation (3-0). A survey course which introduces students to selected fine arts areas. The course is taught in three blocks, one each for art, music, and theatre. A specialist in each area will present information of a practical and historical nature, emphasizing aesthetic values and accessibility for lay persons.

2301 Special Topics (2-1). A course dealing with topics in the study of fine arts, such as investigations into the history of theatre, film, dance, music and/or the visual arts. Course may be repeated for credit.

2302 Intro to Digital Design (3-0). A course in digital-imaging techniques using Adobe Photoshop. The course will focus on digital image editing, digital painting and design.

2303 Special Topics in Multicultural Visual & Performing Arts (3-0). This course introduces the student to topics in theatre and art from a multicultural viewpoint or women’s studies perspective with particular emphasis given to the social, religious, political and historical relevance of these topics throughout the non-western world.

2305 Design II: Three Dimensional Design (3-0). This course is an introduction to the principles of three-dimensional design, and the construction of three-dimensional space as a design element. This course will utilize traditional and computer-based approaches to teach the student to develop compelling three-dimensional designs for product and industrial design, architecture, exterior and interior design, gaming and virtual environments as well as a variety of other applications.

3301 Arts Administration (3-0). An introduction to the business side of performing and visual arts. Will include promotion/merchandising, organizational management, legal aspects, fund raising, and career planning/development.

3302 Advanced Digital Imaging (3-0). A course in advanced digital imaging techniques including Photoshop and Illustrator. The course will focus on advanced digital image editing, digital painting and illustration.

3303 Field Studies (3-0). A discussion of subjects such as writing reviews, press releases, visiting professional public, private and non-profit venues, interviews with artists and behind the scene looks at museum, theatres, foundations and studios. Class also includes resume and portfolio development, career choices, marketing and sales, and other areas which are of interest and importance to all Visual & Performing Arts students/ (Includes major field trip out of the area. Required for all majors - preferably taken in junior year.)

### FRENCH (FREN)

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1411 (FREN 1411) Beginning French 1 (4-0). An introductory course for students with no previous knowledge of the language. Focus on the basic skills of listening, speaking, reading, and writing.

1412 (FREN 1412) Beginning French II (4-0). A continuation of French 1401 with additional practice in the four basic skills of listening, speaking, reading, and writing. Prerequisite: French 1411 or consent of the instructor.

2311 (FREN 2311) Intermediate French 1 (3-0). Third semester of college French. A continuation of French 1411 and 1412. Continued development and review of speaking, reading, and writing skills in French. Includes literary and cultural readings. Prerequisite: French 1412 or consent of instructor.


### FRESHMAN LEADERSHIP PROGRAM (FLP)

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1101 Freshman Leadership Program (1-0). This course is developed for students who exhibit leadership potential as student leaders. Students receive a scholarship to attend and are expected to lend their talents to the Sul Ross State University through student clubs and organizations. This course will cover basic leadership theory and provide practical application in the educational content. It is an introductory course covering a broad range of leadership topics from self-development and understanding self to group behavior, organizational design, ethics and teamwork. Prerequisite: Permission of instructor.

2101 Freshman Leadership Program Sophomore Assistant (1-0). This course is developed for students who exhibit leadership potential in the Freshman Leadership Program (FLP). Students receive a scholarship to attend and are expected to lend their talents to the Sul Ross State University through student clubs and the Freshman Leadership Program. It is an introductory course covering a broad range of leadership topics from self-development and understanding self to group behavior, organizational design, ethics and teamwork. Prerequisite: FLP 1101

### GENERAL BUSINESS ADMINISTRATION (GBA)

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GBA 1301 (BUSI 1301) Business Principles (3-0). Introduction to the role of business in modern society. Overview of business functions as well as introduction various business and societal issues, including contemporary dimensions of business as ethics, social responsibilities, changes in the workplace and international dimensions of business are considered.

GBA 2354 Management Communication (3-0). Oral communication skills for application into interpersonal, small and large groups, and public speaking situations are studied in depth. Strategic and practical communication methods are applied to support the development of effective and ethical oral presentation skills at all levels and in business and public settings. Students use critical thinking skills to analyze business communication case studies in both oral and written forms. Communication in the global business environment is studied.

GBA 3350 Business Information Systems (3-0). Introduction to information systems in business. Hands on exposure to business applications software in microcomputer laboratories. Practical experience in the principles of information technology.

GBA 3351 Business Law (3-0). Legal aspect of business transactions with emphasis on the law of contracts, agency, bailment, and commercial paper.

GBA 3352 Quantitative Systems in Business (3-0). Statistical data analysis and statistical inference. Estimation of population parameters, hypothesis testing, linear regression and correlation. Will demonstrate computer or microcomputer technology in handling statistical data. Prerequisite: Math 1314

GBA 4350 Advanced Readings and Research in Business Administration (3-0). Selected seminar topics in business administration.

GBA 4355 International Business (3-0). Covers the economic underpinnings of free trade; investment and trade barriers; foreign direct investment; the multi-national enterprise; assessing the international business environment; and global organization and strategy.

GBA 5301 Business Strategy (3-0). Required of all MBA students. Emphasis on the case method. Also emphasis on business simulations, business reporting techniques, and in-depth integration of course content across the MBA curriculum. Prerequisite: 15 SCH of MBA course work.

GBA 5302 Readings and Cases in Business Administration (3-0). Covers one or more special fields. May be repeated for credit as topics change.

GBA 5304 Management Information Systems (3-0). Function of management information systems, decision support systems, executive information systems, and expert systems in business decision making, planning, and control. Management participation information system design and development.

GBA 5308 Problems in Business Administration (3-0). An investigation, analysis, and discussion of business problems, trends, policies, and special topics. May be repeated for credit as topics change.

GBA 5309 Quantitative Analysis and Decision Theory for Business (3-0). Techniques and application of quantitative tools and theories useful for analyzing problems and making decisions. Utilizes microcomputers.

GENERAL STUDIES (GS)

4100 Senior Assessment (1-0). Senior Assessment is a capstone course in which the students demonstrate proficiency in research and analysis through the engaging in original research. Prerequisite: Senior standing (90 SCH completed)

GEOGRAPHY (GEOG)

1302 (GEOG 1303) World Regional Geography (3-0). A regional study of the world in a survey course which uses the basic elements as tools for observation and analysis in revealing the interrelationships of features involving man and different areas of the earth.

2302 Geography of the United States and Canada (3-0). An overview of significant physical and human elements of the United States and Canada and their relationships within a setting of fourteen specific regions.

2307 (GEOG 2312) Economic Geography (3-0). Introduces the principles that explain the locations of economic activities. Actual patterns of economic activity are compared to what would be predicted from the principles and reasons advanced for the discrepancies. Visits are made to local economic enterprises to learn about locational decisions and economic organizations.

2308 Readings and Research. (0-3). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3301 Geography of Texas (3-0). A topical study of the physical and cultural elements of Texas which reveal the great diversity of a growing and vibrant state. Features examined include the landscape, cultural groups, and various economic activities.

3302 Readings and Research in Geography (3-0). An individualized course with varying topics to be chosen by the instructor in
consultation with the student. May be repeated once.

3303 Special Topics in Geography (3-0). Selected topics in Geography. May be repeated for credit when the topic varies.

3401 Interdisciplinary Geographic Information Systems (2-4). This course is designed to introduce the concepts of computer-based spatial data handling, referred to as geographic information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data, sources, input, manipulation, and output presentation. There are no prerequisites, but it is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, or archaeology. This course is cross-referenced with Geology 3401.

3412 Geomorphology (3-3). An introduction to surficial processes and landforms. Understanding the landscape upon which we live and depend can be of vital importance to nearly everyone from the homeowner to the civil engineer. Fluvial, glacial, coastal, groundwater and weathering processes will be studies along with lithological and structural influences. Labs will include map and photo interpretation and field studies. This course is cross-referenced with Geology 3412. Prerequisite: Geology 1303/1103.

GEOLOGY (GEOL)

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1103 (GEOL 1103) Physical Geology Lab (0-2). Laboratory exercises supporting GEOL 1303 including principles of physical and historical geology.

1104 (GEOL 1104) Historical Geology Laboratory (0-2). Laboratory exercises supporting GEOL 1304 including principles of physical and historical geology. Prerequisite: Geology 1303

1105 (GEOL 1105) Environmental Geology Laboratory (0-2). Laboratory will consist of the study of a variety of environmental problems.

1303 (GEOL 1303) Physical Geology (3-0). This course covers the nature and properties of the materials which make up the earth, the distribution of these materials throughout the earth, the processes (volcanism, glaciation, stream erosion, weathering, etc.) by which these materials are formed, altered, transported, and deformed and the nature and development of the landscapes.

1304 (GEOL 1304) Historical Geology (3-0). A study of the record of life forms (fauna and flora) that evolved throughout the geologic time 4.5 billion years ago up to the occurrence of man. It also covers the physical changes of the earth through 4.5 billion years of advancing and retreating seas, of deposition, and of erosion of rocks, fashioned into mountain ranges-the entire chronological history of how processes of physical geology have operated. Prerequisite: Geology 1303

1305 (GEOL 1305) Environmental Geology (3-0). This course emphasizes the complex relations between the land, sea and atmosphere and human activities. Topics include: geologic hazards, land management use, water resources, hazardous waste disposal, energy and mineral resources, conservation of natural resources, and atmosphere and ocean sciences. This course may be used by persons seeking earth science teacher certification.

2301 Lithology (3-2). Introductions to the basic concepts of identification, classifications and origins of igneous, sedimentary and metamorphic rocks. Laboratory exercises consist of hand specimen identification and classification of suites of all three rock classes. Prerequisite: Geology 1311/1103

2405 (GEOL 2405) Optical Mineralogy (3-3). Introduction to crystallography, crystal chemistry, and optical mineralogy. Identification of minerals by physical, optical, and X-ray diffraction techniques. Prerequisite: Geology 1303, 1103, Chemistry 1311, 1111

2407 Air Photo Interpretation (3-3). This course is designed for students wishing to acquire a broad overview of the surface of the earth as revealed by aerial photography. It will commence with the analysis of geological structures and progress through human interaction with the environment through natural resource management such as forestry and hydrology through agricultural activities and urban planning.

3301 Geology of West Texas (3-0). Designed as an introduction the geology of West Texas, this course contains a brief introduction to general geology followed by outlines of the geologic evolution of the region. Topics range from billion-year-old continental collisions, through deep sea deposition, coral reefs, explosive volcanism, mineral and petroleum deposits, to the evolution of the present day West Texas landscape. Optional field trips will be available. Prerequisite: Geology 1304

3302 Dinosaurs, Volcanoes and Earthquakes (3-0). Designed to introduce the non-major to recent developments and theories dealing with the changing face of the Earth and some of the animals that lived on it. New views on dinosaurs, their lives and their ultimate extinction. The distribution, causes, effects, and prediction of earthquakes and volcanoes. This course does not count toward advanced hours for Geology majors.

3304 Forensic Geology (3-0). The course is divided into two parts; "criminal" forensics and "civil" forensics. The first part examines such things as soil, rock, glass, etc. used in the commission of crimes. The second part looks at case studies of landslides, floods, etc. where people have sued for damages.

3401 Interdisciplinary Geographic Information Systems (2-4). This course is designed to introduce the concepts of computer-
based spatial data handling, referred to as geographic information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data, sources, input, manipulation, and output presentation. It is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, or archaeology. Prerequisite: CS 1301, AST 1305, equivalent or approval of instructor.

3402 Structural Geology (3-3). A study of the deformation of Earth’s crust. Covers stress and strain as well as geometric analysis of the structures (faults, folds, joints, shear zones) that comprise deformation. Construction of geologic maps and cross sections will be included, as will field trips. Prerequisite: GEOL 1304/1104, GEOL 3408, Math 1316

3403 Advanced Geographical Information Systems (3-3). This course is designed to build on the skills learned in the Interdisciplinary GIS class. Topics will include a review of advanced vector analysis, followed by a detailed coverage of raster based analysis. Projects will include the creation and manipulation of digital elevation models, classification on aerial and satellite imagery, and vector to raster conversion and analysis. The projects and assignments will utilize an extensive Trans-Pecos spatial database housed in the Sul Ross GIS lab. Software used will include the Spatial and 3D Analyst extension for ArcGIS and ERDAS Image. Prerequisite: Geology 3401 or approval of instructor.

3408 Stratigraphy and Sedimentation (3-3). A study of the processes governing the formation and distribution of recent sediments, which established the guiding principles used in the classification, correlation and interpretation of ancient, stratified sedimentary rocks. The stratigraphic record is largely the result of the continuity of sedimentary processes through the dimension of geologic time. Prerequisite: Geology 1304/1104

3410 Geochemistry (3-1). A survey of the application of chemical principles to the problems of geology. Topics include the origin and distribution of the elements in igneous, metamorphic, and sedimentary rocks. Basic concepts of thermodynamics, solution chemistry, and isotope geochemistry will be discussed. Prerequisite: Chemistry 1312/1112

3411 Invertebrate Paleontology (3-3). The course deals with the morphology, classification, identification, evolutionary trends and geological distribution of invertebrate fossils. Laboratory work consists of systematic study of index fossils as well as representative fossils of various phyla. Prerequisite: Geology 1304/1104 or permission of the instructor.

3412 Geomorphology (3-3). An introduction to the study of geologic processes operating at the Earth’s surface and the landforms produced by those processes. Fluvial, glacial, coastal, groundwater, soil, and both wind and water weathering processes will be studied along with lithologic and structural influences. Labs include interpretation of air photos and topographic maps as well as field studies. Prerequisite: Geology 1303/1103

3421 Special Topics (3-3). This is a junior level lecture and lab course covering various topics in geology. It may be repeated for credit when course topic varies.

3601 Field Geology (3-6). A capstone summer field course reviewing methods of geologic mapping, construction of geologic cross sections, measurement of stratigraphic sections, hydrogeologic surveys, and preparation of geological reports, in the context of regional geologic settings. Prerequisite: Geology 3402, 3408 or permission of the instructor.

4101 Research (1-0). Research by the student into a carefully outlined problem in the earth or geologic sciences. May be repeated for credit when topics vary.

4311 Special Topics (3-0). A course covering various topics in geology. Maybe repeated for credit when course topic varies.

4308 Tectonics (3-0). A detailed study of geologic features related to tectonic-plate margins around the world, with emphasis on convergent margins and the frontier research currently conducted there. Topics also include plate reconstruction, mantle plumes, and early-Earth tectonics. Prerequisites: GEOL 1303/1103

4401 Sedimentary Petrology (3-3). The course concerns the laws of sedimentation, the origin, history, description, classification, and interpretation of sedimentary rocks. It also involves determination of the rock types in the source areas. Laboratory work consists of petrographic investigation of thin sections of sedimentary rock types. Prerequisite: Geology 2405, 3408

4402 Special Problems (3-3). Individual directed readings and conference on special topics in geology. A lecture or seminar format may be used when sufficient interest exists in a topic.

4403 Igneous and Metamorphic Petrology (3-3). A study of the mode of origin, environment, evolution, characteristics and association of igneous and metamorphic rocks. Laboratory consists of hand specimen and petrographic examination of igneous and metamorphic rock suites from differing environments. Prerequisite: Geology 2405, and Chemistry 1311, 1111

4405 Lunar and Planetary Geology (3-3). A study of the terrestrial planets and moons in which a systematic description of the planetary surfaces will be integrated with geochemical data, mineralogic data, and experimental studies in theories of the formation and evolution of terrestrial planets. Prerequisite: Geology 4403

4418 Groundwater Hydrology (3-3). A detailed, analytical, quantitative discussion of the occurrences and movements of waters beneath the Earth’s surface. Topics include: the hydraulics of water flow through aquifers and the geologic setting for them as well as considerations for their development as water sources. A combination of lecture, field and lab exercises emphasize the subsurface part of the hydrologic cycle in various rock types, and the quantities and qualities (physical and chemical) of ground
water. Prerequisite: GEOL 1303 and GEOL 1103

4421 Special Topics (3-3). This is a senior level lecture and lab course covering various topics in geology. It may be repeated for credit when course topic varies.

5101 Graduate Seminar (1-0). The course deals with modern fields of research in the geosciences. The format varies from group discussions to the presentation of oral reports. The course can be taken for credit up to a maximum of three times. At least one semester is required of all students.

5302 Special Problems. (3-0). Qualified students may pursue independent laboratory or field problems under the supervision of the staff. A project proposal is required before enrollment.

5304 Special Topics (3-0). A seminar or lecture format may be used when sufficient interest exists in a timely topic. Prerequisite: Graduate standing in geology and by arrangement with the instructor.

5306 Advanced Structural Methods (3-0). Discussion of new geophysical, paleomagnetic, and structural methods. Application of these methods in resolving large-scale structural problems to scale, applied structural problems.

5308 Advanced Igneous Petrology (3-0). A study of the origin, emplacement, and distribution of igneous rocks utilizing thermodynamics, phase equilibria, major and trace elements, and isotope geochemistry.

5312 Volcanology (3-0). Origin and emplacement of volcanic systems. Application of information obtained from modern volcanoes, experimental studies and theoretical considerations to the understanding of ancient volcanic terrains.

5316 Trace Elements in Magmatic Systems (3-0). Discussions from current literature concerning the thermodynamics of trace element distribution and the application of isotopic and trace element geochemistry to models of magma genesis and evolution. Prerequisite: Geology 3410 or 4403, Chemistry 3404 recommended

5317 Aqueous Geochemistry (3-0). The course involves the study of the geochemistry of surface and groundwater as applied to geologic and environmental problems. Prerequisite: Geology 3410 and Chemistry 3404 recommended

5320 Advanced Paleontology (3-0). Understanding the basic principles of evolution and ecology through the study of fossil organisms. The use of fossils in paleoenvironmental interpretations.

5322 Stratigraphic Analysis (3-0). The determination of the depositional history of sedimentary rocks by the study of lithology and paleontology.

5326 Carbonate Petrology (3-0). Origin, classification and diageneis of ancient and modern carbonate rocks and sediments.

5328 Advanced Sedimentation (3-0). Selected recent sedimentary environments and their ancient counterparts. Methods of investigation of sediments and sedimentary rocks with emphasis on terrigenous environments and rocks.

5332 Dynamic Stratigraphy (3-0). An analysis of the stratigraphic record emphasizing the relationships between dynamic processes and facies changes in modern and ancient environments.

5333 The Dynamic Earth (3-0). An earth science course designed to provide the elementary and secondary teacher with modern concepts of plate tectonics, volcanism, earthquakes and other manifestations of the dynamic earth.

5401 Remote Sensing (3-3). A course dealing with the uses of remote sensing for geology interpretation. The lab provides practical application of a technique used in almost all fields of geology.

5402 Interdisciplinary Geographical Information Systems (3-3). This course is designed to introduce the concepts of computer-based spatial data handling, referred to Geographical Information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data sources, input, and analysis, and presentation of results. It is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, archeology, geography, or criminal justice. This graduate version of the class will require a term research project, preferably related to thesis project. Prerequisite: CS 1301, AST 1305, equivalent, or permission of instructor

5403 Advanced Geographical Information Systems (3-3). This course is designed to build on the skills learned in the Interdisciplinary GIS class. Topics will include a review of advanced vector analysis, followed by a detailed coverage of raster-based analysis. Projects will include the creation and manipulation of digital elevation models, classification on aerial and satellite imagery, and vector-to-raster conversion and analysis. The projects and assignments will utilize an extensive Trans-Pecos spatial database housed in the Sul Ross GIS lab. Software used will include the Spatial and 3D Analyst extension for ArcGIS and ERDAS Image. The graduate requirements will include a term research project related to the individual student's research interest. Prerequisite: Geology 3401, Geology 5402, or approval of instructor.

5404 Special Topics (3-3). A seminar or lecture format may be used when sufficient interest exists in a timely topic. Prerequisite: Graduate standing in geology and by arrangement with the instructor.

6040 Thesis Research (0-18). The student will enroll in this course after earning credit for GEOL 6301 each semester or summer
term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made. The course is variable for 1 to 9 credit hours, and may be repeated with approval of advisor. Credit hours earned may not be applied towards the 30 or 36 hours required for the degree. Prerequisite: Master of Science students that have been admitted to candidacy

6301 Thesis Proposal (0-6). Satisfactory completion of this course requires an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course requires the completed thesis to be presented to the Graduate Committee, accepted by the Dean of the College of Arts and Sciences, and filed in the Office of the Executive Vice President and Provost for Academic Affairs.

**HISTORY (HIST)**

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1301 (HIST 1301) History of the United States to 1877 (3-0). A general survey of the history of the United States from the discovery of the New World to 1877.

1302 (HIST 1302) History of the United States Since 1877 (3-0). A general survey of the history of the United States from 1877 to the present time.

2301 (HIST 2311) World History to 1500 (3-0). A survey of world history from the ancient world until the end of the fifteenth century.

2302 (HIST 2312) World History Since 1500 (3-0). A survey of European history since the 15th century to the present.

2303 Readings and Research (0-3). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

2309 History of Texas (3-0). A survey of the history of Texas from the pre-historic Indian civilizations to the present, stressing cultural, political, and social developments.

3300 Ancient Civilization (3-0). A history of the ancient civilizations of the Near East, Greece, and Rome to the 4th Century.

3301 The Middle Ages to 1350 (3-0). A history of the political, social, and intellectual development of medieval society to the 14th century.

3302 Europe During the Renaissance and Reformation to 1648 (3-0). A history of Europe from the mid-14th century to mid-17th century with particular emphasis on humanism in Italy and the religious revolt of the 16th century.

3303 Europe: Absolution to Revolution, 1648-1815 (3-0). A study of European history from the Treaty of Westphalia to the defeat of Napoleon. Emphasis on the scientific revolution, the English Revolution, French absolution, the enlightenment, and the French Revolution and Napoleon.

3304 Europe the 19th Century, 1815-1919 (3-0). A history of the social, political, and economic factors that influenced industrialization, nationalism, Marxism, democracy, imperialism, and the outbreak of World War I.

3305 Europe since 1919 (3-0). A history of Europe from the Treaty of Versailles to the present.

3306 History of Native Americans (3-0). This course is designed to familiarize the student with the history, cultures, peoples, and religions of Native Americans. The course spans the pre-Colombian, colonial, early American, nineteenth and twentieth centuries' experience.

3307 History of Pre-Columbian and Colonial Mexico (3-0). This course examines the history of Mexico from its earliest beginnings through the civilizations of the Olmec, Maya, and Aztecs. The impact of the Spanish Conquest of Mexico and the subsequent colonial society through the Independence War of 1810-1821.

3308 History of Modern Mexico 1821-Present (3-0). This course begins with Mexican Independence in 1821 and continues through the present.

3310 History of the American West (3-0). A study of the American West during the nineteenth century, emphasizing the successive frontiers, such as explorers, the mountain men, the cattlemen, the railroads, and the farmers.

3311 The Study of History (3-0). An introduction to the techniques and the materials important to the study of history.

3312 American Foreign Policy and the Cold War 1945-1991 (3-0). This course covers the history of American Foreign Policy as it relates to the history of the U.S.-Soviet Cold War 1945-1991.

3313 Mexican-Americans in the History of the United States (3-0). Examines the roots and traditions of Mexican Americans,
their emergence as a people, their historical presence in what is now the American Southwest, the emergence of the Chicano Movement, and their trajectory in American life.

3314 History of African Americans (3-0). Social, political, economic, and cultural history of African American in the United States since its beginnings. A comparison of the African American experience with the experiences of other Americans.

4303 The History of Russia 19th Century to the Present (3-0). This course examines social, economic, and political history in Russia from 1801 to the present. Emphasis is placed on understanding the changes as well as continuities in Russia under the tsars, commissars and beyond.

4304 History of Immigration and Ethnicity in America (3-0). This course examines the history of immigration and the issue of ethnicity and multiculturalism in the United States from the 18th century through the present. This course will focus on immigration from Europe and Asia from the early colonial era through the present.

4305 History of Modern Asia (3-0). The focus of this course is East Asia, that is, the Confucian societies of China, Korea, Vietnam, and Japanese model. The course begins with the late traditional era and proceeds to the present. Basic historiographical issues are introduced.

4316 Readings and Research (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student. May be repeated once.

4317 Special Topics (3-0). Selected Topics in areas of history. May be repeated for credit when the topic varies. When U.S. History is the topic, the course may be used to meet U.S. History requirements.

4320 Twentieth Century America (3-0). A survey of or a thematic approach to 20th Century American history. Themes might include economic, cultural, political, or ethnic topics to name a few. Approaches will vary.

4321 History of American Women (3-0). A study of American women from the colonial period to modern times, emphasizing social, cultural, economic, and political development.

4322 The Ranching Frontier in American History (3-0). A study of the development of cattle ranching in the American West from its Hispanic roots to the 20th century, with emphasis on the 19th century.

4323 U.S. Civil War and Reconstruction (3-0). Explores the causes of the Civil War; the military, political, economic, and social aspects of the war; and the issues and results of Reconstruction.

5302 Seminar in Texas History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5303 Seminar in Mexican History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5308 Seminar in European History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5309 Seminar in Western History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5310 Seminar in American History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5312 Readings and Research (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student.

5313 Special Topics (3-0). Selected topics in areas of history. May be repeated for credit when topic varies.

6301 Thesis Proposal (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis Proposal (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the College, and filed in the Office of the Executive Vice President and Provost for Academic Affairs.

HONORS PROGRAM (HONS)

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1301 Honors First-Year Seminar: Communications (3-0). This is an introductory Honors course emphasizing oral and written communication skills. This course is designed to introduce students to the tools required for independent research and presentation of results. Topics vary. Prerequisite: Admission into the Honors Program or consent of the instructor.

1302 Honors First-Year Seminar: English (3-0). This is an introductory Honors course emphasizing the development of composition, rhetoric, and research skills. Students will write expository, analytical, and persuasive papers and read a variety of materials. Prerequisite: Consent of instructor and either admission to the Honors Program or ENG 1301.
1303 Honors First-Year Seminar: Fine Arts (3-0). This is an introductory Honors course emphasizing the development of critical thinking skills through the study of topics in the visual and performing arts. Topics vary. Prerequisite: Consent of the instructor and either admission to the Honors Program or ENG 1301.

1304 Honors First-Year Seminar: Social Sciences (3-0). This is an introductory Honors course emphasizing the development of critical thinking skills through the study of topics in the behavioral and social sciences. Topics vary. Prerequisite: Admission into the Honors Program or consent of the instructor.

2301 Honors Literature Studies (3-0). This course presents a study of literary types, which may include prose, fiction, poetry and drama. The course topics may come from, but are not limited to, multicultural literature, rural writers, Arthurian legends, detective fiction, autobiography, and contemporary poetry. Prerequisite: Completion of the freshman English requirement and one of the following: admission into the Honors Program or consent of the instructor.

2401 Honors Integrated Life Sciences (4-1). This course presents an integrated study of life sciences. Topics that may be addressed will come from, but are not limited to, human anatomy and physiology, botany and zoology. Topics vary. Prerequisite: Biology 1311/1111 or Biology 1313/1113.

3301 Honors Seminar in Integrated Social Sciences (3-0). This course presents an integrated study of social sciences. Topics to be addressed will come from, but are not limited to, world civilizations, women in society and cultural studies. This course may be repeated one time for credit. This course would fulfill the Multicultural core requirement or could be used as an upper level elective. Prerequisite: Admission into the Honors Program or consent of the instructor.

3302 Honors Seminar in Fine Arts (3-0). This course presents the study of the interrelationships of the various disciplines as they relate to the presentations of art, film, stage plays and music. Course may be repeated one time for credit. Prerequisite: Admission in the Honors Program or consent of the instructor.

4300 Individual Honors Research (3-0). This course is intended for students working independently under the guidance of a graduate faculty member. This course may be repeated one time for credit. Prerequisite: Admission into the Honors Program and consent of the Director of the Honors Program.

INDUSTRIAL TECHNOLOGY (IT)

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1303 (ENGR 1304) Engineering Drawing I (2-4). Use of American National Standards Institute symbols and conventions; techniques of freehand sketching; accepted styles and practices of lettering; and the relationship between points, lines and planes through multi-view drawing principles. Shape description through pictorial methods.

1306 Beginning Metalwork Technology (2-4). A comprehensive course in industrial metals processes. Problems of pattern development, shearing, cutting, forming, bending, folding, and fabricating sheet steel as related to the sheet metal industry. Investigation of other industrial processes and techniques such as: industrial foundry processes; cold metal forming using bending, twisting, hammering, and combining techniques; forging and tempering techniques.


1309 Power Technology (2-4). A foundation course, which looks into energy, power, and transportation technologies. Investigation into their evolution, development, production, relationships, and use.

2301 Special Topics (3-0). The Special Topics course is used in case of Independent Studies or new course introduction.

2303 Introduction to Computer-Aided Design and Drafting (2-4). Introduction to how commercial CAD systems operate. Computer graphics hardware and software. Applications of CAD graphics applications specifically in two dimensions.

2304 (ARTS 2356) Photography (2-4). A foundation course in understanding the camera and the principles of its operation, light and film, darkroom techniques and photographic processes as they may be applied in industry using black and white films.

2305 Machine Wood Technology (2-4). A comprehensive course in industrial woods processes. The course includes some hand processes but focuses on machine operations as required in mill work and the woodworking industry. Reading and analyzing drawings, selecting materials, completing a bill of materials, and project planning are integral components in the course.

2306 Machine Shop Technology (2-4). A foundation course in the use of precision measuring instruments and metal working machines. Intended as an introduction to the machine shop practices of industry.

2307 Welding Technology (2-4). A study of principles and correct use of the equipment, materials, and processes required for oxy-acetylene welding, cutting and brazing, and electric arc welding.

2309 Technology of Small Engine Maintenance and Repair (2-4). The scientific, mechanical, and service concepts of two-cycle and four-cycle engines. Provides the student with the basic knowledge of these concepts and their application.

2313 Pictorial Representation (2-4). Pictorial drawing with emphasis on the fundamentals of isometric, diametric, oblique, one-
point perspective, and two-point perspective drawing techniques. Investigation into industrial rendering techniques for illustration of manufactured components.

2314 Welding Technology II (2-4). Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions. Prerequisite: IT 2307.


2316 Ironworking I (2-4). Forge operation and basic blacksmithing techniques including metal forming, forge welding, and steel tempering techniques used in industry.

2317 Ironworking II (2-4). A continuation of the ironworking skills studied in IT 2316 including ornamental and tool making. Prerequisite: IT 2316 or permission of the instructor.

3301 Special Topics (3-0). A course covering various topics in the field of Industrial Technology. May be repeated for credit when the topic varies.

3303 Architectural Drafting and Home Planning (2-4). Architectural drafting with emphasis on the principles of good design and planning the small home. Time is spent on architectural details, materials and methods of construction, energy conservation practices, the use of symbols, lettering, and building standards of the American Institute of Architects.

3315 Techniques in Furniture and Cabinet Making (2-4). An advanced course in woodworking with a focus on furniture and cabinet construction as well as finishing, with emphasis on current methods, techniques, and materials. Students will receive practical experience is design, layout and construction of furniture and cabinets, mass production techniques, using plastic laminates and modern finishing materials and methods. Prerequisite: IT 2305 or equivalent or special permission.

3316 Advanced Machine Metalwork Technology (2-4). Modern methods, techniques, and materials of the metal working industry. Special emphasis is placed upon advanced lathe and milling operations. Prerequisite: IT 2306 or equivalent or special permission.

3323 Three Dimensional Computer Graphics (2-4). An advanced course in computer aided drafting and design. Focus is on 3D design including work with solids and materials rendering. Prerequisite: IT 2303 or special permission.

3325 Methods and Techniques of Construction (2-4). Methods, techniques and processes in the construction industry. Emphasis on practical application and the acquisition of skills in standard residential construction practices.

3326 Pattern Making and Foundry (2-4). Advanced foundry and pattern making techniques with emphasis on molding, materials and equipment, core making, construction of various types of patterns, casting non-ferrous metals, production methods, and quality control. Prerequisite: IT 2305 or equivalent.

3354 Studio Photography (2-4). Advanced study in photography. Emphasis is on studio lighting techniques, studio equipment, posing, and composing. Time is spent on corrective techniques and advanced processing and finishing techniques. Prerequisite: IT 2304 or equivalent.

4301 Organization of Industrial Processing (3-0). A course designed to acquaint students with production planning and research from design through marketing for industrial products.

4303 Architectural Working Drawings and Specifications (2-4). Emphasis is on developing complete plans, schedules, and specifications for common construction. Attention will be given to residential, light commercial, structural specifications, and an introduction to computer applications in architecture.

4305 Special Processes in Wood Technology (2-4). Modern wood technology, wood lamination, the application of plastic laminates, advanced lathe operations, advanced gluing and decorating techniques, advanced finishing processes, techniques of bending and special designs.

4306 Machine Design and Fabrication (2-4). A look at how industrial machines are designed. Time is spent designing and building an industrial or production machine. Prerequisite: IT 2306 and/or 3316 or special permission.

4307 Advanced Welding Technology (2-4). Advanced theory and practical application of knowledge in the area of welding. Prerequisite: IT 2307 or special permission.

4311 Special Problems in Industrial Technology (3-0). Individual study in a selected area of industrial technology. May be repeated for credit when the topic varies based on and individual program requirements.

4315 Upholstery (2-4). Techniques, practices, and procedures of upholstering.

4317 Special Welding Processes (2-4). Special welding processes and the practical application of special techniques and processes in the field of welding with emphasis in Metal Inert Gas (MIG), Tungsten Inert Gas (TIG), Carbon Arc, and other specialized welding processes. Prerequisite: IT 2307 or special permission.
1102 Journalism Laboratory (0-2). Practical application of newspaper reporting and writing. (May be repeated twice). Prerequisite: Permission of the instructor

2101 Journalism Laboratory (0-2). Practical application of newspaper editorial desk work. Prerequisite: Permission of the instructor

2302 Feature and Editorial Writing (3-0). To provide a basic but comprehensive exposure to the aspects of feature writing and to provide students with the opportunity to improve their writing and interviewing skills through active participation. Course will include interviews with guest speakers who will both lecture and be interviewed for feature stories. Student stories may be selected for publication in The Skyline and other media outlets. The course is intended to stimulate student interest in writing for Sul Ross student publications, including The Skyline student newspaper and The Brand yearbook.

2311 (COMM 2311) News Gathering and Writing I (3-0). Writing for news media; clarity in use of language, style and punctuation; sentence and paragraph structure and organization of stories; credibility of information and new judgment; basic methods of researching and writing.

3301 Student Publications Workshop (1-4). This course is designed for students interested in applying basic journalism knowledge and skills to photojournalism, yearbook, or literary magazine production and/or newspaper production. Prerequisite: Permission of the instructor. May be repeated for credit but not more than once for credit toward Communication major.

3302 Layout and Design (3-0). Various programs such as PhotoShop, Illustrator, and InDesign will be explored and applied for use in web pages, newspaper and magazine publication, and e-publishing.

KINESIOLOGY (KES)

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1310 Essentials of Public Health (3-0). The course will cover basic public health functions and principles as well as historical context, the core disciplines of public health, essential functions that every public health system should apply, and health communications.

2203 Applied Anatomy (2-0). General survey of the anatomy of the body. Topics include the major organ systems relevant for human performance majors. An emphasis on cellular structures and the histology of selected anatomical structures will also be incorporated.

2303 Nutrition (3-0). Principles of nutrition including roles of nutrients, psychosocial aspects of eating, nutritional issues at various stages in life; developing diet plans, computing energy consumption and energy expenditures.

2304 Essential of Epidemiology (3-0). Epidemiology, the study of disease occurrence and determinants, lays the foundation for all public health practice. It is a scientific way of thinking about cause and effect. Epidemiology is used to investigate disease outbreaks, determine the natural history of disease, set resource priorities, and develop policies. Basic epidemiologic theory and techniques, applicable to public health practice, will be taught.

2312 Essentials of Global Health (3-0). This course will introduce students to the main concepts of the public health field and the critical links between global health and social and economic development. Students will get an overview of the determinants of health, and how health is measured. Students will also review the burden of disease, risk factors, and key measures to address the burden of disease in cost-effective ways. The course will cover key concepts and frameworks but be very practical in orientation. The course will be global in coverage but with a focus on low and middle-income countries and on the health of the poor.

2314 Essentials of Health Behavior and Health Promotion (3-0). This course focuses on how to address health issues facing communities by making changes at the individual, community, organizational, and governmental levels. Students will examine methods and theories to promote healthful changes using real-life examples. Specifically, the course will cover individual change theories, community development strategies. Diffusion of innovation theory, and media advocacy strategies.

3302 Health and Aging (3-0). Health concerns and quality of life during the aging process, ageism, demographics, ethnicity, research on aging, economics, health status, nutrition, fitness, health care in the 21st century, and death and dying.

3303 Care and Prevention of Athletic Injuries (3-0). Injury prevention, treatment and rehabilitation techniques in sports.

3305 Physiology of Exercise (3-0). Physiological responses of the human body during various levels/intensities of physical activity and exercise.

3306 Motor Learning and Development through the Lifespan (3-0). Acquisition and performance of movement behaviors including generalized patterns and specific skills for sport activities; how individuals learn movement skills’ interaction with cognitive, effective, and psychomotor learning domains, application of learning theories to physical education, physical therapy, and athletics.

3310 Community Health Assessment (3-0). This course will focus on the assessment of community health and the capacity to support the development of policy and community-based systems of health protection, health promotion, disease control, and health services. Students in this course will investigate the impact that social determinants of health (ie gender, race/ethnicity,
socioeconomic status, etc.) have on community health.

3313 Kinesiology and Biomechanics (3-0). This course pertains to the mechanics of human movement during physical activity and exercise; applications of fundamental physics to anatomical structures and motion and analysis of musculoskeletal structures that influence human movement.

4303 Fitness Testing and Exercise Prescription (3-0). Evaluation of health and fitness levels of athletic and nonathletic populations; creating effective exercise programs for various populations.

4310 Program Planning and Evaluation (3-0). This course will emphasize a systems approach in the planning of effective health services. Students will develop an evidence-based program that will include effective and culturally appropriate implementation strategies using state or national health objectives as a framework for planning.

4312 Health Promotion at the Workplace (3-0). Needs assessment; program development, implementation, and evaluation in corporate and private business settings; developing environmental and social support for healthy behaviors with the business community.

4313 Legal and Ethical Issues in Exercise and Sport Science (3-0). This course will cover basic legal principles, terminology, risk-management approaches, application of legal principles for the protection of employees and employers in kinesiology-related fields, and contemporary ethical issues.

4316 Exercise Programming for Special Populations (3-0). Creating exercise programs for populations of people having health concerns in the 21st century; programming application to coronary heart disease, diabetes, asthma, obesity, pregnancy, and physical and mental disabilities.

4362 Senior Capstone in Exercise and Sport Science (3-0). Completion and presentation of a research project is required. Additionally, the research project must be submitted to a professional conference, publication, or the student must attempt an approved professional certification examination. Prerequisite: Senior standing

5305 Research Methods (3-0). An introduction to the fundamental concepts of research design, measurement, statistical analysis and scientific inquiry as they apply to understanding and evaluating published research. Upon completion of this course, students should be informed about the relevance of published research to their own practice and research.

5307 Issues in Sports Law (3-0). This course covers various individual and non-professional sports law issues and focuses on the regulation of interscholastic, intercollegiate, and Olympic sports. Topics covered include tort law, contract law, Title IX gender discrimination, the relationship between the college athlete and university, drug testing of amateur athletes, the regulatory authority of the NCAA, and the rules and regulations pertaining to “amateurism” and use of agents.

5312 Advanced Human Nutrition (3-0). Dietary factors associated with chronic disease development are examined with an emphasis on heart disease, stroke, cancer, diabetes, osteoporosis, and neurodegenerative diseases. Students will access diets and provide alternative food choices to lower chronic disease risk. Acute and chronic exercise’s effects on nutrient requirements metabolism and the ergonic efficacy of dietary supplements receive substantial attention.

5313 Physiological Basis of Human Performance (3-0). The purpose of this course is to prepare the student in the areas of exercise physiology. The goals of this course are to provide the student with an active learning experience that will increase their knowledge of (a) energy metabolism and nutrition, (b) aerobic and anaerobic principles of work and exercise, (c) body composition measurement themes in exercise science, (d) cardiorespiratory/renal responses to exercise, (e) muscular/neural responses to exercise, and (f) thermoregulation during exercise in differing environments. Historical and contemporary concepts of exercise physiology will be discussed to improve the student’s understanding of the genesis and progression of exercise physiology throughout the twentieth century. This course will prepare the student for practical applications of exercise physiology.

5314 Diagnostic Test and Measurement in Exercise Science (3-0). This course will provide students with the background in the appropriate design structures, both qualitative, for research projects. Within the different framework of experimental designs, an emphasis will be on how to collect and organize data, data clearing, statistical analysis, and the interpretation of data. At the conclusion of the course, the student should have identified and be comfortable applying the appropriate experimental design for the thesis/project.

5315 Group Dynamics (3-0). An analysis of small-group structures and function with emphasis on leadership, membership, attitude and value formation, and role theory. 1. To provide the students with an analysis and understanding of small-group structure and function with emphasis on leadership, membership, attitude formation, value formation, and role theory. 2. To acquaint the students with basic methods of effective management and control of the group situation. 3. To provide practical application of small-group principles to simulated situations.

5316 Neurological Basis for Motor Learning and Control (3-0). This course is designed to provide an understanding of psychological/physiological principles involved in motor learning, control, and performance in skill acquisition for school-age children and adult populations.

5373 Health and Human Behavior (3-0). This course explores the process and methods of scientific inquiry and interpretation of research findings in kinesiology. 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. This course also provides an overview of statistics including descriptive and inferential statistics and one-way ANOVA. Students should have a basic understanding of conducting library and Internet information searches prior to taking this course.

5909 Advanced Practicum in Exercise Science (0-9). Limited to students who have completed all 24 hours and have demonstrated their ability to complete their internship work sponsored by the Kinesiology Department and who are considered able to do independent work. Before registering for the internship, students should have completed all 24 hours on their degree plan and consult with the advisor concerning their program of study. Students are expected to work independently with supervisors, mentors, or directors. Evidence of progress demonstrated by papers and discussion. Consent of a faculty supervisor and Department Chair.

LIBERAL ARTS (LA)
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5101 Prospectus for Master’s Project (0-1). Students will prepare and present an acceptable prospectus to their committee which describes the project to be undertaken in LA 5301. The project must reflect or incorporate ideas, subject material, research, or creative work from the three disciplines selected for study. Students should enroll in this class after consulting with their advisor and/or committee and must complete the class before enrolling in LA 5301. Prerequisite: Permission of graduate committee.

5301 Master's Project (0-3). Students will complete the interdisciplinary project proposed in LA 5101, submit it to their committee, and respond to questions from the committee in an oral interview/defense. The project may take the form of a creative production (such as an exhibit, performance, portfolio, or video); an extended paper or publishable article; an internship; or a practicum. Projects in other formats are acceptable if they have been approved by the student's committee. This course is to be taken as the final course for the Master of Arts in Liberal Arts program. Prerequisite: Permission of graduate committee and successful completion of LA 5101

MANAGEMENT (MGT)
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MGT 3360 Principles of Management (3-0). Introduction to the basic management concepts and processes.

MGT 3363 Human Resource Management (3-0). Study of the human resources tasks and duties managers perform including: determining the organizations human resource needs; compensation; evaluation; benefits, discipline; promotion; assignments; employee related legal matters, records, training, privacy; policy application; and orientation.

MGT 4361 Organizational Behavior (3-0). The study of inter-personal skills in organizations. The course provides the student with insights critical to management concerning individual processes, social dynamics, and organizational practices combined with knowledge of real work sensitivities, demands and practices.

MGT 4362 Management of Small Business Enterprise (3-0). This course offers a practical approach to planning, organizing, and running a small business. It explains how to achieve optimum benefits from the limited resources available to small firms, as well as how to plan for growth and succession in a business. It also explores arguments both for and against owning a small business. The focus is on the start-up and operation of small business. Through the creation of a business plan the student will examine the functions of business as they pertain to small business endeavors.

MGT 5304 Seminar in Management (3-0). Special topics in the application of the processes of management.

MGT 5312 International Management (3-0). This course familiarizes the student with management issues especially germane in international business including, but not limited to politics, culture, economics, decision-making, strategic planning, and human resources in a global environment.

MARKETING (MKT)
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MKT 3370 Principles of Marketing (3-0). Studies the place of marketing in our economic structure; the present marketing structures and the formulation by management of marketing policies and procedures aimed at satisfying consumer wants. Cases, lectures, exercises.

MKT 3371 Consumer Behavior (3-0). Consumer motivation, perception, learning, group influences, and consumer decision processes.

MKT 3372 Sales Management (3-0). An analysis of the management skills needed to plan, organize and control a modern sales organization.

MKT 4371 Retailing Management (3-0). Principles and methods of modern retailing. Designed to aid students seeking a general knowledge of the retail field as well as those specializing in marketing.
MKT 4379 Business Capstone (3-0). Application of strategic business tools and techniques across all business functions to respond effectively to industry and marketplace needs. Recognition of both internal and external variables in formulating business strategies will be considered. Course content may involve the use of a computerized business simulation, strategic cases, articles and/or text material. Business Administration students are encouraged to take this course no sooner than the senior year. Prerequisites: Business Major - Senior standing

MKT 5303 International Marketing (3-0). A comprehensive management approach to prepare the student for the pervasiveness of global marketing competition.

MKT 5305 Seminar in Marketing (3-0). A graduate marketing management course utilizing cases and readings.

MATHEMATICS (MATH)
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1314 (MATH 1314) College Algebra (3-0). In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

1316 (MATH 1316) Plane Trigonometry (3-0). In-depth study and application of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Prerequisite: Math 1314

1325 (MATH 1325) Business Calculus (3-0). A modeling based introduction to graphing, differentiation, integration and optimization, with a focus on business applications. The use of a graphing calculator or a computer algebra system will be required. Offered spring.

1332 (MATH 1332) Contemporary Mathematics (3-0). This course is an introduction to a selection of college-level math topics. This course typically covers topics selected from the following: problem-solving, counting, the real number system, sets, geometry, solutions of linear and quadratic equations, elementary probability, financial math, the mathematics of voting, and fair division.

1342 (MATH 1342) Elementary Statistical Methods (3-0). Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis-testing. Use of appropriate technology is recommended.

2303 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

2306 Special Topics (3-0). Discussion of selected topics in mathematics, at or above the level of college algebra, suitable for lower division students. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

2310 Foundations of Elementary Mathematics I (3-0). First course in required mathematics content sequence for preservice elementary and middle school teachers. Topics include problem-solving techniques, reasoning, study of sets, systems of numeration, natural numbers, integers, number theory and rational numbers. Emphasis on problem-solving as a pedagogical tool with integration of manipulative-based explorations. Offered fall. Prerequisites: Satisfactory completion Math 1315 or Math 1342 with a grade of C or better; or equivalent advanced credit placement.

2311 Foundations of Elementary Mathematics II (3-0). Second course in the mathematics content sequence for preservice elementary and middle school teachers. Topics include: fraction operations, decimals, real numbers, ratio and proportion, percent, basic notions of geometry, measurement, and basic probability and statistics. Offered spring. Prerequisites: Satisfactory completion of Math 2310 with a grade of C or better.

2318 Linear Algebra (3-0). Introduces and provides models for application of the concepts of vector algebra. Topics include finite-dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvectors; and applications in science and engineering.

2413 (MATH 2413) Calculus I (3-2). Topics include limits and continuity, the derivative, techniques for differentiation of algebraic, logarithmic, exponential and trigonometric functions applications of the derivative and anti-differentiation. Offered fall. Prerequisite: Math 1315 and Math 1316 or equivalent scores or courses.

2414 (MATH 2414) Calculus II (3-2). Topics include the definite integral and its applications, techniques of integration, improper integrals, Taylor's formula and infinite series. Offered spring. Prerequisite: Math 2413

3101 Departmental Seminar (1-0). A forum for the presentation and discussion of results from various disciplines relating to Computer Science and Mathematics. Presentations will be made by visitors, faculty, and students. Students enrolled for credit in the departmental seminar will be expected to make at least one oral presentation during the semester. The course may be repeated during different semesters. (This course is a cross-listing of CS 3101). Offered fall and spring. Prerequisite: Consent of
3301 Geometry (3-0). This course consists of a modern formal development of Euclidean geometry and a limited introduction to non-Euclidean geometry, with an integration of topics, methods, and use of technology appropriate for prospective middle grade and secondary mathematics teachers. Offered fall or spring as needed. Prerequisite: Math 2311 or Math 2330; or consent of instructor.

3303 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

3320 Differential Equations (3-0). First order differential equations, linear differential equations of higher order, power series solutions, systems of linear differential equations, and applications. Use of a programmable graphing calculator may be required. Students are also introduced to a symbolic algebra system running on a personal computer. Offered spring. Prerequisite: Math 2414.

3330 Number Theory and Cryptography (3-0). This is an introductory course in basic number theory via its important applications in modern cryptography. Topics include divisibility and the Euclidean algorithm, congruences, finite fields, quadratic residues, enciphering matrices, public key cryptography, pseudoprimes, and factoring techniques. Offered fall and spring when needed. Prerequisite: Math 2414.

3340 Foundations of Higher Mathematics (3-0). A transition course to higher mathematics. Students learn how to organize and structure their mathematical thoughts, how to read and manipulate abstract definitions, and how to prove or refute proofs by effectively evaluating them. Topics such as propositional logic, set theory, and techniques of proving will be the basis for discussions on functions, sequences, relations, limits, cardinality, divisibility, the real numbers and complex numbers. Offered fall and spring when needed. Prerequisite: Math 2414.

3415 Calculus III (3-2). This course includes the study of the calculus of functions of several variables and topics in vector calculus including line and surface integrals, Green's Theorem, Divergence Theorem, and Stokes' Theorem. Offered fall. Prerequisite: Math 2414.

3350 History of Mathematics (3-0). Biographies of a representative sample of mathematicians along with an exploration of the chronological development of important ideas in mathematics, particularly in the fields of geometry and number theory. Offered fall or spring when needed. Prerequisite: Math 2413.

4303 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

4320 Analysis I (3-0). Topology of the real line, sequences of real numbers, and continuity of functions of a single real variable. Includes an introduction to logic, set theory, and cardinal arithmetic. Rotated with 4330 and 4360. Prerequisite: Math 2415.

4321 Analysis II (3-0). A continuation of Math 4320. The course includes rigorous treatments of differentiation, the Riemann integral, sequences and series of functions, and an introduction to Fourier series. Offered when needed. Prerequisite: Math 4320.

4330 Modern Algebra I (3-0). Group theory and its applications to number theory and geometry, introduction to rings, integral domains, and fields. The course may require the use of programmable graphing calculator and/or a symbolic algebra system running on a personal computer. Rotated with 4320 and 4360. Prerequisite: Math 2330 and Math 2415.

4331 Modern Algebra II (3-0). A continuation of Math 4330. This course continues the study of rings and fields with a brief introduction to Galois Theory. The course focuses on polynomial rings, vector spaces, and rings of matrices. Offered when needed. Prerequisite: Math 4330.

4340 Mathematical Statistics (3-0). Classical probability theory, discrete and continuous random variables, distribution functions, expectation, law of large numbers, central limit theorem, applications. Offered when needed. Prerequisite: Math 2414.

4360 Complex Variables I (3-0). An introductory course covering functions of one complex variable. Topics will include: the algebra of complex numbers, geometry in the complex plane, polar representation of complex numbers, analytic functions, mappings, continuity, differentiability, Cauchy-Riemann equations, elementary functions of a complex variable, contour integrals and the Cauchy integral formula. Rotated with 4320 and 4330. Prerequisite: Math 2415.

4361 Complex Variables II (3-0). Further treatment of functions of a single complex variable. Topics will include: Taylor and Laurent series, Residue theorems, integration, mappings using elementary functions, and conformal mappings. Offered when needed. Prerequisite: Math 4360.

4390 Senior Project (0-6). Directed individual studies in a mathematical topic of interest to the student. The course requires a written paper appropriately documented in AMS style and an oral presentation. The student will also be expected to answer questions from faculty for purposes of curriculum assessment. Offered fall and spring. Prerequisite: Completion of any 4000-level course with a grade of “C” or better.

5301 Special Topics in Mathematics (3-0). Selected topics in theoretical and applied mathematics. The course may be repeated for different topics. Offered when needed. Prerequisites: Permission of instructor.
5302 Topics in Mathematics Education (3-0). Selected topics in mathematics and mathematics education which relate to the teaching of K-12 mathematics. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

5303 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

MEXICAN AMERICAN STUDIES (MAS)

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2301 (HUMA 1305) Introduction to Mexican American Studies (3-0). Introduction to Mexican American culture, history, literature, music, world view, and place in both Mexican and American societies and nations.

2302 Readings and Research (0-3). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3309 Language on the Border. (3-0). This course looks at language along the U.S.-Mexican border from linguistic, social and political perspectives. Topics will include bilingualism, bilingual education, cultural identity, language varieties, and code-switching.

3310 Special Topics (3-0). Selected topics in the area of Mexican American Studies. May be repeated for credit when the topic varies.

3311 Folklore and Culture on the Texas-Mexican Border (3-0). Students are to become familiar with Mexican Revolution's history. Students will review the origin and history of Mexican Corridas. This course will be taught in English.

4309 Political Issues in Mexican American Studies (3-0). Selected readings or research projects to be offered as individual study to meet student need. May be repeated for credit when the topic varies.

MUSIC (MUS)

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1111 Individual Instruction (1/2-6). (May be repeated for credit.) One thirty-minute lesson and not less than 5 hours practice per week. Enrollment is open to music majors and minors, and all interested students with the permission of the instructor.

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1112 Vocal Ensemble (0-3). (May be repeated for credit.)

01 University Chorus - This group prepares and presents a major composite musical work each semester. There are usually two performances per semester. Enrollment is open to all students, regardless of their musical skills and/or experience, the ability to match pitch is essential.

02 Concert Choir - This group prepares and presents sacred and secular music of all styles, as well as folk and popular song arrangements. Enrollment is open to all students with permission of the instructor.

03 Vocal Ensemble - This group will prepare and perform music from the classical and popular styles.

04 Musical Theatre Ensemble - This group will prepare and perform music of the musical theatre idioms. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

1113 Instrumental Ensembles (0-3). (May be repeated for credit.)

01 Concert Band - This group performs concert band literature. Enrollment is open to all students with permission of the instructor.

02 Symphonic Wind Ensemble - This group prepares and presents the finest of band and wind ensemble literature available. Membership is by audition only.

03 Jazz Ensemble - This group prepares and presents works in styles ranging from early jazz to modern rock. Membership by permission of the instructor.

04 Brass Ensemble - This group prepares and presents selected small brass ensemble literature. Membership is by audition only.

05 Woodwind Ensemble - This group prepares and presents selected woodwind ensemble literature. Membership is by audition only.
06 Wind Ensemble/Pep Band- This group prepares and performs concert literature as well as pep band music. Performances include both formal settings and athletic events. Enrollment by permission of the instructor.

07 Guitar Ensemble - This group will prepare and perform music from the Classical and Popular Styles. Membership by audition only.

08 Specialty Ensemble - Special instrumentation. Membership by audition only.

09 Percussion Ensemble - Membership by audition only.

10 Orchestra - Membership by audition only.

1114 Instrument Class Instruction (2-0). (May be repeated for credit-maximum 2 SCH each.) Class instruction for music majors and minors who have not had previous study, and for other interested students. Emphasis is on the ability to play and compose for the instruments studied:

| 01 | Strings |
| 02 | Percussion |
| 03 | Brass |
| 04 | Woodwind |

1116 (MUSI 1116) Sight Singing & Ear Training I (2-0). The aural study of basic musical elements with emphasis on sight singing, scales, intervals, chords, and harmonic and melodic dictions. Meets two hours per week.

1117 (MUSI 1117) Sight Singing & Ear Training II (2-0). Continuation of MUSI 1116. Meets two hours per week. Prerequisite: MUS 1116

1118 Guitar Class (0-2). (*May be repeated for credit once only). For beginning guitarists. Emphasis on learning chords, strumming, finger style and note reading. Several guitars available for rent. Open to all students.

1181 (MUSI 1181) Piano Class I (0-2). Class instruction for Music majors and minors, and for other students who have not had previous study.

1183 (MUSI 1183) Voice Class I (0-2). Class instruction for students, who have not had previous study, and for Music majors and minors, and for other students in the use and understanding of the singing voice. Emphasis is on the ability to use the voice correctly by study of fundamentals of vocal technique, sight singing, ear training, and repertoire.

1211 Individual Instruction (1-9). (May be repeated for credit.) Two thirty-minute or one hour lesson and not less than 10 hours practice per week. Designed for Music majors, but other students may enroll with the permission of the instructor.

| 01 | Piano |
| 02 | Voice |
| 03 | Flute |
| 04 | Oboe |
| 05 | Clarinet |
| 06 | Saxophone |
| 07 | Bassoon |
| 08 | French Horn |
| 09 | Trumpet |
| 10 | Trombone |
| 11 | Euphonium |
| 12 | Tuba |
| 13 | Percussion |
| 14 | Guitar |
| 15 | Violin Family |
| 16 | Organ |

1303 (MUSI 1303) Fundamentals of Music (3-0). An elementary course for general students in the fundamentals of music; singing, piano keyboard, listening activities, and a study of clefs, keys and rhythms will be used to explore these fundamentals. This course meets Fine Arts requirement.

1308 (MUSI 1308) Music Literature I (3-0). (A fine arts/humanities course). A course designed to acquaint students with representative music of different ages, styles, media, and forms; and to its historical background. This course meets Fine Arts requirement.

1310 Problems in Music (3-0). Individual or small group study of specific topics in music on the lower division level. May be repeated for credit when topic varies.

1311 (MUSI 1311) Music Theory I (3-0). A study of basic musical elements with emphasis on terminology, scales, intervals, chords, tonal relationships, and simple part writing.

1312 (MUSI 1312) Music Theory II (3-0). Continuation of MUS 1311. Prerequisite: MUS 1311 or equivalent.

1314 Vocal Techniques (3-0). This course covers three areas: basic theory of singing, including the relationship of the body to singing; lyric diction for choral ensembles and soloists; and vocal/choral rehearsal techniques.

2112 Music Theatre Ensemble (0-3). This group will prepare and perform music of the musical theatre idioms. Performance may be staged or sung in a concert setting, depending on the repertoire for the given semester. Placement auditions may be held at the beginning of the semester. Prerequisite: Ability to accurately match pitch and sing confidently alone or in a group.

2115 Piano Class II (0-2). (May be repeated for credit). A study to develop keyboard skills, ear training, sight reading, keyboard harmonization. Class instruction is for music majors, minors, or permission from the instructor.

2116 (MUSI 2116) Sight Singing & Ear Training III (2-0). The continued aural study of basic musical elements with emphasis on sight singing, scales, intervals, chords, and harmonic melodic dictation as well as musical forms and structures. Prerequisite:
MUS 1117.

2311 (MUSI 2311) Music Theory III (3-0). A continuation of musical elements studied in MUS 1331, with greater emphasis on musical structure, analysis, and music writing. Prerequisite: MUS 1312.

3111 Individual Instruction (2-6). (May be repeated for credit.) One thirty minute lesson and not less than five hours practice per week. Enrollment is open to Music majors and minors, and to other students with the permission of the instructor.

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3112 Vocal Ensembles (0-3). (May be repeated for credit.)

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3113 Instrumental Ensembles (0-3). (May be repeated for credit.)

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3117 Individual Studies (0-1). Individual study of selected academic topics in music.

3141 Ear Training IV (2-0). The aural study of advanced musical elements with emphasis on sight singing, chromatics, scales, intervals, chords, and harmonic and melodic dictation, as well as forms and structure. Prerequisite: MUS 2116.

3211 Individual Instruction (1-9). (May be repeated for credit.) Two thirty-minute lessons or one-hour lesson and not less than 10 hours practice per week. Designed for music majors and minors but other students may enroll with the permission of the instructor.

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3217 Individual Studies (0-1). Individual study of selected academic topics in music.

3310 Special Topics in Music (3-0). Topics to be selected from: History and Literature of Music, Music in the General Culture, Techniques of Instrumental or Vocal Music or another topic in the field of music. (May be repeated for credit when topic varies.)

3311 Music Materials for Children (3-0). A study of music materials and skills which are effective in providing a musical background for children.

3312 Problems in Music (3-0). Individual or small group study of specific topics in music on the upper division level. May be repeated for credit when the topic varies. Prerequisite: junior standing.

3313 Fundamentals of Conducting (3-0). (May be repeated for credit if conducting problem varies.) A study of effective hand and baton techniques used in conducting music ensembles.

3316 Secondary Music Methods (3-0). A study of the value of music in society; music as a fine art; music for the performer; music for the listener; the necessary skills Required for vocalists and instrumentalists, including the understanding of the changing male adolescent voice; appropriateness of music literature for use in instrumental or vocal ensembles for adolescents; music as a cultural force in society; and, basic understanding of instrumental and vocal ensembles organization. Prerequisite: Junior standing and consent of the instructor.
3317 Problems in Music (0-3). Individual or small group study of specific topics in music on the upper division level. May be repeated for credit when topic varies.

3341 Music Theory IV (3-0). Continuation of MUS 2311, plus analytical techniques used in the understanding of formal structures found in musical compositions. Prerequisite: MUS 2311 or equivalent.

4112 Advanced Musical Theatre Ensemble (0-2). Advanced instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

4131 Senior Recital (1-0). A course to be the capstone of applied music individual instruction. Students will prepare 20 minutes (actual) of music for a public recital, demonstrating proficiency on their instrument or voice. They will also prepare a program, including scholarly program notes which have been researched and relate to the music to be performed.

4215 Marching Band Techniques (2-0). A study of the problems peculiar to the marching band and their solutions; planning, charting, and rehearsing of marching performances for parades, half-time shows, and contests; the administration of marching band personnel and equipment; baton twirling and drum majoring.

4216 Arranging (2-0). (May be repeated for credit if arranging problem varies.) A practical study of arranging music for a variety of vocal and instrumental ensembles through an understanding of their traditions and problems. Prerequisite: Music 2311 or its equivalent.

4311 History of Music I (3-0). This course is a survey of the history and literature of music, including in-depth study of composers, periods, styles, and musical development from antiquity to the present time. Prerequisite: MUS 1308 or permission of the instructor.

4312 History of Music II (3-0). This course is a survey of the history and literature of music, including in-depth study of composers, periods, styles, and musical development from the Class Period (1750) through the present. Prerequisite: MUS 4311 or permission of the instructor.

5112 Musical Theatre Performance (0-2). Advanced instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

5113 Musical Theatre Ensemble (0-2). Advanced instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

5319 Individual Research Problems in Music (0-3). The student will do independent work in a limited area of music selected in consultation with the instructor in terms of both departmental and student interest and needs.

5321 Seminar in Music Pedagogy (3-0). Advanced study of teaching methods, analysis, rehearsal and performance for musical instrument or voice in the individual or group setting. May be repeated for credit when topic varies.

NATURAL RESOURCE MANAGEMENT (NRM)

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1101 Freshman Seminar (1-0). Seminar course designed to introduce students to faculty, facilities, and programs in ANRS and to introduce students to study skills essential for a successful career. Offered fall and spring.

1301 (HORT) Horticulture (2-2). A survey of the general field of horticulture; a study of the principles and practices of propagation; the growth and fruiting habits of horticulture plants and the culture, harvesting, handling and utilization of fruit and nuts. Entrepreneurship skills and landscape design will be emphasized. Offered spring, odd years.

2203 Introduction to Field Studies (2-2). An introduction to science in the field. This course will cover topics including field safety, first aid, basics of camping and hiking, keeping a field journal, and use of field equipment such as a compass and GPS. The course will also introduce students to basic field science topics e.g. wildlife identification, plant identification, geology etc. Offered spring.

2301 Range Resources (3-0). An introduction to the principles of range management, including a survey of its history, resources, policies, grazing regions, range ecology, grazing systems, range improvements, and evaluation. Offered spring.

2303 Principles of Conservation Biology (3-0). Introductory course on the fundamental issues in the discipline of conservation biology including conservation genetics, habitat fragmentation, natural resources sustainability, and island biogeography. Offered spring.
2305 Soils (2-2). The origin, formation, and classification of soils, as well as their physical, chemical, and biological properties. Organic matter, moisture, and soil fertility maintenance are also covered. Offered fall, even years and summer odd years.

2311 Problems in Natural Resource Management (3-0). Individualized instruction in all facets of natural resource management. This course is designed to meet the specific needs of freshman and sophomore students on an individual basis. May be repeated with approval of NRM chair. Prerequisite: Approval of NRM chair

2330 (AGRI 2330) Wildlife Conservation and Management (3-0). An introduction to the wildlife resources of the United States with specific reference to Texas. The history of game management, endangered species, and methods for the maintenance, control, and increase of wildlife resources. Offered fall.

3201 Wildland Plants (1-2). A study of wildland plants and plant communities, including identification, growth and phenology, forage and browse values, restoration value, and habitat. Offered fall.

3202 Wildlife Identification and Natural History (1-2). A course that provides fundamental identification skills and an understanding on the life history and habitat requirements of various game and nongame animals. Offered spring. Prerequisite: NRM 2302

3301 Fire Ecology (3-0). Study of fire in range ecosystems, including history of fire, climate factors associated with fire, vegetation response, evolution of ecosystems with fire, prescribed burning as a management tool, fire safety and liability concerns. Offered spring, even years.

3302 Forest Ecology (3-0). Introduction to forest ecosystems. Includes forest types and distribution, inventory and monitoring techniques and management of forest ecosystems. Offered summer, even years.

3303 Ecology and Conservation of Natural Resources (3-0). An overview of the history, science, use and policy approaches to natural resource management, with an emphasis on rangeland, wildlife, soil and water resources within a social context. Offered fall, odd years.

3304 Natural Resource Policy and Administration (3-0). An advanced course in land use management and policy, administrative organizations, and public relation philosophies of private, state, and federal agencies that manage natural resources on publicly and privately owned lands. This course includes special programs presented by speakers from both state and federal agencies responsible for policy implementation and administration of wildlife and other natural resources. Offered fall, odd years and summer, even years. Prerequisite: NRM 2330

3308 Agricultural Statistics (3-0). Major emphasis is placed upon design, analysis and interpretation of agricultural and biological experimental data. Information presented in this course will include statistical concepts and models, simple tests of significance, analysis of variance, mean separation procedures, and linear regression-correlation analysis. Offered fall and summer. Prerequisite: Math 1332, 1314, 1342 or permission of instructor.

3310 Special Topics (3-0). Selected topics in the field of natural resource management. Topic selected according to student interest and need. May be repeated as topics vary.

4101 Range and Wildlife Activities (1-0). An elective course for students involved in activities supportive of natural resource science. Activities include, but are not limited to: range plant identification, wildlife quiz bowl, and range and wildlife conclave.

4301 Human Dimensions in Natural Resource Management (3-0). Theory and applications for considering human dimensions in an integrated approach to wildlife conservation and management. Course emphasizes will include human values, the role of constituency groups, natural resource policy development, conflict resolution, group decision-making, research methods, and case studies. Offered spring, even years. Prerequisite: NRM 2330 and NRM 2303

4302 Advanced Topics in Conservation Biology (3-0). Examines the major areas in conservation-oriented research including patterns of biodiversity, extinction, conservation genetics, conservation of populations, communities and landscapes, and natural resource sustainability. Offered fall, even years.

4303 Range Ecology (3-0). A study of rangeland communities, including principal forage species characteristics, growth, and phenology; resource planning and management; the effects of range livestock and wildlife on range vegetation; the study of plant succession and climax in relation to grazing and ecological condition. Offered spring. Prerequisite: NRM 2301

4304 Range Inventory and Analysis (2-2). An overview of methods for measuring and analyzing rangeland plant communities and populations; statistical analysis of sampling; techniques to inventory rangeland resources; determining range health; determining forage production and utilization; determining proper stocking rates. Offered fall. Prerequisite: NRM 2301, NRM 3201, and NRM 3308

4305 Wildlife Management Techniques (2-2). An overview of habitat inventory and evaluation techniques, census methods, age and sex criteria; banding, data analysis, telemetry analysis, and research methods in wildlife management. Offered spring. Prerequisite: NRM 2302 and NRM 3202

4306 The Control of Domestic and Wildlife Diseases (2-2). Management as related to the control of animal diseases; sanitation and its importance in disease prevention; diseases prevented by vaccination; practical means of diagnosing diseases and ailments;
treatment of afflicted animals. Offered fall, odd years and summer. Prerequisite: Biology 2406 or permission of instructor.

4307 Range and Wildlife Habitat Management (2-2). Principles and practices of range and wildlife habitat management, including range improvement through mechanical, chemical, prescribed burning and biological manipulation of vegetation, grazing systems, revegetation and other habitat management practices. Offered fall. Prerequisite: NRM 2301

4308 Big Game Management (2-2). Application of the principles of wildlife management to big game species with a focus on the biology and behavior of big game species and how this influences habitat management, production, population characteristics, and management strategies for each species. Prerequisite: NRM 2301 and NRM 2302

4309 Wildlife Population Dynamics (3-0). Subject material dealing with the mechanics of growth and structure of populations, departures from stability and natural and artificial regulation of population levels, and techniques used to survey and monitor wildlife populations. Offered fall, even years. Prerequisite: NRM 2302 and junior or senior status or approval of instructor.

4311 Problems in Natural Resource Management (3-0). Individualized instruction in all facets of natural resource management. This course is developed to meet specific needs of individual students. May be repeated with approval of NRM chair. Offered all semesters. Prerequisite: Approval of NRM chair.

4314 Range Watershed and Hydrology (3-0). Discussion of basic hydrologic processes, watershed drainage on rangeland watersheds; networks and stream-flow characteristics; influences of range vegetation on watershed, and management of rangelands to optimize watershed benefits. Offered spring, odd years.

4409 Mammalogy (3-2). The systematics, phylogeny, natural history and economic relations of mammals of the world with particular emphasis on mammals native to the Trans-Pecos region of Texas. Museum technique and field work will be stressed. Prerequisite: General Zoology or equivalent

4410 Ornithology (3-2). The systematics, phylogeny, natural history and field studies of birds with emphasis on those found in the Trans-Pecos region of Texas. Prerequisite: General Zoology or equivalent

5302 Seminar in Range and Wildlife Management (3-0). This course is designed to be flexible to meet the needs of graduate students studying various disciplines in Range and Wildlife Management. May be repeated under different subject matter titles. Recent courses include GIS applications; Applied Wildlife Research; Wildlife Research, Grants, and Publications; Principles of Ecology; Wildlife Conservation for Teachers; Advanced Techniques in Vegetation Analysis; Range Research Techniques. May be repeated under different subject matter titles.

5303 Special Topics (3-0). Advanced studies in current agricultural and natural resource sciences research. Topics assigned according to student interest and need. Registration approval by the NRM chair. May be repeated under different subject matter titles.

5304 Research (0-6). Advanced studies in natural resource management. Problems assigned according to the experience, interest, and needs of the individual student. Registration approval by the NRM chair.

5305 Range and Wildlife Research Methods (3-0). An overview of the design and analysis of research projects pertaining to the ecology and management of wildlife species and rangeland ecosystems. Specific problems pertaining to the Trans-Pecos region will be stressed, but regional and national issues will be discussed. Methods discussed in the classroom will be applied in field situations.

5306 GIS, GPS, and Remote Sensing for Resource Managers (2-2). An advanced course on the rapidly growing geographic technology used by natural resource managers and scientists including: geographic information systems (GIS), global positioning systems (GPS), and remote sensing methods. Prerequisite: Geology 3401

5311 Scientific Writing (3-0). An advanced study of proposal and thesis format in Animal Science or Range and Wildlife Management. Covers publication styles common in each students chosen field. Scientific publications are emphasized.

5312 Biostatistical Analysis I (2-2). An introduction to statistical concepts and models applied to agricultural and biological systems. The course introduces the scientific method, inferential theory, data types, descriptive statistics, and goodness of fit, contingency tables, the normal distribution and one- and two-sample hypothesis testing. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Offered fall.

5313 Biostatistical Analysis II (2-2). An advanced course in statistical concepts and models applied to agricultural and biological systems. The course will cover experimental designs, paired-sample hypotheses, multisampling hypotheses (ANOVA), multiple comparisons, factorial and nested ANOVA, data transformations, linear regression, and correlation, multiple regressions and correlation, polynomial regression and the binomial distribution. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Prerequisite: NRM 5312 or permission of instructor. Offered spring.

5316 Project Research (1to9-0). Research for thesis project. May be repeated. Prerequisite: Master of Science students that have been admitted to candidacy. May be repeated.

5403 Special Topics (4-0). Advanced studies in current agricultural and natural resource sciences research. Topics assigned according to student interest and need. Registration approval by the NRM chair. May be repeated under different subject matter titles.

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5409 Wildlife Population Dynamics (3-2). Advanced course dealing with the mechanics of growth and structure of populations, departures from stability and natural and artificial regulation of population levels, and techniques used to survey and monitor wildlife populations.

6301 Thesis Proposal (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the graduate committee, accepted by the ANRS dean, and filed in the Office of Executive Vice President and Provost for Academic Affairs.

PHILOSOPHY (PHIL)

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1301 (PHIL 1301) Introduction to Philosophy (3-0). An introduction to the field of philosophy and its leading questions in metaphysics, epistemology, philosophy of mind, ethics, social philosophy, existentialism, logic, and aesthetics.

1302 (PHIL 2306) Ethics (3-0). An introduction of systematic approaches to moral reasoning, including both normative ethics and meta ethics as moral philosophy. Survey of approaches to judging the Tightness or wrongness of actions and judgments about the goodness or badness of things.

1303 (PHIL 2303) Logic (3-0). An introduction to logic emphasizing the nature of the rational process, types of reasoning, the scientific method, and fallacies. Sound reasoning skills are developed.

2301 Special Topics in Philosophy (3-0). Selected topics in Philosophy. May be repeated for credit when the topic varies.

2302 Readings and Research in Philosophy (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student. May be repeated once.

PHYSICAL EDUCATION (PE)

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1150 Wellness/Fitness Assessment (0-2). A course that assists students in making an assessment of their level of fitness. Included are: cardiovascular fitness, muscular strength, body composition, flexibility, muscular coordination, and concepts of healthy living. May not be repeated for credit.

1153 Individual Activities (0-2). Individual sports of Archery, Aerobics, Golf, and Weight Training and Conditioning.

1154 Team Activities (0-2). Team sports of Basketball, and Volleyball.

1155 Dual Activities (0-2). Dual sports of Badminton, Racquetball, Handball, and Tennis.

1156 Aquatic Activities (0-2). Beginning Swimming, Intermediate Swimming and Life Guarding. Red Cross Certification Is available.

1301 (PHED) Introduction to Physical Fitness and Sport (3-0). A course emphasizing the aims and objectives and historical background for sports and fitness and recreation. (Fall/Spring) This class must be completed with at least a grade of “C” or better prior to enrolling in an upper level Physical Education class.

1306 (PHED 1306) First Aid (3-0). A course which includes class discussion, reading and units on the fundamentals of safe conduct at home, in traffic, in play and recreation, and in the community with a section devoted to first aid in accordance with the latest National Safety Council first aid techniques and Advanced First Aid and CPR certification (Fall/Spring)

2101 Intercollegiate Activities (0-2). Participation as a member of an intercollegiate athletic team. Upon dismissal or voluntary withdrawal from the team, the student must report to the Chair of the Department for assignment to the regular activity claps. Elective credit only. May be repeated but may not be used to fulfill P.E. activity course requirements in General Education. Prerequisite: Membership on an intercollegiate athletic team.

2303 (PHED 1331) Activities for Children (3-0). This course is designed to give a foundation for a working knowledge of activities that are appropriate for children. These activities include elements that are deemed necessary for the complete physical development of the child. (Fall/Spring)

2304 Skills and Techniques of Individual and Team Sports (3-0). A course that emphasizes the training in basic skills and techniques of a wide range of individual and team activities including but not limited to: tennis, golf, badminton, archery, speedball, softball, volleyball, basketball, soccer and other selected individual and team recreational activities. (Fall/Spring)

3301 Theory of Practice of Football (3-0). A course giving emphasis to the theory of football, including policies in organization and administration of competitive sports programs. (Fall)

3302 Theory and Practice of Basketball (3-0). A course which gives emphasis to the theory of basketball, including policies in
the organization and administration of competitive sports programs. (Spring)

3303 Theory and Practice of Baseball and Softball (3-0). A course which gives emphasis to the theory of baseball and softball, including policies in the organization and administration of competitive sports programs. (Spring) Prerequisite: PE 1303

3304 Contemporary Health Problems (3-0). A study of current health problems and topics in society. Specific topics will include substance abuse, communicable diseases, mental health, environmental health, birth control, and nutrition and fitness. (Fall)

3305 Motor Development (3-0). This course is designed to permit students to study the various aspects of motor development of children. This will give students the opportunity to study physical growth as a factor accompanying motor development, fundamental motor skill learning and refinement and physical fitness development. (Spring)

3307 Kinesiology (3-0). A study of the analysis of human motion and posture subject to both mechanical and biological laws and principles. (Fall) Prerequisite: PE1301

3308 Theory and Practice of Volleyball and Tennis (3-0). A course which gives emphasis to the theory of volleyball and tennis including organization and administration of competitive sports programs. (Fall) Prerequisite: PE 1301

3309 Theory and Practice of Track and Soccer (3-0). A course which gives emphasis to the theory of track and soccer including organization and administration of competitive sports programs. (Spring)

4102 Workshop in Sports and Fitness (1-0). A course that may be repeated for credit when course content varies. (Various)

4103 Athletic Training Clinical Practicum I (0-3). A practical clinical experience course for the first year athletic training student. Working under the direct supervision of a certified athletic trainer, experience will be gained in taping, bandaging, illness/injury evaluation, rehabilitation and related services. May be repeated for credit. (Fall) Prerequisite: Admission to the student training program.

4104 Athletic Training Clinical Practicum II (0-3). A practical clinical experience course for student athlete trainers to work under direct supervision by a certified/licensed athletic trainer. Includes practical experience in bandaging and taping, athletic training Room management, medical referral and administration of injury care and related services. (Fall/Spring)

4301 Tests and Measurements (3-0). A course emphasizing the application of tests and measurements to the field of sports and fitness, including medical, written, motor skills, and physical examinations and tests. (Fall/Spring) Prerequisite: Completion of Mathematics Requirement and make a C or better in PE 1301

4302 Psychology and Physiology of Exercise (3-0). A study of the relation of physiological and psychological principles to physical fitness and exercise. (Fall/Spring). Prerequisite: PE 1301

4303 Concepts of Kinesiology and Fitness (3-0). This course provides a health-related fitness knowledge base with skill and assessment techniques and a review of important kinesiological concepts. (Fall/Spring/Summer) Prerequisites: PE 1301, 3307, 4301, 4302 or permission of the instructor

4304 Athletic Training I (3-0). A course which deals with proper methods of conditioning for prevention of sports related injuries with a focus on care and treatment of common athletic injuries. (Fall) Prerequisite: PE 1306, Safety and First Aid

4305 Athletic Training II (3-0). An advanced study of the care and prevention of athletic injuries with a focus of assessment and evaluation of sports related injuries. (Spring) Prerequisite: PE 4304

4306 Athletic Therapeutic Exercise (3-0). The study of therapeutic exercises used in the rehabilitation of athletic injuries and clinical techniques involved in muscle testing including goniometry. (Spring-Every third year) Prerequisite: PE 4304

4307 Therapeutic Modalities of Athletic Training (3-0). The study of sports therapy physical agents used in athletic training setting such as cryotherapy, hydrotherapy, and electrotherapy as mechanical therapy. (Spring-Every third year) Prerequisite: PE 4304

4308 Administration of an Athletic Training Program (3-0). The study of the administration and management strategies in athletics. Functions such as record keeping, insurance, public relations, pre-participation examinations, facility and equipment. Maintenance and budgets will be discussed. (Fall-Every third year)

5301 Research and Testing (3-0). Research and testing in health and physical education; skills and physical fitness; the place of tests in health and physical education; and essential statistical procedures. Course may be taken more than one time when course content varies. (Fall/Spring/Summer)

5302 Problems in Physical Education (3-0). This course covers special aspects of physical education. There is a critical review of selected studies, literature, practices and procedures in the field. This is all applied to the solution of individual problems. Course may be taken more than one time when course content varies. (Various)

5303 Seminar in Health and Physical Education (3-0). A seminar with emphasis on research in health and physical education in both the elementary and secondary school fields. The course will include methods of research, selecting problems and preparing a written report on the study. Course may be taken more than once when course content varies. (Various)
5304 Individual Research (3-0). Topics will be selected by the instructor in consultation with the student. Course may be taken more than one time when course content varies. (Various)

5305 Administration of UIL Programs (3-0). The course is designed to provide students the opportunity to study the University Interscholastic League organization and operation for governing interscholastic competition in the public schools of Texas. This course is cross listed with ED 6309.

5306 Problems in Athletic Administration (3-0). A course designed to give the teacher/coach a better understanding of the special problems that arise in the administration of a physical education or athletic program in the public schools and colleges.

5307 Mechanical Analysis of Sport Skills (3-0). The course is a study of the basic mechanical principles and physical laws that govern human movement, primarily in sports activities. Special focus will be analysis of sport skills for improvement through instruction.

5308 Health in the Public Schools (3-0). This course is designed for graduate students. The content will center around discussions of current situations and issues of health and wellness related to public school teaching and students.

5309 Sport and Exercise Psychology (3-0.) A course designed to expose students to basic concepts and principles of exercise and sport psychology and applications in counseling, teaching, coaching, athletic training, and fitness instruction.

5310 Legal Aspects of Sports and Physical Activities (3-0). The focus of the course is to examine the legal aspects of administration of, participation in, and related associations with sports, athletics and physical activity.

PHYSICAL SCIENCE (PHSC)

1115 (PHYS 1115) Physical Science Lab (0-2). Laboratory designed to accompany the lecture survey course which prepares education majors to teach physical science topics (physics, chemistry, astronomy, and geology) in grades K-6. Corequisite: PHSC 1315

1315 (PHYS 1315) Physical Science (3-0). Survey course to prepare education majors to teach physical science topics (physics, chemistry, astronomy, and geology) in grades K-6. This course cannot be applied toward credit of a major or minor in Biology or Geology.

4401 Analytical Instrumentation Theory (3-3). An interdisciplinary approach to the theory, application and use of modern analytical equipment including a scanning electron microscope (SEM), and X-ray fluorescence spectrometer, and ion chromatography (IC) unit. Prerequisite: CHEM 1311, CHEM 1111

PHYSICS (PHYS)

1101 (PHYS 1101) College Physics Laboratory I (0-2). This laboratory-based course accompanies PHYS 1301, College Physics I. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton Laws of Motion, and gravitation and other fundamental forces; emphasis will be on problem solving. Corequisite: Physics 1301

1102 (PHYS 1102) College Physics Laboratory II (0-2). This laboratory-based course accompanies PHYS 1302, College Physics II. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Corequisite: Physics 1302

1301 (PHYS 1301) College Physics I (3-0). Non-calculus based survey course in general physics covering kinematics, dynamics, temperature, heat, thermal properties of matter, and wave phenomena. Emphasis is placed upon the concepts of physics rather than mathematical relationships. Prerequisite: Math 1314 or a satisfactory score on the algebra placement test.

1302 (PHYS 1302) College Physics II (3-0). This non-calculus based survey course in general physics covers electricity, magnetism, electromagnetic waves, optics, atomic and nuclear physics, special relativity, and quantum chromo dynamics. Emphasis is placed on the concepts of physics rather than mathematical relationships. Prerequisite: Physics 1301

2125 (PHYS 2125) University Physics Laboratory I (0-2). Basic laboratory experiments supporting theoretical principles presented in PHYS 2325 involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. Corequisite: Physics 2325

2126 (PHYS 2126) University Physics Laboratory II (0-2). Laboratory experiments supporting theoretical principles presented in PHYS 2326 involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics; experimental design, data collection and analysis, and preparation of laboratory reports. Corequisite: Physics 2326
2325 (PHYS 2325) University Physics I (3-0). General physics for students who plan to do further work in engineering, mathematics, chemistry, geology or other related sciences. The course covers vectors, statistics, linear and rotational kinematics and dynamics and wave phenomena. Prerequisites: Math 1316 and Math 2413

2326 (PHYS 2326) University Physics II (3-0). Continuation of Physics 2325 covering kinetic theory, thermal properties of matter, thermodynamics, electrostatic fields, potential, electric circuits, and magnetic fields. Prerequisites: Physics 2325 and Math 2414

**POLITICAL SCIENCE (PS)**

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1302 The World of Law (3-0). This course is designed for students who are interested in preparing for law study or determining whether they are interested in legal careers in professional studies or in legal phases of political systems. No prerequisites. Credit given toward major and minor programs in Political Science.

1303 The Nature and Functions of Law (3-0). This is a casebook study to introduce the undergraduate to some of the major fields of law and basic concepts underlying them. It provides early exposure to the thought processes demanded by the case method of study, and it deals with what law does toward the operation of our society.


1307 Women and the Law (3-0). The legal status of women at national, state, and local levels, with particular emphasis on recent legislation and court cases.

1308 Readings and Research (0-3). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

1309 The Study of Politics (3-0). An introduction to the major concepts that underlie politics. Topics include democracy, political ideologies, and regimes, structures of governments.

1301 Political Parties (3-0). The development of the party system in the United States, with an emphasis on elections, campaigns, political behavior, public opinion, and the future of the major parties.


1303 Public Policy (3-0). An introduction to public policy making in the United States. Includes stages of the policy making process and theoretical basis of public policy as well as special focus on selected policies. May be repeated for credit when policy focus varies.

1305 Public Administration (3-0). The development and role of administration in the governmental process; principles and problems of administrative organization and coordination, financial responsibility and personnel management, problems of administrative control and accountability.

1306 International Relations (3-0). The theory and practice of international relations with particular attention to the forces and processes contributing to conflict and cooperation among nations.

1307 Contemporary American Foreign Policy (3-0). This course involves the study of policies and problems in the foreign relations of the United States since World War II. Included are studies in the politics, formulation, conduct, and consequences of American foreign policy.

1308 The Presidency (3-0). This course involves studies in the nature and growth of executive power, the analysis of the many-faceted role of the President, and attention to the types of performances of different men in the office. Also studied are the problems of staffing and advising activities, the decision-making process in foreign policy, domestic issues and budgeting, and the future of the Presidency.

1312 State and Local Government (3-0). A study of the organization, functions and powers of state and county government in the United States, with particular reference to patterns of state and local government in Texas. Comparative focus on the state level. Emphasis may be on "politics" or "administration" or both. May include topics such as home rule, problems in International Relations, community power structures, change and reform efforts, politics of education and school districts, local government elites.

1314 Ethnic and Racial Politics (3-0). A study of the relationship between selected ethnic and racial populations and governmental processes and policies. Attention will be given to the role of ethnic and racial populations in the public policy development process and the impact of public policy on these populations. May be repeated for credit when ethnic and racial population vary.

1315 Women and Politics (3-0). Women's roles in politics at national, state, and local levels as they reflect the economic, legal
social status of women; also, an overview of related political issues, important concepts, events, and movements.

4302 American Political Thought (3-0). The development of American democracy, including "liberal" and "conservative" contributions to contemporary American political thought.

4303 Comparative Politics and Government (3-0). Study of the politics and governments of nations other than the United States. Course may be repeated for credit when topic varies.

4305 Readings and Research (0-3). Selected readings or research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4309 Classical Political Thought (3-0). The purpose, functions, and structure of political theory, with intensive study of Plato and Aristotle.

4310 Modern Political Thought (3-0). Intensive study of post Reformation political thought: Hobbes, Locke, Rousseau, Marx or selected contemporary political ideologies—democracy, communism, fascism, socialism, liberalism, conservatism.

4311 Special Topics (3-0). Special courses on topics not included in the regular curriculum. May be repeated for credit with departmental approval.

4312 Field Experience in Political Science (3-0). In this course, the student is placed in a supervised setting within a government office or an agency with a governmental mission. Approval of department chair is required. May be repeated for credit with departmental approval.

5301 Seminar in Comparative Government (3-0). An examination of various approaches to the study of comparative government with individual research problems designated to explore specific topics. May be repeated when topic varies.

5302 Seminar in International Relations (3-0). An examination of key concepts and approaches to the study of international relations in connection with a study of recurrent issues and topics through individual research problems. May be repeated when topic varies.

5303 Public Administration Survey (3-0). The conduct of public business by organized agencies at national, state and local levels. (Public Administration)

5304 Seminar in Political Theory (3-0). An introduction, on the graduate level, to the problems and techniques of analytic political philosophy or other topics in theory.

5305 Readings and Research in Government (3-0). A readings and research course for graduate students in political science designated to meet needs not provided for in other available courses. May be repeated for credit with the approval of the department.

5307 Scope and Methods in Social Science (3-0). An introduction to the subject matter of the social sciences and the major contemporary approaches to it. This course is cross referenced with Criminal Justice 5334

5308 Case Studies in Public Administration (3-0). Case studies and readings in administration, organization, processes, and goals; the major and characteristic problems of public administration approached through analysis of actual incidents in various executive agencies and theoretical explanations of administrative behavior. Applicable to administration in education settings. (Public Administration)

5309 Internship in Public Administration (3-0). Students who enroll in this course are involved in work experience in public or non-profit agencies. Permission of the department chairman required. Academic and work experience evaluations. Maximum of six semester credit hours allowed toward degree requirements. (Public Administration)

5310 Public Budgeting and Finance (3-0). Focuses on the development and execution of various budgeting systems with special attention given to the political content of the budgetary process in the public sector. (Public Administration)

5311 Intergovernmental Relations (3-0). A study of governmental relations among public administrators at various levels—national, state, regional, local—focusing on interactions among these public officials. (Public Administration)

5312 Agency Politics (3-0). A seminar which deals with the several types of non-electoral politics in which public agencies are regularly involved: intra-organizational conflicts, accommodations, negotiations and competitions; and inter-organizational with other agencies, clientele-constituency groups, and legislative and executive entities. (Public Administration)

5313 Public Policy Analysis (3-0). Focuses on techniques used in policy development, adoption, and evaluation in the public sector. Topics include policy reviews, needs assessment, the establishment of goals and objectives, and the analysis of benefits, costs, and risks. (Public Administration)

5315 Local Government Administration (3-0). Administration of local government with particular reference to small cities in Texas. May also include counties, metro-systems, school districts, and other special purpose units. (Public Administration)

5316 Special Topics in Public Administration (3-0). Special courses in Public Administration not included in the regular curriculum. May be repeated for credit with departmental approval. (Public Administration)

5317 Seminar in U.S. Government (3-0). Course focuses on selected topics in U.S. Government. May be repeated when topic
6301 Thesis (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the College, and filed in the Office of the Executive Vice President and Provost for Academic Affairs.

PSYCHOLOGY (PSY)

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1101 Scientific Foundations of Learning (1-0). This course investigates the basic biological, psychological, and sociological determinates of adult learning. The relationships between individual behaviors and social processes that affect adult learning in the University community are studied utilizing theoretical frameworks and applied science. Prerequisite: Freshman classification.

1302 (PSYC 2301) Introduction to Psychology (3-0). Introduction to psychology as a scientific discipline. Required of all students who will major or minor in psychology. Recommended for students in other areas of behavioral science.

2304 (PSYC 2319) Introduction to Social Psychology (3-0). Introduction to social psychology; topics include affiliation, perceptions of others, liking for others, aggression, group structure and leadership, group dynamics, conformity, and attitude formation and change. Prerequisite: PSY 1302 or consent of instructor.


2310 (PSYC 2314) Developmental Psychology (3-0). The study of the developing human from birth to death, including physical, cognitive, emotional, and moral development. Prerequisite: Psychology 1302 or consent of instructor.

2311 Readings and Research (3-0). Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

2314 Multicultural Psychology (3-0). Culture is examined as an environmental variable that contributes to growth and development, attitudes, sociability, emotional expression, parenting, psychological disorders, careers, individualism and collectivism. Prerequisite: PSY 1302

3302 Theories of Personality Psychology (3-0). Current scientific considerations in personality are pursued in the domains of the biological, consciousness, disposition, cognitive/experiential, socio-cultural and adjustment psychology. Several historic positions with considerable contemporary influence are considered. Self-study and understanding are supported. Students may be asked to participate in a series of videotaped interviews to experience aspects of personality psychology in practice. Prerequisite: PSY 1302 or consent of instructor.

3303 Theories of Personality (3-0). An introduction to the principles of psychology that is most relevant to understanding one's own behavior, that of significant others and the interaction in modern society that is paradoxically technically advanced and yet more stress producing than in the past. Self-study activities are an important part of the course. Students may be asked to participate in a series of videotaped interviews to further explore life areas such as stressors/hassles, coping skills, etc.

3304 Abnormal Behavior (3-0). An investigation of behavioral disorders and the biological and social factors which may affect them. Prerequisite: PSY 1302 or consent of instructor.

3308 Experimental Psychology (3-0). Study of experimental methods and research findings in areas of psychophysics, sensory processes, learning and motivation. Development of experimental design. Prerequisite: PSY 1302 and PSY 2307 or consent of instructor.

3309 The Psychology of Learning (3-0). A review of animal and human research involving explanations of learning in everyday life which includes how the consequences of behavior affect future actions. Prerequisite: PSY 1302 or consent of instructor.

3313 Social Attitudes (3-0). An introduction to the study of political behavioral and attitude research focusing on problems of measurement, empirical findings, theories of acquisition and change, media effects, as well as political socialization and political personality. Prerequisites: PSY 1302 or consent of instructor.

4009 Reading and Research (0-1-2). Selected readings of research projects to be offered as individual study to meet student needs. May be repeated for credit when the topic varies with the approval of the major advisor. Variable for 1 or 2 semester credit hours.
4306 Biopsychology (3-0). A systematic review of the theories and research dealing with physiological correlates of learning, motivation, emotion and perception. Prerequisite: PSY 1302 or consent of the instructor.

4308 Clinical Psychological Methods (3-0). Theory and methods of clinical psychology; including theory and application of the counseling interview, therapeutic psychology, therapeutic techniques, and the therapeutic process. Prerequisite: PSY 1302 or consent of the instructor.

4309 Readings and Research (3-0). Selected readings or research projects to be offered as individual study to meet student needs. May be repeated for credit when the topic varies with the approval of the major advisor.

4310 Special Topics (3-0). Special course in Psychology on topics not included in the regular curriculum, e.g. advanced statistics, comparative psychology, primate behavior, adult developmental psychology, sensation and perception. Prerequisite: PSY 1302 or consent of the instructor.

4311 Community Experience in Psychology (0-3). This course allows students to gain practical experience with human services agencies. Students are assigned to work with an area agency. May be taken only once to meet degree plan requirements. Prerequisite: Psychology major. Senior standing.

4315 History of Psychology (3-0). Students are introduced to the development of Psychology as a scientific discipline, beginning with a survey of ancient philosophical thought, and leading to the eventual combination of ideas and methods from physiology and philosophy. Current trends in contemporary psychological investigation are discussed in terms of persistent questions regarding, for instance, the mind/body question, nature vs. nurture, the correspondence between realities and understanding the nature of knowledge, and the place of humans in the universe.

**Sustainable Ranch Management (RCH)**

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1301 Animal Husbandry I (2-2). A hands on introductory course in applied animal husbandry that covers the basics of healthy and sustainable management of cattle, sheep, goats, and horses.

1302 Advanced Animal Husbandry II (2-2). An advanced course in applied animal husbandry that covers advanced practices includes basic veterinary skills for healthy and sustainable management of cattle, sheep, goats, and horses. Prerequisite: RCH 1301

2101 Ranch Management Skills (0-2). This course covers basic skills necessary for successful ranch management, including communication, observation, record keeping, and basic implementation of ranch improvements. May be repeated for credit.

3301 Sustainability in Agriculture (2-2). This course provides an in-depth look at environmental, social, and economic sustainability on a global to local scale. Emphasis will be placed on how ranchers and land managers can provide for long-term sustainability through planning and implementation of sustainable practices.

3302 The Outdoor Hospitality Industry (2-2). An overview of the outdoor hospitality industry including ecotourism and hunting. The course will cover all aspects of guiding and interpretation to providing housing and meals as well as business analysis of cost benefit for providing different services within the framework of a ranch business and a stand-alone business.

4101 Advanced Ranch Management Skills (0-2). This course covers advanced skills necessary for successful ranch management, including communication, landscape level planning, long-term sustainability planning, and implementation of ranch improvements. May be repeated for credit.

4301 Ranch Ecosystem Management (2-2). This course covers ranch management through an ecosystem approach, with an emphasis on sustainable management of the entire system including abiotic factors such as soil and water; biotic factors such as plants, livestock, and wildlife; and social factors such as job satisfaction and economic benefit.

4302 Ranch Maps & Mapping (2-2). This course gives an overview of tools available for mapping a ranch to inform decision-making and maintaining records of capital equipment and range improvements. Emphasis will be placed on open source mapping solutions and mobile platforms.

4601 Ranch Internship (0-12). A directed internship course that will entail working on one or multiple working ranches. The experience will be directed by a faculty member who will aid the student in the selection of the ranch or ranches and ensure a broad range of experience through the internship.

**SAFETY EDUCATION (SED)**

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4301 Basic Driver and Traffic Safety Education (3-0). A basic course in Driver and Traffic Safety Education emphasizing the skills and techniques of driving in a modern world. The study and acquisition of available materials in the field. (Summer I) Prerequisite: PE 1306

4302 Methods of Teaching Driver and Traffic Safety Education (3-0). A course that deals with the problems and procedures necessary in setting up a driver education program in the public schools. Simulation: Multi-media classroom teaching and Multi-car driving range techniques will be covered as well as the technique not utilizing the above equipment. (Summer I) Prerequisites: Safety Education 4301
4303 Methods of Teaching Driver and Safety Education (3-0). A course designed to explore and demonstrate the various methods of teaching classroom driver education and of dealing with the problems and procedures to establish and conduct driver education program in the public schools. (Summer II) Prerequisites: Safety Education 4301

5301 Advanced Driver Education (3-0). This advanced course in driver and traffic safety education places emphasis on advanced traffic strategy and techniques. (Summer I)

5302 Seminar in Safety Education (3-0). A course on the survey of methods and materials as related to safety in the home, school, community, industry, traffic safety, and special vocations. (Summer I)

5303 New Concepts in Driver and Traffic Safety Education (3-0). This course in driver and traffic safety education places emphasis on new methods, materials, and content that will be utilized in driver and traffic safety education programs. (Summer II)

SOCIODY (SOCT)

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1313 Juvenile Justice System (3-0). Study of the juvenile justice system and juvenile crime and delinquency. Theories of delinquency. This course is cross referenced with Criminal Justice 1313.

2303 Introduction to Sociology (3-0). A survey of the field of sociology. Introduction to basic terminology and fundamentals of sociology; and the application of sociological knowledge to problems in human societies.

2305 (SOCT 2301) The Family (3-0). Sociological analyses of the family as a social institution, its social-psychological processes, development, and cross-cultural variations.

2306 Readings and Research (0-3). Selected readings and research projects to be offered as individual study to meet student’s needs. May be repeated for credit.

3301 Introduction to Social Research (3-0). The nature of social research including research design, the preparation of data collection instruments, data analysis techniques, and research report writing. Emphasis will be placed on development of computer competencies in behavioral and social science research.

3302 Victimology, Victims' Services, and Victims' Rights (3-0). The history of victims' rights, services, and the victims' rights movement; the provision of services to victims, relevant legal developments; victim precipitation and victim self-help; prevention of victimization. This course is cross referenced with Criminal Justice 3302.

3308 Minority Groups (3-0). The study of the processes and effects of social discrimination in the creation and maintenance of minority groups.

3309 The American Society (3-0). A systematic study of current social institutions of the United States in terms of both structure and function as influenced by various aspects of our culture, including social changes. At times, a thematic approach may be employed with a detailed focus on one institution, such as education or religion.

3311 Rural Sociology (3-0). A survey of rural problems and their relation to the increasing urbanization of America, the social organization of rural life and power structures in small communities.

3314 Sociology of Religion (3-0). Topics covered include the reasons religions develop, religious organizations as institutions, the interplay between religion and societal values, and the role of religion in societal change.

3315 Introduction to Professional Social Work (3-0). This introductory course will enable students to become familiar with the profession of Social Work and its avenues of practice. Students will examine how social services enhance the well-being of people and promote social and economic justice. The history of the Social Work profession and exposure to a variety of current professional social workers working in diverse agencies and milieus will be part of the overall course content.

3316 Domestic Violence (3-0). This course is designed to give the student a basic knowledge of the issues surrounding victims and perpetrators of domestic violence. Topics covered will include victim and perpetrator characteristics, explanations for the violence, and explanations for the victim's behavior. Criminal Justice responses to domestic violence situations both currently and historically will also be covered. This course is cross-referenced with Criminal Justice 3316.

4304 Criminology (3-0). A study of the factors that contribute to crime, criminological theories, criminal types, research methods, types of crimes, and crime trends. This course is cross referenced with Criminal Justice 4304.

4305 Social Deviance (3-0). The study of nonconformity to social norms. The causes of deviance and the role the deviant plays in society.

4307 Social Welfare Programs, Policies and Issues (3-0). Social Work education includes an understanding of the forms and mechanisms of oppression and discrimination and the strategies of change that advance social and economic justice. This course will enable students to analyze the impact of social policies on client systems, workers and agencies.

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4309 Readings and Research (3-0). Selected readings or research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4310 Special Topics in Sociology (3-0). Selected topics in Sociology. May be repeated for credit when the topic varies.

5303 Multicultural Society (3-0). Analysis of the concepts of "culture" and "social system" as treated in sociological literature combined with the study of social behaviors of distinct culture groups in the United States.

5304 Readings and Research in Sociology (3-0). A reading and research course for graduate students. May be repeated for credit with the approval of the department.

5305 Special Topics in Sociology (3-0). Selected topics in the area of Sociology. May be repeated when topic varies.

SPANISH (SPAN)

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1411 (SPAN 1411) Beginning Spanish I (4-0). This is an introductory course intended for students with little or no previous exposure to the Spanish language. Its main emphasis is to present essential vocabulary and grammar and to develop communicative and comprehension skills in listening, speaking, reading, and writing. The course includes an introduction Hispanic culture.

1412 (SPAN 1412) Beginning Spanish II (4-0). This course is a continuation of Spanish 1411. It introduces new grammatical structures, idiomatic expressions, and topics which include new vocabulary. It continues to build the foundational skills of listening, speaking, reading, writing, and cultural awareness with emphasis on conversation, pronunciation, fluency, and vocabulary. Prerequisite: SPAN 1411 or equivalent.

2305 (SPAN 2321) Introduction to Spanish Literature (3-0). An introduction to Spanish literature, covering such areas as literary style, figurative language, literary genres, versification, aesthetics, and text analysis. Prerequisite: SPAN 2311 or consent of instructor.

2311 (SPAN 2311) Intermediate Spanish I (3-0). For the non-native speaker of Spanish, Spanish 2311 is the continuation of Spanish 1411 and 1412. Native speakers should begin their study of Spanish with 2311. This course includes a review of grammatical patterns and development of speaking, listening, reading, and writing skills through exploring the many facets of Hispanic culture.

2312 (SPAN 2312) Intermediate Spanish II (3-0). This course is a continuation of Spanish 2311. It provides additional study of grammar and Hispanic culture with emphasis on written composition and oral presentations. NOTE: Those whose native language is Spanish, or those who have otherwise acquired a speaking knowledge of Spanish, should begin their study of Spanish with Spanish 2311. The course will meet the needs of those who have obtained a speaking knowledge of Spanish with little or no formal study. Successful completion of such a course will prepare the student to register for 2312.

3301 Spanish Grammar and Composition (3-0). A comprehensive review of Spanish grammar and composition designed (1) to further develop the student's comprehension and command of spoken Spanish, (2) to expand the student's vocabulary, and (3) to provide practice in formal written Spanish. Prerequisite: SPAN 2312 or consent of instructor.

3308 Studies in Spanish (3-0). A topics course with an in-depth study of specific areas of Spanish and Spanish American literatures and other areas related to Spanish language and Hispanic culture. May be repeated for credit if topic varies. Topics will be chosen from:

2. Studies in Spanish Literature: Medieval, Golden Age, Modern
4. Studies in Mexican Literature Prerequisite: Spanish 2302 or consent of instructor.

3310 Spanish Literature I (3-0). A survey of major Spanish authors and works from the 11th to the 17th centuries. Prerequisite: Spanish 2312 or consent of the instructor.

3311 Spanish Literature II (3-0). A survey of major Spanish authors and works from the 18th to the 20th centuries. Prerequisite: Spanish 2312 or consent of the instructor.

3315 Hispanic Civilization and Culture: Spain (3-0). An overview of the development of Spanish culture from ancient times to the present, using the perspectives of history, art, and literature. Prerequisite: Spanish 2312 or consent of the instructor.

3316 Hispanic Civilization and Culture: Latin America (3-0). An overview of the development of cultures in Mexico, Central America, and South America, stressing comparisons and contrasts between countries. Prerequisite: Spanish 2312 or consent of the instructor.

3317 Modern Spanish Civilization (3-0). This course deals with the study of Spanish civilization since the XVI century to modern day Spain. The concentration will be in the Spanish presence in the Americas. Prerequisite: Spanish 2312 or consent of instructor.
3318 Contemporary Latin American Civilization (3-0). This course will study the development and growth of Latin American countries from the XIX century to present day. A socio-economical, literary and political view of contemporary Latin America will be presented. Prerequisite: Spanish 2312 or consent of instructor.

4303 History of Spanish (3-0). The sounds, words, and sentence structure of Spanish with an overview of how the language developed and how it varies within Spanish-speaking countries. Prerequisite: Spanish 2312

4306 Modern Drama (3-0). A study of the Spanish drama of the 19th and 20th centuries. The student will read dramas representative of the different types and movements of the period and will discuss them in class and in written form. Class discussion conducted in Spanish. Prerequisite: Spanish 2312 or consent of the instructor.

4307 Readings and Research (0-3). Directed studies on specific topics of Spanish language, Spanish literature and Spanish American literature. May be repeated for credit when the topic varies. Prerequisite: Spanish 2312 or consent of instructor.

4310 Spanish American Literature I (3-0). A survey of major Spanish American authors and works from 1492 to 1830. Prerequisite: Spanish 2312 or consent of the instructor.

4311 Spanish American Literature II (3-0). A survey of major Spanish American authors and works from 1830 to the present. Prerequisite: Spanish 2312 or consent of the instructor.

4312 Teaching Spanish (3-0). A study of methods and materials used in teaching Spanish from Grades K - 12. The course presents ideas and techniques for teaching grammar, composition, literature, and culture. Prerequisite: Spanish 2312 or consent of the instructor.

4315 Introduction to Translation (3-0). Introduction to the theory, methods and practice of Spanish-English translation and English-Spanish translation. The student will learn how to address translation problems related to culture and language as well as the fundamentals of translating general material from different fields, such as journalism, advertising, tourism, the law, health, business, etc. Prerequisite: Spanish 2312 or consent of the instructor.

5303 Studies in Spanish American Literature (3-0). Selected authors, works, and genres from Central American, South American, and Mexican literature, including such periods as Colonial, Nineteenth Century, and Modern. Course may be repeated for credit when topic varies.

5309 Readings and Research (3-0). Individually guided research in Spanish or Spanish-American literature or in Spanish language and linguistics study. May be repeated for credit when the topic varies.

SRSU FIRST YEAR SEMINAR (SRSU)

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1101 (SRSU) First Year Seminar (1-0). This course focuses on (1) the psychology of learning, cognition, and motivation, (2) factors that impact learning, and (3) application of learning strategies. Students use assessment instruments (e.g. learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Additional topics include goal-setting, motivation, educational and career planning, time-management, note-taking, preparing for exams, and utilizing learning resources. Students developing these skills should be able to continually draw from this course.

THEATRE (THEA)

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1112 Musical Theatre Performance (0-2). Theatrical instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester.

1120 (DRAM 1120) Theatre Practicum I (0-3). Practical course designed for freshman students who do acceptable work in the dramatic productions of the department. Non-theatre major and minors must receive permission from the instructor to enroll.

1121 (DRAM 1121) Theatre Practicum II (0-3). Practical course designed for freshman students who do acceptable work in the dramatic productions of the department. Non-theatre major and minors must receive permission from the instructor to enroll.

1149 (DANC 1149) Ballet Folklorico (0-1). Sul Ross Ballet Folklorico de las Americas celebrates Mexican cultural heritage via the performance of a variety of Mexican regional dances, both ritual and secular. The Ballet Folklorico serves as a cultural and educational ambassador for the University. Maybe repeated for credit.

1305 (DANC 1305) World Dance I (1-2). This course introduces the student to the study of dance from a multicultural perspective, with particular emphasis given to the social, religious, political and historical relevance of dance throughout the world. Students will learn dance techniques and choreography from diverse cultures, with the expectation that greater depths of culture appreciation and understanding arise from participation in the performance traditions studies.

1310 (DRAM 1310) Introduction to the Theatre (3-0). A survey of the elements of theatre and how they were formed. What makes theatre? Where has it come from and what is the future?
1322 (DRAM 1322) Stage Movement (1-2). Examination and practical application of the styles of movement for the performing artist. Activities and exercises for the performing artist. Activities and exercises to improve posture, agility, vision, endurance and personal awareness.

1351 (DRAM 1351) Acting I (2-2). A practical laboratory of the principles and technique of acting for the stage.

2112 Musical Theatre Performance (0-2). Theatrical instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sign confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

2120 (DRAM 2120) Theatre Practicum III (0-3). Practical course designed for sophomore students who do acceptable work in the dramatic productions of the department. Non-theatre major and minors must receive permission from the instructor to enroll.

2121 (DRAM 2121) Theatre Practicum IV (0-3). Practical course designed for sophomore students who do acceptable work in the dramatic productions of the department. Non-theatre major and minors must receive permission from the instructor to enroll.

2304 Oral Interpretation (3-0). A course in the development and use of oral communication performance skills in theatre or communication secondary education, with emphasis on script development for prose, poetry and one-act play UIL competition. Additional emphasis on projection, articulation, breath control, resonance, variety, interpretation and body movement.

2305 Topics in Theatre (3-0). A course dealing with topics in the study of theatre, such as "Women in Theatre," "Introduction to Design," and "Stage Management," etc. May be repeated when the topics vary.

2307 Stage Combat (1-2). The practical application of the techniques used in the choreography of stage combat, including unarmed combat techniques and various style of weaponry.

2310 Introduction to Theatrical Design (2-2). A fundamental course in the basic aspects of all theatrical design; including scenic, costume, lighting, sound and property design. Course projects may include fabrication, modeling, computer-aided design, rendering, and construction.

2311 Stage Management (2-1). A course encompassing the basic theatrical stage management skills and procedures, such as budgeting scheduling and personnel management, for the pre-rehearsal, rehearsal and performance periods of a production.

2331 (DRAM 2331) Stagecraft (2-2). A lecture-laboratory course designed to give the student a fundamental knowledge of the theory and techniques of scenic construction and lighting.

2336 (DRAM 2336) Voice for the Theatre (3-0). Vocal techniques, including diction and dialect, for performing on the stage.

3101 Theatre Workshop (0-3). Practical courses designed for junior students who do acceptable work in the dramatic productions of the department. Non-theatre majors and minors must receive permission from the instructor to enroll.

3102 Theatre Workshop (0-3). Practical courses designed for junior students who do acceptable work in the dramatic productions of the department. Non-theatre majors and minors must receive permission from the instructor to enroll.

3112 Musical Theatre Performance (0-2). Theatrical instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

3113 Ballet Folklorico de las Americas Ensemble (0-1). Sul Ross Ballet Folklorico de las Americas Ensemble celebrates Mexican cultural heritage via the performance of a variety of Mexican regional dances, both ritual and secular. The Ballet Folklorico serves as a cultural and educational ambassador for the University. May be repeated for credit.

3301 Acting II (2-2). Study and practice of intermediate and advanced techniques used by actors in the development of good stage habits and character development. Prerequisite: Theatre 1301, 1302 or instructor's permission

3302 The History of Theatre I: Greek Theatre through Renaissance Theatre (3-0). A survey of the important people, works, and developments in theatre history from the ancient Greeks through the European Renaissance.

3303 Repertory Theatre (0-5). Practice and theory in the problems of management, production, and acting in repertory theatre. May be repeated for credit, but not more than once for theatre majors or minors.

3304 Special Topics (3-0). A course dealing with topics in the study of theatre, such as theatrical design, mask characterizations, specialized acting methods or regional theatre history, etc. May be repeated when topic varies.

3305 Theatrical Design Research (0-3). Individual research on selected subjects to meet student needs and interests in theatre. May be repeated when topic varies.

3306 The History of Musical Theatre (3-0). The history of the musical theatre from operetta to contemporary musicals. Exposure and study of major and minor works of the musical stage.
3307 Musical Comedy Workshop. (0-5) Practical training in the technique and style of performing scenes and songs from musical theatre. May be repeated for credit, but not more than once for theatre majors or minors.

3308 Acting III: Acting for the camera (2-2). A study of acting styles specific to film and television. Emphasis on sense memory, scene work, audition techniques and preparation to enter the industry.

3309 Stage Make-up (1-2). A practical laboratory of the principles and techniques of stage and film make-up.

3310 Creative Dramatics and Children's Theatre (2-1). The study of the effects and techniques of creative dramatics in the classroom and the study and understanding of children's theatre.

3311 Playwriting (1-2). The study and practice of the techniques of playwriting from scene work to the completion of a long one-act play.

3312 Script Analysis (3-0). A study of the principles of various styles and periods of dramatic literature, involving a history of criticism from Aristotle to the present. Representative plays will be analyzed for theme, structure, characterization and dialogue with a view to their influences on contemporary theatre. Emphasis is placed on written student criticism and evaluation of plays. Writing enhanced course. Prerequisite: English 1302

3313 Scenic Design (2-1). The theory and practical application of the scenic designer's process from conception to presentation of design and an understanding of the scenic designer's responsibilities and duties as a member of the production team and as the head of the scenic design team. Prerequisite: Theatre 2310

3314 Costume Design (2-1). The theory and practical application of the costume designer's process from conception to presentation of design and construction and an understanding of the costume designer's responsibilities and duties as a member of the production team and as the head of the costume design team. Prerequisite: Theatre 2310

3315 Lighting and Sound Design (2-1). The theory and practical application of the lighting and sound designer's process from conception to presentation of design and an understanding of the designer's responsibilities and duties as a member of the production team and as the head of the lighting or sound design team.

3316 The History of Theatre II: The Theatre of the English Restoration through Contemporary Theatre (3-0). A survey of the important people, works, and developments in theatre history from the English Restoration through contemporary theatre.

3317 Acting IV: Advanced Acting for the Camera (0-5). Exploration of acting techniques affiliated with mixed media: film, video and game design development.

3318 Directing I (2-1). The technology and application of directing for the stage. Prerequisite: THEA 3312.

3320 Regional Dances of Mexico (2-1). This lecture/participation course introduces the student to the Mexican folkloric dance tradition, with focus on learning the regional dances, culture and costuming for regions performed by the Sul Ross Ballet Folklórico de las Americas and gaining an understanding and appreciation of Mexican culture and history. May be repeated for credit.

4101 Theatre Workshop (0-3). Practical courses designed for senior students who do acceptable work in the dramatic productions of the department. Non-theatre majors and minors must receive permission from the instructor to enroll.

4102 Theatre Workshop (0-3). Practical courses designed for senior students who do acceptable work in the dramatic productions of the department. Non-theatre majors and minors must receive permission from the instructor to enroll.

4112 Musical Theatre Performance (0-2). Theatrical instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

4304 Directing II (2-1). Continued study of the theory and application of directing for the stage from the directorial vision to the production of a one-act play.

4305 Studies in Drama (0-3). Directed individual study and practice in a selected area of drama. May be repeated for credit when topic varies.

4306 Acting V: Acting Styles (2-2). An advanced study of acting styles and periods for the stage. Prerequisite: Theatre 3301 or instructor's permission.

4307 Senior Project (0-4). An intensive, independent study of a selected area of theatre, such as directing, writing, or designing of a full-length play or acting in a one-person show, by those seeking a theatre degree or theatre certification. An oral comprehensive examination and exit survey are additional requirements.

5112 Musical Theatre Performance (0-2). Advanced instruction in the preparation and performance music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester. Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the
beginning of the semester.

5303 Seminar in Theatre (2-2). An advanced study of problems of analysis, design, rehearsal and performance in theatre. May be repeated for credit when topic varies.

5304 Theatre Workshop (1-4). An advanced study of problems of analysis, design, rehearsal and performance in modern theatre and classic revivals. May be repeated for credit.

5305 Individual Research (0-4). Directed individual research in selected areas of theatre and dramatic arts. May be repeated for credit when topic varies.

VOCATIONAL NURSING (VNNSC)

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1219 Professional Development (2-0). Study of the importance of professional growth. Topics include the role of the vocational nurse in the multi-disciplinary health care team, professional organizations and continuing education. Basic concepts of management, motivation, and collegial practice are included. Incorporates knowledge necessary to make the transition from student to graduate vocational nurse. (Fall)

1227 Essentials of Medication Administration (2-1). General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement. (Spring)

1238 Mental Illness (2-0). Study of human behavior with emphasis on emotional and mental abnormalities and modes of treatment incorporating the nursing process. (Fall)

1330 Maternal-Neonatal Nursing (3-2). A study of the biological, psychological, and sociological concepts applicable to basic needs of the family including childbearing and neonatal care. Utilization of the nursing process in the assessment and management of the childbearing family. Topics include physiological changes related to pregnancy, fetal development, and nursing care of the family during labor and delivery and the puerperium.

1334 Pediatric Nursing (3-1). A study of the pediatric patient and family during health and disease. Emphasis on growth and developmental needs utilizing the nursing process.

1360 Clinical - Practical Nurse I (0-16). On-site clinical instruction, supervision, evaluation and placement by Clinical Instructor. Processing from simple to complex, the student will apply theory, concepts and skills involving specialized material, equipment and procedures using the nursing process. (Spring)

1405 Health Science (3-3). An introduction to the general principles of anatomy and physiology with a focus on pathophysiology, nutrition and microbiology with a focus on infection control principles. These concepts are necessary for understanding body processes and basic principles underlying health promotion and therapeutic interventions. (Spring)

1410 Nursing in Health and Illness III (2-6). Continuation of Nursing in Health and Illness II. Reviews nursing theories of nursing practice by describing application of the nursing process to selected complex medical/surgical conditions. Incorporates knowledge of pharmacological and nutritional interventions for selected complex medical/surgical conditions. (Fall)

1460 Clinical - Practical Nurse III (0-23). Continuation of clinical 2331. Instruction provides detailed education, training and work-based experience and direct client care at a tertiary hospital. Includes specific learning objectives with on-site instruction, supervision and evaluation by Clinical Instructor. Pediatric nursing, preceptorship experience, and psychiatric nursing experience available. (Fall)

1461 Clinical - Practical Nurse II (0-16). A method of instruction providing detailed education, training and work-based experience and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. Clinical experiences are unpaid, external learning experiences. On-site instruction, supervision and evaluation are done by the Clinical Instructor. (Summer)

1500 Nursing in Health and Illness I (4-4). Introduction to and application of primary nursing skills. Emphasis on utilization of the nursing process and related scientific principles for selected medical/surgical conditions of the adult and geriatric client. (Spring)

1502 Applied Nursing Skills I (3-4). Introduction to and application of nursing skills. This course introduces nursing fundamentals presented in a simple to complex format, utilizing the nursing process. Concepts are applied in a skills laboratory, community setting and/or health care agency. (Spring)

1509 Nursing in Health and Illness I (5-1). Continuation of Nursing in Health and Illness I. Introduction of theories of nursing practice by describing the application of the nursing process to selected medical/surgical conditions; incorporates nutrition and drug therapy and nursing interventions in the care of adults. (Summer)

2331 Advanced Nursing Skills (3-0). Introduction and mastery of advanced nursing skills; and competencies in a variety of health care settings utilizing the nursing process as a problem solving tool. Concepts are applied in a lab or clinical experience including care of adult, geriatric, neonatal and pediatric clients in a variety of health care settings. (Fall)
2301 \textit{Introduction to Women’s Studies} (3-0). This course is an introduction to the study of women and gender using interdisciplinary and cross-cultural approaches. The roles and experiences of women of different nationalities, ethnicities, and cultures will be studied.

3301 \textit{Topics in Women’s Studies} (3-0). Studies of specific topics in Women’s Studies, such as Hispanic Women, Women in Culture and Society, Women in Modern America. May be repeated for credit when topic varies.

4310 \textit{Senior Colloquium in Women’s Studies} (3-0). Required capstone course for the Women's Studies minor. Students consult with Women's Studies Coordinator to select an internship, mentoring project, portfolio, or other special project for the course. Prerequisite: WS 2301, six additional semester hours in Women's Studies, approval of Women's Studies Coordinator.

5301 \textit{Introduction to Women’s and Gender Issues} (3-0). An interdisciplinary approach to women's and gender studies including historical, legal, psychological, political, scientific, and aesthetic issues.

5302 \textit{Topics in Women’s Studies} (3-0). Studies of specific topics such as Women’s Autobiographical Writing, Communication and Gender, Women and the Arts, Comparative Women’s History, Gender and Criminal Justice, Postcolonial Women Writers, Global Feminisms. May be repeated for credit when topic varies.