Courses

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Courses numbered 095 - 599 (U) are offered by Murray State University for undergraduate credit; courses numbered 600 - 999 (G) are for graduate credit. The University reserves the right to make any adjustments in the *Bulletin* which are deemed necessary. **Note:** Repeated 099 (Transitions) courses (regardless of course prefixes or departmental requirements) will be treated as duplicate courses, with only one course allowed to count toward graduation requirements.

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An agriculture course designed for students who desire to expand their knowledge of tobacco production. Students will be introduced to the practical aspects of tobacco production in the Kentucky tobacco types.

General principles and practices involved in handling home and commercial planting of the major fruit crops.

A study of the fundamental principles underlying commercial and home garden production of vegetables. (Spring, odd years)

The identification and use of woody deciduous plant materials in the landscape.

A general introduction to the many aspects of forestry including dendrology, silvics, silviculture, and wood utilization. Some emphasis will be placed on the management of forest lands for recreation and wildlife purposes.

A study of digestion, absorption and utilization of nutrients, characteristics of feedstuffs, nutritional disorders and nutrient requirements of animals. Prerequisite: AGR 100.

A study of types of purebred and commercial beef cattle, sheep and swine, both market and breeding classes. Special emphasis is placed on writing and giving oral reports. Prerequisite: AGR 100. (Fall)

Involves a study of the role of the light horse and the development of an equine vocabulary. Topics covered include the basic nutritional, housing and health requirements of the light horse. (Fall)

Deals with various topics of interest to the horseman including psychology, evaluation, anatomy and health care. Prerequisite: AGR 302. (Spring)

This course is concerned with basic training techniques and the development of equitation skills using the western seat. Prerequisites: AGR 201 and approval of instructor. (Fall)

This course presents equitation skills and techniques utlizing the forward seat. Included in the course are hunt seat, show seat, and other methods of English style equitation. Principles of schooling the jumping horses are emphasized. Prerequisites: AGR 201 and approval of instructor. (Spring)

Practical application of management principles involving health, nutriton, grooming, and training of horses. Prerequisite: approval of instructor.

A course designed for the equine student to study the economics and business related aspects of facility management. Students will be taught the value of short and long term planning and the decision making process that is involved in the operaton of a commercial equine facility. Some weekend attendance will be required.

The study of animal technology involving management, nutriton and health of small and large animal species. Lecture, two hours; laboratory, two hours. Pre- or corequisite: AGR 100.

A study of the history and importance of the beef cattle industry; ph hŮs

Course focuses on the study of anatomy and physiology of the gastro-intestinal system and its role in digestion and utilization of feeds, with particular emphasis on the horse. Students will develop rations to feed various classes of horses and address the relationship of nutrition and health. Prerequisite: AGR 303 or permission of instructor.

. A study of species specific to livestock handling techniques based upon proven techniques, methods and livestock behavioral patterns. This class will include on the farm training with livestock. Prerequisite: AGR 100.

An introductory study of the various phases of poultry production, diagnosis and dy - Œ ş ocuses 3 Ţ

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Course is intended to con t nue and emphasize the concepts and skills of graphic communica t on. Emphasis will be placed on learning professional design methods and applying them to designs for the web. Projects will stress considera t ons in design theory and the principles of typography, par t cularly as they apply to user interface design, site design, and naviga t on. Students will work in both an individual and a collabora t ve manner involving wri t ng, electronic design, adver t sing, and photography. Prerequisite: ART 350.

A study of form, space and surface through the development of 3-D sculptural assignments. Basic sculpture techniques involving addi t ve and subtrac t ve methods. Studio and lecture. Six hours per week. Prerequisites: ART 111 and 112 or permission of instructor.

Further explora t on of form, space, and surface and an introduc t on to more advanced techniques and permanent materials. Studio and lecture. Six hours per week. Prerequisite: ART 360 or permission of instructor.

A con t nua t on of ART 361. Studio and lecture. Six hours per week. Prerequisite: ART 361 or permission of instructor.

Beginning ceramics introduces students to a broad spectrum of clay working including the making of func t onal po t ery, the vessel as metaphor, and clay as a medium for sculpture. Students learn hand building, wheel throwing, and glazing among other basic ceramic techniques. Design, cra f smanship, and cri t cal thinking are emphasized. Six hour per week. Pre- or Corequisite: ART 101 or 111 or 112 or permission of instructor.

Con t nued development of skills and concepts learned in ART 370 along with the introduc t on of advanced techniques including cast-ing and kiln f ring. Idea t on, cri t cism and discussion are emphasized. Six hours per week. Prerequisite: ART 370 or permission of instructor.

Con t nued development of skills and concepts learned in ART 371 with an emphasis on individual inves t ga t on, technical f nesse, concept, content, cri t cism and discussion. Six hours per week. Prerequisite: ART 371 or permission of instructor.

Introduc t on to the techniques and materials of intaglio and relief prin t ng, including collograph, drypoint, etching and linoleum cuts. Composi t on, cra f smanship, and technique are emphasized. Six hours per week. Prerequisites: ART 101, 111, or permission of instructor.

Introduc t on to the techniques and materials of lithography including stone, plate and photo lithography. Composi t on, cra f sman-ship, technique and individual inves t ga t on are emphasized. Cri t cism and discussion. Six hours per week. Prerequisite: ART 379 or permission of instructor.

Introduc t on to the techniques and material of silkscreen, including photo silkscreen. Composi t on, cra f smanship, technique and individual inves t ga t on are emphasized. Cri t cism and discussion. Six hours per week. Prerequisite: ART 380 or permission of instructor.

Students will be introduced to the fundamentals of digital photography while exploring crea t ve image making as a means of personal expression. By examining the basic formal founda t ons and concepts in photography through readings and lab based projects, as well as par t cipa t ng in discussion and cri t ques, students will build a visual literacy for applica t on in daily life and for developing a deeper understanding of the medium and hits history. Cameras are not supplied. Six hours per week.

Con t nua t on and re f nement of technical aspects presented in ART 382 with expanded emphasis on individual inves t ga t on. Discussion and cri t cism. Six hours per week. Prerequisite: ART 382 or permission of instructor.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Prerequisite: permission of chair.

An independent problems course in studio art for advanced undergraduates majoring in art under the direction of a faculty member. The student must submit and receive approval of a detailed study plan prior to registration. May be taken for up to three times for credit. Prerequisites: consent of supervising faculty member and permission of department chair.

An independent problems course in art history for advanced undergraduates majoring in art under the direction of the art history faculty. The student must submit and receive approval of a detailed study plan prior to registration. May be repeated once for credit. Prerequisites: consent of supervising faculty member and permission of department chair.

An independent problems course in art education for advanced undergraduates majoring in art under the direction of the art education faculty member. The student must submit and receive approval of a detailed study plan prior to registration. Does not count as a studio elective. May be repeated up to three times for credit. Prerequisites: consent of supervising faculty member and permission of department chair.

Final project for the B.F.A. candidate taking an area in art. Documentation (slides/video) and written statement (which includes a description of the direction and influences upon the student's work) must accompany the practicum exhibition. Graded pass/fail. Prerequisite: ART 298 or permission of instructor.

Final project for the B.A./B.S. candidate taking an area in art. Written statement, including description of the direction and influences upon the student's work, must accompany the work exhibited in the practicum exhibition. Graded pass/fail. Prerequisites: ART

Concentrated exploration of selected ceramic processes with emphasis on personal expression. Six hours per week. Prerequisites: two courses in ceramics or permission of instructor.

Continuation of ART 571. Six hours per week. Prerequisite: ART 571 or permission of instructor.

Advanced problems. Concentrated study of selected printmaking processes with emphasis on personal expression. Individual direction and technical proficiency are emphasized. Criticism and discussion. Six hours per week. Prerequisites: two advanced courses in printmaking or permission of instructor.

Advanced problems. Continuation of ART 580. Six hours per week. Prerequisite: ART 580 or permission of instructor.

Concentrated exploration of individual problems, culminating in a unified body of work such as a book or portolio. Individual expression, discussion and criticism. Six hours per week. Prerequisites: two courses in photography or permission of instructor.

Continuation of ART 583. Six hours per week. Prerequisite: ART 583 or permission of instructor.

An independent problems course in studio art for graduate students under the direction of a faculty member. The student must submit and receive approval of a detailed study plan prior to registration. May be repeated up to three times for credit. Prerequisites: permission of instructor and permission of department chair.

An independent problems course in art history for graduate students under the direction of the art history faculty. The student must submit and receive approval of a detailed study plan prior to registration. May be repeated up to three times for credit. Prerequisites: consent of supervising faculty member and permission of department chair.

An independent problems course in art education for graduate students under the direction of the art education faculty. The student must submit and receive approval of a detailed study plan prior to registration. Does not count as a studio elective. May be repeated up to three times for credit. Prerequisites: permission of instructor and permission of department chair.

American Sign Language (ASL) Level I is designed for the student who wants to acquire ASL skills to communicate with persons who are deaf. The course will focus on basic communication functions such as introducing oneself, exchanging personal information, making requests, talking about family and occupations, giving directions, attributing qualities to others and talking about routines. The course will also introduce students to deaf culture. The course will be taught without the use of voice.

American Sign Language (ASL) Level II is designed for the student who wants to acquire basic ASL skills to communicate with persons who are deaf. The course will build upon ASL I and focus on different types of numbering systems, cross-cultural communication, identifying and describing others, how to talk about routines, family, and occupations and how to make requests. The course will further introduce students to the Deaf culture and a brief history of Deaf America. The course will be taught without the use of voice. Prerequisite: ASL 101.

Course is designed to teach intermediate expressive and receptive ASL skills and the cultural features of the language and community. The course will focus on awareness of and respect for the Deaf Culture. The course will be taught without the use of voice. Prerequisite: ASL 102 with a *C* or better or permission of instructor.

Course is designed to further develop intermediate expressive and receptive ASL skills and cultural features of language and community. The course will focus on the understanding of signing with meaning to move students toward intermediate plus level. Students will increase their awareness of and expand their respect for the Deaf Culture. The course will be taught without the use of voice. Students will attend three Deaf events. Prerequisite: ASL 103 with a minimum grade of *C* or instructor permission.

Descriptive examination of the objects of the solar system and the stellar universe. A brief historical presentation of the fundamental astronomical theories provides a basis for the examination. Multimedia presentations are used. Corequisite: AST 116.

Laboratory to accompany AST 115. Two hours laboratory per week. Corequisite: AST 115.

An examination of the natural history of vertebrates, including identification, taxonomy, ecology, evolution, behavior, conservation, and management with an emphasis on species found in the eastern U.S. Four hours lecture/laboratory per week plus required field trips. Prerequisite: BIO 221 or permission of the instructor.

Dissection and study of representative chordate systems with emphasis on the anatomy and evolution of fishes, amphibians, reptiles, birds, and mammals. May require additional laboratory supplies fee. Eight hours of class per week. Prerequisites: BIO 115, 216, and 221 or permission of instructor. (Spring)

A detailed consideration of biological systems, their properties and interrelationships. Cellular and molecular biology are emphasized. Three lectures per week. Prerequisites: BIO 115, 216, 221, and 222 and two semesters of chemistry or permission of instructor.

Introductory study of animal physiology. The organ and systems approach is used to compare animals. Emphasis on vertebrates and certain invertebrates. Three lectures and three hours laboratory per week. Prerequisites: BIO 115, 216, 221, 222, two semesters of chemistry, or permission of instructor; PHY 132 recommended.

Discussion of the modern concepts of cell biology as applied to cell interactions in multi-cellular organisms. Prerequisites: BIO 115, 216, 222, and two semesters of chemistry or permission of instructor.

The biological nature of man. A survey of man's physical origin, his primate background and his evolution. Cultural association with fossil evidence and concepts of race. (Same as ANT 325.)

An introduction to the fundamental concepts of ecology as they pertain to plants and animals, including humans. Emphasis will be placed on the basic principles of evolutionary, population, community, and ecosystem ecology. Three lectures and two hours laboratory per week. Prerequisites: BIO 115, 216, 221, and 222 or permission of instructor.

An introduction to molecular and classical genetics with laboratory experiments involving various organisms used extensively in genetic studies. Three hours of lecture and three hours of laboratory per week. Prerequisites: BIO 115, 216, and 221.

Discussion of the vascular plants with emphasis on classification and phylogeny. Laboratory and field studies of the vascular plants of West Kentucky focusing on their identification, habitats, distribution and ecological role in this region. Prerequisite: BIO 222.

A survey and application of methods and techniques used in wildlife management; examples — biotelemetry, live trapping, etc. Three hours of lecture and three hours of laboratory per week. Prerequisites: BIO 221, 222 and 330.

Course concentrates on the methods for preparation and presentation of specific papers, posters, and oral communication. Students will utilize a dataset relevant to wildlife and conservation biology to produce a publication quality manuscript, a poster suitable for a scientific meeting. Topics covered include abstracts, the nature of scientific writing, structure and organization of scientific publication, use of literature, graphic, and graphic design, and methods of polishing the oral presentation. Prerequisite: BIO 216; corequisite BIO 380.

A study abroad course that includes meetings during the regular session as well as a short-term (10-14 days of travel) study abroad experience highlighting selected areas in biological inquiry in another country and culture (e.g., ecosystems and conservation issues in another biome; visiting museums, universities and laboratories of foreign scientists). The course includes pre- and post-travel meetings, lectures, reading assignments and discussions. This course can be taken more than once for credit as topics vary.

For students who wish to learn the iden t fca t on principles and actual iden t fca t on of living organisms. Course work will include a study of the ecological aspects of the various organisms and their distribu t on. Techniques of teaching about nature will be emphasized. Prerequisite: junior or senior standing for science educa t ons majors.

This course is designed to teach students the theory, principles and applica t ons of scanning electron microscopy (SEM). A f er a predetermined number of instruc t onal hours, the student is expected to successfully complete a test which measures the competency of the individual in SEM opera t on. Subsequently, the student is required to complete a short research project u t lizing SEM. Prerequisites: permission of inst l' a di in

Course will provide instruction in many techniques used by fishery scientists. Students will learn about field sampling, laboratory analysis, computer modeling, and statistical analysis of fisheries data. The course will take advantage of the Hancock Biological Station to provide extensive hands-on practice in all techniques. Three lectures plus four hours lab per week. Prerequisite: BIO 330.

A survey of the flora of West Kentucky and surrounding states. This course should be of interest to anyone interested in the plants of the region. Emphasis will be placed on field identification of common species, identification using keys, collection, and preparation of herbarium specimens, and general plant ecology of the region. Prerequisite: BIO 222.

Course is designed to teach students two main bodies of knowledge. First is an ability to identify common tree species in the eastern US and to know their natural histories and their value as timber and habitat. Second is an understanding of how these various species interact with each other and their environment to compose functioning forests, along with forest management strategies for a wide range of natural resource goals. With this knowledge, students will "see both the forest and the trees." Class will comprise three hours of lecture and four hours of field-oriented lab per week. Prerequisites: BIO 216 and BIO 222; or permission from instructor.

This course will focus particularly on systematics and phylogenetic analyses, although other bioinformatics-related topics such as genomics and geographic information systems will be included. Students will search bioinformatic data sources, retrieve and edit data, and perform computer analysis on protein, DNA, and morphological data. Underlying biological processes will also be discussed. Three hours lecture and two hours computer lab per week. Prerequisite: BIO 333 .

Functional anatomy, ecology and taxonomy of the freshwater invertebrates. Emphasis will be placed on collection, preserving and identifying invertebrates of this region. Two lectures and four hours of laboratory per week. Prerequisite: BIO 221.

The study of the ecology, natural history, life cycles, taxonomy and systematics of lotic and lentic insects. The class will include several field trips to aquatic habitats and the preparation of a working collection. Two hours lecture and four hours laboratory per week. Prerequisite: BIO 330 or permission of instructor.

The introduction to the study of insects. Students become acquainted with about 200 Families of insects living in the terrestrial and aquatic habitats of the Midwest. Lectures include classification, identification, evolution, ecology, agriculture, epidemiology, and forensics. Laboratory activities include identification, field sampling, specimen preparation, and insect behavior. Each student conducts a small laboratory or field project on some aspect of insect ecology, behavior, or natural history. Prerequisite: BIO 330.

Survey and discussion of the scientific literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that affect terrestrial and aquatic ecosystems. The course will focus on interdisciplinary themes that incorporate new research results form the fields of biology, chemistry, and geosciences. Prerequisite: junior or higher standing in biology, chemistry or geosciences. (Same as CHE/GSC 565.)

Ecological principles in relaton to animal populatons, including human populatons. Emphasis is placed on recent literature and the approach involves lecture, seminar and feld actvites. Prerequisite: BIO 330.

A general study of the interactons of individual plants and plant communites with their environment, emphasizing the nature and energetcs of environment-organism interrelatonships and species-community dynamics. Methods of analysis and interpretaton of feld data are stressed. Field work comprises an integral part of the course. Two lectures and four hours of laboratory per week. Prerequisites: BIO 330 and either BIO 154, 350, or 553.

An introductonto ecological data analysis and interpretaton. Emphasis is placed on the understanding of ecological data structure and analytcal methods. Major topics include sampling, diversity analysis, resemblance measurements, formal classifcaton techniques, and patern recognitons. Two lectures and four hours of computer lab per week. Prerequisites: BIO 330 and STA 135.

A lecture course which involves discussions of general concepts of DNA structure, replicaton and translaton. Current concepts in bacterial and bacteriophage genetcs, such as gene transfer, recombinaton, gene regulaton, and recombinant DNA technology will be examined. Prerequisites: BIO 300 and 333, or permission of instructor.

The laboratory covers classical bacterial and viral genetcs such as transductonconjugaton, mutagenesis and mutant analysis by complementaton, as well as recently developed recombinant DNA techniques. The student will get hands-on experience in DNA and RNA purifcaton, restrictonendonuclease mapping, cloning and expression of foreign DNA in E. coand DNA sequencing. These techniques and a clear understanding of the processes involved in gene expression will equip the student well for either a positon in industry or graduate study. Prerequisite: Previous or concurrent BIO 533. (Same as CHE 534.)

A study of evolutonary concepts. Prerequisite: BIO 333.

An introductonto the principles of animal behavior. Ecological and evolutonary implicatons of animal behavior are emphasized. Two lectures and four hours of laboratory per week. Prerequisite: BIO 330 or permission of instructor.

An introductonto testng hypotheses in animal behavior. Ecological and evolutonary implicatons of animal behavior are emphasized. Three hours of laboratory per week. Prerequisites: BIO 330 or consent of the instructor; BIO 638 or concurrent enrollment.

Students will learn and practce descriptve statstcs, experimental design, regression, ANOVA, ANCOVA, and data management. In contrast to other statstcs courses, students will spend more of their tme in the feld than in the classroom. Prerequisites: any feld biology course; BIO 330, or permission of instructor.

The study of the movement of water through the environment and its relatonship to biotc systems. Areas emphasized include the hydrologic cycle and its infuence on groundwater, lotc, and lentc systems; the efect of water on plant and animal communites; and the infuence of human actvity on watershed structure and functon. Prerequisite: BIO 330 or permission of instructor. (Same as GSC 642.)

A meaningful, planned and evaluated work experience related to the career and educatonal objectves of the student for which both pay and graduate credit may be received. Graded pass/fail. Prerequisite: permission of chair.

A study of the basic principles, concepts and functon of microbes (eubacteria, archebacteria and cyanobacteria) in the environ-

Course is designed to teach students two main bodies of knowledge. First is an ability to iden t fy common

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The course guides the student through the completion of the field of study senior project, which is a baccalaureate senior thesis required for completion of the Bachelor of Integrated Studies degree. A student must earn a minimum grade of C in this course to receive a Bachelor of Integrated Studies. Prerequisites: admission to B.I.S. program, senior standing, BIS 301 and 302 (or completion of two approved courses in the field of study

A course in physical chemistry for students in technical and engineering fields. Topics include kinetic theory, thermodynamics, phase diagrams, solution chemistry, electrochemistry, kinetics, quantum theory, and spectroscopy. Prerequisites: CHE 305, MAT 309, PHY 255.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Prerequisite: permission of chair.

Problems and hours arranged individually with staff members directing the research; minimum of nine hours per week. A valuable course for students entering the chemistry profession at the bachelor's degree level and for those who plan graduate study. A written report is required. Prerequisites: Approval of research director and department chair.

This course surveys the scope and fields of toxicology, including the methods and design of toxicity studies with attention to toxic chemicals, their effects and regulatory considerations. Prerequisite: CHE 320 or permission of instructor.

Practical aspects of wave mechanics and bonding theories for covalent and ionic compounds; considerations of symmetry; properties and theories associated with the solid state, acids, bases, and coordination compounds. Limited descriptive chemistry. PES, NMR, IR, and UV/VIS spectroscopy applications in modern inorganic chemistry. Prerequisite: CHE 420 or its equivalent with a grade of *C* or better. (Fall only.)*C*

Laboratory and/or library investigations on special topics. Minimum of nine hours per week. May be repeated once for credit. Prerequisites: senior standing and permission of instructor.

An advanced study of the chemical basis of fuel technology. Topics may include alternatives to petroleum products, synthetic fuels, and electrochemical fuel cells.

Reports concerning current chemical literature including student-faculty discussions.

Reports concerning recent research carried out in the department including student-faculty discussions.

Discussion of the application of chemistry principles to industrial processes.

This course surveys the scope and fields of toxicology, including the methods and design of toxicity studies with attention to toxic chemicals, their effects and regulatory considerations. Prerequisite: CHE 320 or permission of instructor.

Practical aspects of wave mechanics and [illegible] Magnetic properties [illegible] considera

[illegible] hurerequi [illegible] (3).

This course concerns applications of quantum theory to solving problems in chemistry by means of advanced software and computer technology. It covers advanced quantum mechanical concepts, energy calculations, geometry optimization, potential energy surfaces, calculation of spectra, calculation of thermodynamic functions, and studying chemical reactions. Prerequisite: CHE 420 or instructor consent.

Survey and discussion of the scientific literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that affect terrestrial and aquatic ecosystems. The course will focus on interdisciplinary themes that incorporate new research results from the fields of biology, chemistry, and geosciences. (Same as BIO 665.)

Course dealing with the theory and applications of the following methods to the structural analysis of organic compounds: IR, NMR, UV-Vis, and MS. Three hours of lecture per week.

Selected topics which may include chemical applications of group theory, coordination compounds, organometallic compounds, and chemistry of less familiar elements. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 509 or 609.

Topics of current interest in physical chemistry. May be repeated for credit as different topics are featured. One to three lectures per week.

Topics of current interest in analytical chemistry. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 619.

Advanced study in selected areas of organic chemistry. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 320 with 617 very strongly recommended.

Advanced study in selected areas of biochemistry. May be repeated for credit as different topics are introduced. One to three lectures per week. Prerequisite: CHE 530 or permission of instructor.

The chemistry and physical properties of natural and synthetic polymers of practical importance, coupled with the instrumental and spectroscopic methods of their evaluation.

A study of the mechanisms of organic reactions and the effect of structure on reactivity in organic reactions as interpreted from experimental data. Prerequisite: CHE 617.

Continuation of some topics included in the one-year physical chemistry course and inclusion of new topics. Among these topics are quantum chemistry, bonding, statistical thermodynamics, spectroscopy, macromolecules and the solid state. Prerequisite: CHE 420.

Laboratory and/or library investigations on special topics, minimum of four hours per week. Prerequisite: Graduate status in the department of chemistry.

Laboratory and/or library investigations on special topics, minimum of eight hours per week. Prerequisite: Graduate status in the department of chemistry.

Laboratory and/or library investigations on special topics, minimum of 12 hours per week. Prerequisite: Graduate status in the department of chemistry.

This course consists of an independent, in-depth study of a topic or problem in computer informa t on systems under the direct supervision of a faculty member. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Graded pass/fail. Prerequisites: 12 hours of graduate work in computer informa t on systems or computer science and consent of the instructor.

An in-depth look at world history through the lens of a speci f c theme. The thema t c focus of the course will vary depending on instructor and student interest. The course will explore di f erences and simila r i t es in the human experience from ancient t mes to the contemporary world, and encompass several di f erent global regions. May be repeated up to six hours.

An interdisciplinary survey of the history of world civiliza t ons from the origins of humankind to the 15th century. This will be a lecture/discussion course following a chronological outline and, within this framework, will focus on tradi t ons, change, and diversity in the dePrerequisites: ENG 101 and 102; or ENG 105 or 150.

An interdisciplinary survey of the history of world civiliza t ons from the 15th century to the present. This will be a lecture/discussion course following a chronological outline and, within this framework, will focus on tradi t ons, change, and diversity in the development of social hierarchies (e.g., gender or class), power systems, religion, technology, and warfare.

To examine, in theory and prac t ce, issues in behavioral management, which a f ect behavior change within various school/clinical se t ngs, and to learn techniques applicable to the process of behavior in change.

An introductory course in the philosophy, ethical and legal issues, principles and techniques of counseling with emphasis on the organiza t on and administra t on of mental health services in a variety of se t ngs and diverse popula t ons.

A course designed to survey the founda t ons of community and agency mental health counseling. Topics such as administra t on and supervision of mental health systems, needs assessment and program development, educa t on and consulta t on prac t ces, as well as case management and treatment services will be covered.

An experien t al study and prac t ce of basic rela t onship and conceptualiza t on counseling techniques will be the central focus of the course. Students must complete this course with a grade of B or be t er in order to con t nue in the program. Successful comple t on of CNS 619 is a prerequisite for CNS 790.

Cri t cal analysis and evalua t on of leading theories of counseling and their implica t ons for prac t ce.

This course will present the legal and ethical rami f ca t ons that being a counselor in today's complex society demands. An in-depth examina t on of current contemporary issues will highlight the course.

A detailed study of the human life-span in terms of growth and development, founda t ons and dynamics of human behavior, personality, and learning.

A focus on pluralism, iden t ty development, cultural awareness, and the role that cultural environment plays in the lives of people and the implica t ons of that role in the helping process.

Course is designed to prepare students in the knowledge and understanding of human behavior, diagnosis 2 t ra ŋ e s Ɵ L a t Ĥ y

Supervised practice in the administration and interpretation of a variety of individual cognitive, memory, and adaptive tests such as the KABC-II, WAIS-IV, UNIT, SIB-R, and BASC-II. This class is designed solely for school psychology students and those school counselors seeking the Individual Intelligence Assessment Endorsement. Prerequisites: CNS 689 and permission of instructor.

An experiential course in the dynamics of group behavior. The student will participate in an encounter-type group experience as well as being introduced to theory and techniques of group counseling. In addition, group guidance procedures are emphasized to include meaning, purposes, scope, and methods. Strongly recommended to be taken within the first 12 hours of course work.

An extension of CNS 619 whereby students will study and apply advanced counseling techniques and basic supervisory skills. Prerequisite: CNS 619.

An extension of CNS 692. An advanced study in group counseling, research and technique application. Prerequisite: CNS 692.

Emphasis on individual research for advanced students in counseling. Prerequisites: approval of advisor and permission of instructor.

The selection, organization and implementation of personnel services. Analysis of programs, staffing and relationships of programs will be emphasized.

This course will help mental health practitioners better understand the ways gifted individuals perceive their world and how, due to their rich cognitive functioning, their perceptions have a profound impact on their emotions, their coping, and their healthy development.

Course provides knowledge and skills to be an effective school counselor for grades P-12. In particular, wt 699 the American School Counselor Association (ASCA) National Model of Foundations, Delivery, Management and Accountability for Na

. An advanced study of the strategic communicaton processes and skills of leading in diverse organizatonal contexts. The course emphasizes self-analysis and the development of leadership communicaton skills through the applicaton of related theories.

A survey of the development of organizatonal communicaton from early communicaton thinkers to contemporary individuals who have contributed theory and influenced the discipline. Prerequisite: COM 680.

Review and applicaton of research methods used in the study of communicaton variab

Course is designed to assist students in their transi t on to Murray State University. Content includes orienta t on to the speci f c area or major(s) and minor(s) within the academic program; university procedures, policies, and resources; strategies for personal and academic success, and extracurricular opportuni t es. Only one transi t ons course will count toward gradua t on. Graded pass/fail.

This course is an introduc t on to problem solving using computers which spans the breadth of issues such as logical reasoning in algorithm development, procedural, object-oriented and event-driven/visual programming languages, web programming, networking concepts, security issues and other per t nent topics regarding the use of a computer to solve real-world problems. The student will be provided with an overall picture of the many areas of exper t se in the compu t ng f eld as they apply to other disciplines as well as an introduc t on to fundamental programming concepts. This course is intended as the f rst course for CSIS majors and a course for non-majors who want to learn how to instruct computers to solve problems. Prerequisite: Math ACT score of at least 20 or MAT 097 or higher.

Introductory course covering the Internet, web page and web site design. The student will be introduced to the physical components of client-server networks and basic Internet including mailers, browsers, search engines, and FTP clients. The major part of this course will cover the fundamentals of crea t ng web pages using freely available HTML text editors and a visual web authoring tool that provides a WYSIWYG design environment. Web page development will include the use of lists, hyperlinks, images, client-side image maps, tables, forms, cascading style sheets, and interac t vity using basic JavaScript.

An introduc t on to problem-solving methods and algorithm development using an object-oriented programming language. Topics include variables, input and output, selec t on, repe t t on, methods, arrays, objects, classes, and text f le processing. This is the recommended second course for majors in the discipline. Prerequisites: CSC 101 and MAT 150 or equivalent.

Course is designed for students pursuing any program of study. A student taking this course will gain competency with f le management, word processing, spreadsheet, database management, and presenta t on graphics so f ware. In addi t on, the student will become familiar with general computer technology such as computer hardware, computer opera t ons, networks, the Internet and the World Wide Web. Prerequisite: math ACT score of at least 19 or MAT 096 (or higher).

This course presents the student with so f ware, hardware and administra t ve issues commonly encountered in suppor t ng end users. Topics covered: installa t on, con f gura t on, upgrading, security, training, l' Usec ading D p

An in-depth study of the latest version of the C# programming language. Emphasis is placed on advanced programming techniques and database concepts The course covers event driven programming and object-oriented paradigms. Topics include structured programming, class creat on, user interface development and database management. Prerequisite: CSC 232 with a grade of *C* or be t er or permission of instructor.

A f rst course in programming in Java with emphasis on object oriented programming techniques. Topics include applicat ons, applets, control structures, methods, arrays, object-based and object-oriented programming, strings, graphical user interfaces, except on handling, mul t threading, and mul t media. Two hours lecture and two hours laboratory per week. Prerequisite: CSC 145 or permission of instructor.

A f rst course in programming in C#, with emphasis on object-oriented programming techniques. Topics include applica t ons, control structures, methods, arrays, object-based and object-oriented programming, strings, graphical user interfaces, except on handling, mul t threading, and mul t media. Two hours lecture and two hours laboratory per week. Prerequisite: CSC 145 or permission of instructor.

Data structures and abstract data types (ADTs) for arrays, strings, lists, stacks, queues, trees, and graphs. These ADTs are presented in both sta t c and dynamic memory implementa t ons. The course also cover the design and implementa t on of recursive algorithms such as sor t ng and searching, hasing func t ons, priority queues, and heaps. Other topics (recursion, lists, events, inheritance, polymorphism) in object-oriented programming will be covered as t me permits. Three hours lecture and two hours laboratory per week. Prerequisite: CSC 145 with a grade of *C* or higher.

Course is a survey of several popular scrip t ng languages. Opera t ng system shell languages and Perl will be discussed. The emphasis will be on sŒ M ů ‚ N tng l be Ş M erw l' ' f s ă q
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Practical aspects of college student personnel work will be examined through the use of appropriate placements in working professional settings. A seminar will accompany these placements to provide a forum for a structured discussion and development of concepts observed while in the field placement settings.

Course serves as the introduction to the field of international education practice primarily at institutions of higher learning. The course offers the aspiring student affairs professional an overview of global issue and context involved in extending international education opportunity and knowledge as well as addressing the major instructional components of international education and campus internationalization. Prerequisite: permission of advisor/program director.

Course emphasizes study abroad from a administrative perspective and begins with broader and contextual issues around institutional internationalization. Major topical areas include the importance and relevance of study abroad in a core as well as co-curriculum; orientation and preparation of students, faculty, and staff to participate in study abroad programs; counseling, placing, and supporting interested students; identifying and developing appropriate new program options; and administering a study abroad office. Corequisite or prerequisite: CSP 630.

Course focuses on the management of international student and scholar presence on American campuses. Specific aspects addressed include international student enrollment, orientation, advisement, integration into campus community life, visiting scholar administration, and implications for institutional internationalization. Corequisite or prerequisite: CSP 630.

As the culmination of in the international education concentration, this experience is designed to apply course learnings in an actual higher education work setting. Required in a minimum of 200 assignment hours in a unity devoted to any one or combination of study abroad, international student and scholar support services, or international relations responsibilities at a college or university. The assignment includes close supervision by the professional directly responsible for this area of university service. Prerequisite: CSP 630 with a grade of *B* or better and either CSP 631 or 632 with a grade of *B* or better; simultaneous registration in CSP 633.

Course is designed to provide new and pre-service teachers with an introduction to the field of career and technical education. Included are topics related to motivation and learning theory, curriculum, school organizations, funding, laboratory management and historical, socio-cultural, psychological, and philosophical foundations of career and technical education. Prerequisite: admission to Teacher Education.

Course is designed to provide an overview of assessment and curricula unique and appropriate for the career and technical education classroom and laboratory. Prerequisite: admission to Teacher Education.

Course is designed to provide an overview of current trends and issues in planning and implementing instruction in the media rich career and technical education classroom and laboratory. The course includes exploration of such various teaching methods including lecture, discussion, group instruction, group projects, and instructional modules.

Course is designed to provide an opportunity for individual study, laboratory practice, and research in career and technical education. The student must justify need for such study and have the proposed problem approved before registering for the course. May be repeated for up to six hours of credit.

Course is designed to include supervised readings or independent investigative projects in the various aspects of administration, supervision, and coordination of career and technical education programs. May be repeated for up to six hours of credit. Prerequisite: permission of instructor.

This course is designed as an introduction to the Master's degree for the occupational based Career and Technical Education (CTE) te Ṛ b l Î ɣ nC - ar ʲ p M: ; sigee ŧ alte ¨Euc er ş ˢ degre ʞ at t Ą M technic

Course is designed to assist students in their transition to Murray State University. Content includes orientation to the specific area or major(s) and minor(s) within the academic program; university procedures, policies, and resources; strategies for personal and academic success, and extracurricular opportunities. Only one transitions course will count toward graduation. Graded pass/fail.

Fundamental economic principles applied to a wide range of real world problems, with the objective of developing an understanding of the market form of economic organization. Designed specifically for two purposes: (1) to meet the needs of the students who are able to take only one economics course in their curriculum, and (2) to satisfy the University Studies social science requirement. Does not apply toward business or economics major, minor, or area requirement.

The course prepares the student to manage his or her own personal financial affairs in a competent manner as well as providing a foundation for later study and work in the financial planning field. Designed to meet the needs of both business and non-business majors. Cannot receive credit for both ECO 190 and FIN 230.

This course provides an introduction to the economic analysis of governments and politics. Topics covered include the role of special interest groups in American government, the growth of the government sector in the American economy, and the fundamental differences between private and public sector decision-making. The course is designed to introduce students to the role that incentives play in understanding government

An introduction to the analysis of legal issues and legal reasoning. Case studies include property, contracts, torts, product liability, criminal behavior and the value of life. Prerequisites: ECO 230 and 231 or permission of instructor.

A study of the principles, practices, and institutions of international trade and finance. Prerequisite: ECO 231.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

An applica t on of economic theory to business problems. Prerequisites: ECO 230 and 231 or ECO 490; MAT 220; CIS 343 or 490, or permission of instructor.

An advanced analysis of the major theories of na t onal income, price level, interest rate, and employment determina t on; in par t cular the short-run impact of policy choices and shocks within the major models. Prerequisite: ECO 330 or permission of instructor.

An advanced treatment of price theory, emphasizing the use of di f eren t al calculus and linear algebra to formally model the decision-making of individual economic agents. Prerequisite: ECO 331 or permission of instructor.

The evolu t on of money, monetary theory, monetary policy and the closely related topic of f scal policy. Prerequisite: ECO 330 or permission of instructor.

An appraisal of the federal government's e f orts to promote full employment and price stability. Prerequisite: ECO 330 or permission of instructor.

This course investigates electric power systems including balanced power systems at steady-state conditions. Problem

A study of the structure of mathematics, materials, and methods which build insight and skill in the area of teaching mathematics to elementary students. Field experiences required. Prerequisites: EDU 303, MAT 115 and 215.

A critical study of the quality literature in a variety of genres for early and developing readers in grades P-5. This course is designed to help further teachers' knowledge of the importance of books and reading in the life of the young child and to develop a knowledge and appreciation of the wide variety and scope of recreational and information materials available for primary through grade 5. Field experiences required. Prerequisite: EDU 303.

An exploration of the content, methods, and materials for teaching the language arts at the elementary level. Emphasis is on integrating the language arts across the curriculum. Field experiences required. Corequisite: REA 306. Prerequisite: EDU 303.

This course will cover the techniques of utilizing the programmable logic controllers (PLCs) in the industrial environment. Hardware aspects, programming techniques, and interfacing situations will be covered. Three hours lecture and two hours lab. Prerequisites: EMT 201, TSM 210, and 241. (Spring)

A study of electrical measurement and electromechanical control and includes signal conditioning, sensors, interfacing to final outputs, controller principles and control loop characteristics. Three hours lecture and two hours lab. Prerequisites: EMT 310 and MAT 230 or equivalent. (Fall)

A in-depth study of industrial and commercial power distribution including three-phase systems, transformers, cable and conduit, grounding, system protection, and safety. Prerequisite: TSM 110.

A study of electric motors and their controls including the operating characteristics and applications of various dc and ac motors, electromechanical controls and electronic drives. Three hours lecture and two hours lab. Prerequisite: ENT 351 and TSM 210. (Spring)

A study of motion of particles and rigid bodies and the effects of forces on bodies with acceleration. Topics included are kinematics of particles and rigid bodies, work and energy, impulse and momentum. Corequisite: MAT 308 or 330. Prerequisites: EMT 202, 261, 262; ENT 287; TSM 210. (Fall)

This course is a capstone integration course design to apply manufacturing planning systems and manufacturing equipment control systems. This course will focus on the development and integration of local area networks and industrial control processes. The topics included in this course are: local area networks, industrial networks, programmable logic controllers, man machine interfaces, motor control device networks and supervisory control and data acquisition (SCADA) systems. Three hours lecture and two hours lab. Prerequisites: EMT 310 and TSM 241. (Fall)

A study of motion control as applied to current production manufacturing and process systems. This course includes an introduction to the mathematics, electronics, and control theory required to understand these system. Non-servo hydraulic and pneumatic systems will be presented; however, the emphasis of the course is on closed-loop servo-mechanisms. The course is laboratory oriented with theoretical and design content presented at the appropriate time. Prerequisites: EMT 261, 262, 312; and ENT 365. (Spring)

Design of machines using bearings, belts, clutches, gears, springs and screws. Develops the application of the theory of working stresses, power transmission and lubrication to the analysis and design of machine elements. Prerequisites: CET 298, ENT 365, and ITD 102. (Spring)

Course is designed to prepare the secondary school teacher for teaching reading and writing in the secondary English/Language Arts classroom. Prerequisites: ENG 329. (Spring)

A survey of non-dramatic British literature from 1501-1600 with attention to historical and critical contexts.

A consideration of the writing process and its implications for teaching writing to students at all levels.

An introduction to the traditions, forms, and techniques of drama in English and/or English translation, including the study of genres, stagecraft, and historical development. Prerequisite: ENG 221 or permission of instructor.

An introduction to the traditions, forms, and techniques of fiction in English and/or English translation, including the study of genres, stagecraft, and historical development. Prerequisite: ENG 221 or permission of instructor.

This course will examine the historical development of comedy and/or satire as a literary genre and as a cultural manifestation (e.g., plays, novels, essays, movies, comedians, etc.). It may also focus on theories of comedy and satire. Prerequisite: ENG 321 or permission of instructor. May be taken concurrently by English area or major students.

An historical survey of literary criticism, including some collateral reading of literature. Prerequisite: ENG 321 or permission of instructor. May be taken concurrently by English area or major students.

A meaningful, planned, and evaluated editorial experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488 courses. Graded pass/fail. Prerequisite: permission of chair.

Directed independent study program, mutually developed by student and instructor, leading to one or more papers or projects. May be repeated for a maximum of eight credit hours.

An advanced study of the issues pertinent to the discipline of literature, including career and graduate studies

A critical and historical study of selected European and American prose fiction from 1900 to the present.

An intensive study of recent critical practices and theoretical approaches to understanding literature.

Supervised independent work in creative writing. May be repeated for credit. Prerequisite: permission of instructor.

An overview of the basic concepts, scope, and methodology of the science of language in its historical and descriptive aspects, including topics and issues in current linguistic studies.

Supervised independent work in literature, language or writing. Prerequisite: permission of department chair. May be repeated for credit.

A major literary figure (or two related figures) will be studied in depth. This course may be repeated once for credit.

An intensive examination of issues in the study and/or teaching of English. May be repeated for credit.

Topics in literature written by selected women writers. May be repeated once for credit.

A seminar focusing on important issues in critical theory.

Study of selected themes in works of literature from the non-Western world.

A study of the basic concepts, scope and methodology of the science of language in its historical and descriptive aspects. Not open to the student who has credit for ENG 310.

Study of literary works by gay and lesbian authors, works about gay and lesbian experiences, and gay and lesbian literary traditions.

A study of American poetry from its beginnings to the present—or on a par t cular period within its history—with a t en t on to historical and cri t cal contexts.

A study of the American novel from its beginnings to the present—or on a par t cular period within its history—with a t en-

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Applications of financial models on the microcomputer, leading to the solution of financial problems. Emphasis is placed on building and using models developed (1) in electronic worksheets, and (2) with database software. Prerequisite: FIN 330.

A study of the contemporary corporation in a multinational setting. An in-depth analysis of risks and opportunities available for the global corporation. Prerequisite: FIN 330.

This is the finance capstone course that also serves as a designated communications course. Finance 480 uses case studies to give students an opportunity to incorporate various financial concepts and techniques in financial decision making. Students are required to work in teams to prepare and present case reports to the class. Prerequisites: FIN 332 and senior standing.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Prerequisite: permission of chair.

Open to junior and senior finance majors. These students, upon approval of the finance faculty, are placed with cooperating firms to receive on-the-job training in finance. Work experience supervised by faculty; written reports are required. Graded pass/fail. Prerequisite: permission of department chair.

A study in the understanding of current derivative securities and the markets in which they are traded; the design and testing of innovative derivative securities. Prerequisites: FIN 330 or equivalent and MAT 220 or equivalent.

Applies theories of managerial and international finance to the problems of international financial management. Topics include investment analysis, financing decisions, identifying, measuring and managing foreign exchange and interest rate risk, financing of trade, and financial control of international operations. Prerequisite: FIN 330.

A study of French cinema and cinema in French beyond French borders, examining signi f cant directors and f lm movements. This class includes a two hour per week f lm screening in addi t on to class mee t ngs. This course is conducted in French. Prerequisite FRE 301 or 331.

A survey of the contribu t ons of France to world culture including the historical development of France from prehistoric t mes through the French Revolu t on. Classes conducted in French with extensive use of visual aids. Prerequisite: FRE 301 or 331 or permission of instructor.

A survey of a t t udes, achievements, and behavioral characteris t cs of the French people from 1800 to the present. Classes conducted in French with extensive use of audio and visual aids. Prerequisite: FRE 301 or consent of the instructor.

Will be taught on summer abroad programs in French-speaking countries only. It is an introductory course in French and/or Francophone literature taught in French. Authen t c texts might include poetry, short story, drama or excerpt l' e324and/or 324 exts inف ´ =exma c

Introduct on to linguist c terminology and principles of phonology with intensive individual diagnosis and pract ce of the French phonological system. Includes study and pract ce of the Internat onal Phonet c Alphabet. Prerequisites: junior standing or above, FRE 301 or 331 or permission of instructor.

Independent work in areas of language, culture or literature, designed to meet needs and interests of individual students. Prerequisites: junior standing or above, FRE 301 or 331 or permission of instructor.

Prerequisites: junior standing or above, FRE 301 or 331 or permission of instructor.

Approved programs of travel and study in French-speaking countries. Repeatable up to nine hours. Prerequisites: junior standing or above, FRE 301 or 331 or permission of instructor.

Course content at the discret on of the instructor. May be repeated for up to six hours of credit. Prerequisite: FRE 301 or 331 or permission of instructor.

Independent work in areas of language, culture or literature, designed to meet needs and interests of individual students. May be repeated for up to six hours of credit. Prerequisite: FRE 301 or 331 or permission of instructor.

Prerequisite: FRE 301 or 331 or permission of instructor.

Approved programs of travel and study in French-speaking countries. Repeatable up to nine hours. Prerequisite: FRE 301 or 331 or permission of instructor.

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Foundaton course for graduate work in gender studies. Advanced survey of theories of gender and sexuality. Introduc ton to qualita tve and quan ttat ve research methods in gender studies. Field work may be required.

Survey of issues, theories, and interdisciplinary approaches in lesbian, gay, bisexual, and transgender studies.

This course considers gender and sexuality in law and society, the role of law in subordina tng women and sexual minori tes, the use of law to address gender and sexual inequi tes, and the applica ton of the gender studies methods to legal issues. The focus is on the broader rela tonship between law and society; no prior technical legal knowledge is required or assumed. Prerequisite: GDS 600 or permission of the instructor.

A seminar focusing on a topic, theme, or body of work in gender studies. Prerequisite: MCG 600 or permission of the instructor.

Capstone course consis tng of advanced, original, independent research into a par tcular issue in gender studies resul tng in poten tally publishable essay. Prerequisites: GDS 600 and nine addi tonal hours of coursework toward the Cer t fcate in Gender Studies, or permission of instructor.

Basic German in which students learn to describe themselves to someone from another culture; to express preferences, abili tes, needs, and obliga tons; to ask for informa ton; to describe people, places, and things in their world; and to report their typical ac tvi tes to a German speaker.

Expanding upon skills built in GER 101, students move toward increasing linguis tc and social awareness of German-speaking cultures. Students learn to use past tenses to talk about typical ac tvi tes or to tell a story; to expand their basic vocabulary and ability to communicate in simple German; and to demonstrate basic understanding of aspects of German culture that may di fer from their own. Prerequisite: GER 101 or equivalent.

A survey of the contemporary culture of Germany, Austria and Switzerland with emphasis on the values, behavioral characteris tcs, social and poli tcal systems and achievements of the German-speaking people. Conducted in English. No prerequisite.

A conversa ton-oriented introduc ton to pronuncia ton, essen tal structures, and vocabulary. Designed to enable students to communicate in simple German in everyday situa tons in German-speaking countries. Pronuncia ton, listening comprehension, speaking and simple reading and wri tng of material related to conversa tonal situa tons are included. No con tnua ton o fered. Not applicable toward German major or minor. Only taught abroad. No prerequisite.

Students strengthen their basic language skills while con tnuing to broaden cultural awareness of German-speaking socie tes. Students relate experiences, produce brief reports on course topics, and express opinions concerning a variety of themes. Students learn to communicate on a more complex level in German. Taught in German. Prerequisite: GER 102 or equivalent.

Students advance their speaking, wri tng, reading, and listening language skills in this interac tve course focused on the prac tcal applica ton of the language in contemporary German-speaking countries. Ac tvi tes include Ĥ MPe ɿ s on xpr

A survey of the contribution of German-speaking people to world culture in art, music, science, education, philosophy and religion. Classes conducted in German. Prerequisite: GER 301 or 331 or permission of instructor.

A survey of the present-day culture of the German-speaking countries, including Austria, the Federal Republic of Germany, and Switzerland. Course includes the study of German dialects, geography, social and political systems and religious orientation. Classes conducted in German. Prerequisite: GER 301 or 331 or permission of instructor.

Will be taught in study abroad programs in German-speaking countries. It is an introductory course in German

An introduction to the study of the marine and freshwater environments of the earth. Study of the oceans as the largest component of the earth's hydrosphere will emphasize geological forces which are shaping the ocean floor, ocean currents and tides, the origin of ocean salt, and life in the ocean. Study of freshwater components of the earth's hydrosphere will emphasize connections with the ocean and the special role of each component in the earth's hydrologic cycle. Prerequisite: one college-level physical or biological science course, or permission of instructor.

Course will emphasize the art, science, and history of the mapping process. Elements of map design and construction will be explored, including coordinate systems, map projections, design concerns, and information management necessary for map creation. Fundamental map skills will be developed, common map applications covered, and future mapping trends explored. Lecture topics will be augmented by hands-on exercises using current GIS software.

Course explores the most distinctive and intriguing features of America's National Parks. Emphasis is placed on the geology, ecology, and archaeology of each park, with emphasis placed on how each of these components influences the other in a dynamic feedback system. One Saturday field trip will be required. Prerequisite: GSC 102 or permission of instructor. (Same as ARC 306.)

An introduction to common rock and mineral resources, including ore deposits, fossil fuels, and minerals; igneous rocks; metamorphic rocks; and sedimentary rocks. Emph Ů in ŕ c a d Ţ fossil . ˩ M ess Ū a rs;s Ƶ rntary ʁ ' r Ⅱ an

Survey and discussion of the scient fc literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that a fect terrestrial and aquat c ecosystems. The course will focus on interdisciplinary themes that incorporate new research results form the felds of biology, chemistry, and geosciences. Prerequisite: junior or higher standing in biology, chemistry or geosciences. (Same as BIO/CHE 565.)

Introduct on to the use of computers in geoscient fc problem-solving and data processing. Students will ut lize exist ng programs and will develop original rou t nes. Prerequisites: GSC 521 or GSC 522 and CSC 101.

The study of vertebrate fossils in both feld and lab, including collect on, processing and ident fcat on. Field work may include trips throughout the con t nental United States and occasionally overseas. (Usually taught during summer.) Prerequisites: comple t on of two semesters of undergraduate laboratory science and upper-class.

Course will introduce students to the basic concepts of climate and terrestrial carbon cycle. The course will examine terrestrial ecosystem processes that in fuence the global carbon cycle and the climate. The focus of this course is in the modeling of carbon, water, and energy fuxes between the terrestrial ecosystem and the atmosphere. Methods for analyzing and modeling these processes at di ferent spat al scales will be presented. Students will par t cipate in at least one feld trip to Hancock Biological Stat on. Prerequisite: GSC 301.

Course will introduce students to the use of remote sensing imagery to monitor vegetat on func t ons and structure. The course will examine the techniques used to extract remote sensing features related to vegetat on func t ons and structure. The focus of this course is in the use of remote sensing data to model and monitor vegetat on carbon and water fuxes at di ferent spat al scales. The aim of this course is to provide students with skills in applied remote sensing, par t cularly for applicat on related to terrestrial ecosystem. Prerequisite: GSC 512.

This course is designed for students who have an ap t tude for research in the area of geosciences. Prerequisite: permission of instructor. (May be repeated once.)

This course is designed for students who have an ap t tude for research in the area of geosciences. Prerequisite: permission of instructor. (May be repeated once.)

This course is designed for students who have an ap t tude for research in the area of geosciences. Prerequisite: permission of instructor. (May be repeated once.)

Course will familiarize incoming graduate students with various aspects of graduate educa t on at the universit ð ' f

A course to provide opportuni t es for experienced teachers and teacher trainees to develop 6 2 o_

A course developed especially for Student Support Services students as a prerequisite to GUI 100. The course is designed to enhance students' abilities to examine and identify their values. Decision-making skills which are essential to value clarification, occupation, and course work choices are confirmed through role playing and class discussion. Computer software will be used for the purpose of career investigation. Prerequisite: permission of instructor. Credit earned in this course may not be counted toward graduation requirements.

A study of decision-making as it relates to the student's life experiences. In-class activities teach the concepts of decision-making, time management, career planning, assertiveness and communication skills. Credit for general elective.

A survey course that examines the European invasion during the contact era from the Atlan tc Tidewater to the Mississippi River, the conquest and consolida t on of the pre-colonial America to na t onhood, and ends with Indian removal in 1830. Emphasis is place upon the fron t er experience, cultural, social, and ethnic issues, popula t on movements, the expansion of American ideals and ins t tu t ons, and the history of American Indians.

A history of the Indians of North America from the earliest t mes un t l the late nineteenth century. This course focuses on the cultures, customs and tradi t ons of the various Indian civiliz Indo ≇ coew η M

This course surveys the history of women in the United States from the colonial period through Reconstruction.

This course will examine the position and contributions of women in American society from 1877 to the present from the perspective of the major trends in American history. It will focus on the history of women in each period, while emphasizing several particular themes and trends.

The course will examine the origins of the course of the war that began in Manchuria in 1931, expanded to China south of the Great Wall in July of 1937, from there to Pearl Harbor, Southeast and South Asia and the Pacific Islands by late 1941, and ended at Hiroshima and Nagasaki.

An advanced survey of the history, politics, and culture of the Third Reich in Germany (1933-1945). This course will cover the rise, fall, and aftermath of the Nazi regime with a particular emphasis on the Holocaust and the Second World War. Prerequisites: HIS 300 or permission of instructor.

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A systematic reading of major works on selected topics in United States history from colonial times to the present. May be taken more than once for credit; consult the department chair.

An analysis of U.S. relations with other nations since 1898, placing special emphasis on the interplay of ideals and self-interest in foreign relations.

A systematic, exploration of the social history of the United States from the end of the Civil War to the present.

A systematic exploration of the United States from the first European settlement to the beginning of the American Revolution.

A critical examination of a major problem in United States history to 1865 using primary sources. Topics vary and the course may be taken more than once for credit; consult the department chair.

A systematic exploration of the events that led to the independence of the United States and the establishment of the Constitution.

A critical examination of a major problem in United States history since 1865, using primary sources. Topics vary and the course may be taken more than once for credit; consult the department chair.

This offering covers the period from 1815 to the presidential election of 1877, with emphasis on political, military, social, and economic conditions as they related to the sectional controversy raging during this part of the nineteenth century.

An advanced study of the transformation of the United States from an agricultural to a modern industrial nation. Topics included within this broad theme are the rise of big business and labor unions, urbanization, immigration, the closing of the frontier, reform movements, the struggles of blacks and women for equal rights, national politics, and cultural changes.

A study of the Great Depression, the New Deal, World War II, and the subsequent forces that have shaped contemporary American

Basic statistical techniques and paper/pencil testing methodologies applicable to health and physical education plus other physical and mental testing techniques commonly employed in these fields. Various physical and skill tests will be covered. Field experiences required. Prerequisite: HPE 175.

This course is designed to address comprehensive school health education. Topics covered include the health status of children, adolescents and young adults; Healthy People 2010; school health services; school health education; program goals and objectives; and instructional strategies. Content covered in the school health education program: mental/emotional health; life skills; family and relationship skills; human sexuality; growth and development; nutrition; personal fitness; substance use and abuse; diseases and disorders; consumer health; safety and injury

A survey of architecture and interiors from ancient t mes to 1800. Emphasis is on furnishings, interior architectural details, accessories, materials, signi f cant designers and architects of the periods, and current sources of reproduc t ons of furniture and accessories.

Study of and prac t cal experience in space planning of residen t al interiors. Emphasis is on func t onal, aesthe t c and economic considera t ons, materials and codes; perspec t ves and color board prepara t on techniques. Graphic and oral presenta t ons of interior design projects. Laboratory, four hours. Prerequisites: ITD 104. and 253.

Hands-on experience in implemen t ng plans for diverse background treatments for residen t al and commercial interiors using a variety of materials in a laboratory se t ng. Design and produce accessory and display items; develop es t mates; prac t ce installa t on techniques. Prerequisites: ITD 221, 251, 253, and 352.

Prepara t on of por t olio plus self-ini t ated, large-scale, complex interior design project. Emphasis is on synthesizing all learning to date and cri t quing work. Presenta t on of complete project and por t olio. Lecture and tutorial. Prerequisite: ITD 353.

A study of basics of computer-aided manufacturing; computer numerical control (CNC), computer aided design and machining (CAD/CAM) and robo t cs applica t ons in manufacturing. Laboratory work in manual and automa t c programming and setup of CNC machines and robots. Prerequisites: ITD 101 and 130; junior standing.

An intermediate course focused on the design of small buildings with emphasis on schema t c and presenta t on drawings and 3D model building. Students will develop intermediate level design documenta t on to include construc t on details, nota t ons, and applica t ons. Analysis and synthesis of architectural form generated by program requirements, physical systems, spa t al organiza t on, available technologies, and review of historic precedents and aesthe t cs will also be explored. Lecture and laboratory-six contact hours. Prerequisites: ITD 301. (Fall)

This course u t lizes parametric, feature-based, solid modeling so f ware and techniques applied to problem solving and represenla t on of product and tooling components and assemblies. Emphasis is placed on dimensioning, geometric dimensioning and tolerancing, 3-D modeling and design of mechanical devices, and principles of tooling design. Lecture and laboratory-six contact hours. Prerequisites: ITD 304, 330, and 333. (Fall)

Maintenance and adjustment of industrial machinery and equipment such as (but not limited to) metalworking, woodworking and dra f ing equipment. Theory and ac t vi t es in the design, materials, and equipment of durable goods manufacturing industries. Emphasis on modern produc t on materials, robo t cs, CNC, and produc t on design systems. Prerequisites: ITD 130 and 330.

A study of programming machine tools through the applica t on of computer aided manufacturing

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ITD 431 u ¡ M u Œa Ł o

Introduction to roots, exponents, and polynomials; linear and quadratic equations; factoring; graphing; systems of equations and inequalities with applications using these concepts. A developmental and refresher course required for students with math ACT scores of 16-18. Advanced placement into a higher-level math course is possible through assessment exams such as COMPASS or KYOTE. Credit earned in this course cannot be counted toward graduation requirements and cannot be used to fulfill University Studies requirements. Students with credit in a higher-level math course may not schedule this course without instructor permission. Prerequisite: ACT math score of 16-18 or MAT 095.

Algebraic expressions, exponents, linear and quadratic equations, graphing, systems of equations, inequalities, and mathematical modeling. Students who have received a grade of *C* or better in any mathematics course numbered MAT 130 or above can not enroll in this course without written permission of the departmental chair. Credit earned in this course cannot be counted toward graduation requirements and cannot be used to fulfill University Studies requirements. Required for students with a 19 ACT and degree requirements which include MAT 130, 135, 140, 145, or 150. Prerequisite: ACT math standard score of at least 19 or MAT 096.

Course is designed to assist students in their transition to Murray State University. Content includes orientation to the specific area or major(s) and minor(s) within the academic program; university procedures, policies, and resources; strategies for personal and academic success, and extracurricular opportunities. Only one transitions course will count toward graduation. Required for all entering freshmen. Graded pass/fail. (Fall)

Development of the real number system with arithmetic and basic ideas of algebra. A course specifically designed for the needs of future elementary and middle school teachers. Cannot be used for University Studies requirements. Prerequisite: Math ACT score of at least 20 or KYOTE score of at least 22 or a COMPASS algebra score of at least 41 or MAT 097.

Provides students with problem-solving skills and literacy related to the mathematics which is commonly encountered in our society. Topics can include descriptive statistics, personal finance, voting methods, elementary probability, and graph theory. This course is especially appropriate for students whose degree programs do not otherwise require a course in mathematics. It is not an adequate preparation for any other mathematics course. Prerequisite: ACT math standard score of at least 19 or MAT 096.

A study of algebra with motivating examples and applications from various fields of business. Topics include linear, quadratic, rational, exponential and logarithmic equations and functions, systems of linear equations and the mathematics of finance. A student may not receive credit for MAT 120 and MAT 130 or 140 or 150. Prerequisites: ACT Math standard score of at least 21 or MAT 097.

Topics from algebra and trigonometry for the technology student. Restriction: A student may not receive credit for MAT 130 and 140 or 145 or 150. Prerequisite: ACT math standard score of at least 21 or MAT 097.

Course develops and extends the student's basic algebra concepts and problem-solving skills in the context of functions, models, and applications. Topics include exponents and radicals, graphing, setting up and solving equations in linear, quadratic, and other forms, systems of equations, and operations on functions. Properties and applications of linear, quadratic, polynomial, rational, exponential, and logarithmic functions are studied. Prerequisite: ACT math standard score of at least 21 or MAT 097. A student may not receive credit for MAT 140 and 130 or 150. (MAT 140 in combination with MAT 145 will substitute for MAT 150.)

Course is a study of plane trigonometry. Topics include angles, right triangle trigonometry, trigonometric functions and their graphs, identities, solving trigonometric equations, and applications of trigonometry. Prerequisite: ACT math standard score of at least 21 or MAT 097. A student may not receive credit for MAT 145 and MAT 130 or 150. (MAT 145 in combination with MAT 140 will substitute for MAT 150.)

Course is an intensive study of college algebra and trigonometry. A combination of MAT 140 and MAT 145, it is a faster-paced course for students with some familiarity with the subjects. MAT 150 may be used as a "refresher" course to help prepare students for MAT 250. Prerequisite: ACT math standard score of at least 23. Restriction: A student who receives credit for MAT 150 may not receive credit for MAT 130, 140 or 145. (Credit for the combination of MAT 140 and MAT 145 will substitute for MAT 150.)

Geometry, measurements, probability and statistics for elementary and middle school teachers. Cannot be used for University Studies requirements. Prerequisite: Math ACT score of at least 20 or KYOTE score of at least 22 or a COMPASS algebra score of at least 41 or MAT 097.

An introduction to calculus and its applications for students in various fields of business. Primary emphasis is on differential calculus. Prerequisite: MAT 120 or 140 or math ACT score of at least 23.

Analytic geometry, differential and integral calculus with applications from technical fields. Prerequisite: MAT 130 or ACT math standard score of at least 24.

Course designed to improve the students understanding of the nature and methods of mathematical proof by means of practice and participation. The content will include mathematical logic, set theory, relations and functions, cardinality, axiomatic structures, techniques of proof, and extensive practice in proof and problem solving. Credit cannot be received for both MAT 312 and 399. The department recommends a student take this course in his/her sophomore year in the program. Prerequisite: MAT 308 or permission of instructor.

Selected topics and applicatons from combinatorics and discrete mathematcs, which can include: enumeraton, generatng functons, recurrence relatons, partally ordered sets, Boolean algebras, block designs, coding theory, and topics in graph theory, including trees, networks, optmizaton, and scheduling. Prerequisites: MAT 308 and either MAT 312 or MAT 335.

An in-depth study of groups. Topics will include permutaton groups, cyclic groups, cosets and factor groups, subgroups and normal groups, and the homomorphism theorems. Some introductory discussions of rings and felds will be included as well. Prerequisites: MAT 308 and 312.

An in-depth study of rings and felds. Topics will include the Isomorphism Theorems, ideals, polynomial rings, integral domains, felds, and feld extensions. Prerequisite: MAT 513, 613, or permission of instructor.

Divisibility, the Euclidean algorithm, mathematcal inducton, prime and composite numbers, Diophantne equaton, Pythagorean triplets, Fermat's Theorem, congruencies, quadratc residues, and contnued fractons. Prerequisite: MAT 312 or permission of instructor.

Set theory, topology of the real line, topological spaces, and metric spaces. Prerequisites: MAT 309 and 312.

Study of postulate systems for geometry, critcal examinaton of Euclid's Elements, and introducton to non-Euclidean geometry. Prerequisite: MAT 309 or permission of instructor.

Complex numbers, analytc functons, elementary functons, integraton, Cauchy theorem, Taylor and Laurent expansions, and applicatons. Prerequisite: MAT 309.

Analytc and computatonal techniques for linear frst and second order partal diferental equatons, inital, and boundary value problems. Classifcaton, Fourier series, separaton of variables, fnite difference and/or fnite element methods. Prerequisites: MAT 309, MAT 335, and MAT 338 or permission of instructor.

A rigorous development of one variable calculus including limits, contnuity, diferentaton, integraton and sequences of functons. Prerequisites: MAT 309 and 312.

A contnuaton of MAT 625 and functons of several variables. Prerequisite: MAT 525 or 625.

In this introductory course, we investgate mathematcal models of certain confict and cooperaton situatons (games), paying atenton to applicatons in bioof ş N f Ξ t ƀ Ŏ 8 ory ę t ƀ Ņ y t: eq 4 سج

Explora ons of mathema cal topics from the viewpoint of future/current secondary and community college teachers of mathema cs. Can be taken without MAT 650. Prerequisite: MAT 312 or permission of instructor.

Course develops knowledge of the fundamental probability tools for quan ta vely assessing risk. The applica on of these tools to problems encountered in actuarial science is emphasized. Does not count towards an M.A. in Mathema cs degree. Prerequisite: STA 540 or 640 and MAT 309 or consent of instructor.

Theory and applica on of linear programming and the role it plays in opera ons research. Prerequisite: MAT 335.

Independent work on selected topics. May be repeated for credit. Prerequisite: permission of instructor.

An in-depth study of selected topics introduced in MAT 616. Prerequisite: MAT 516 or 616.

An in-depth study of group theory. Topics will include Lagrange's Theorem, Cauchy's Theorem, the Sylow Theorems, and factor groups. Prerequisite: MAT 514 or 614.

An in-depth study of selected topics introduced in MAT 614 and 721. Prerequisite: MAT 721.

An in-depth study of selected topics introduced in MAT 623. Prerequisite: MAT 523 or 623.

Riemann integrals, con nuous func ons, func ons of bounded varia on, and Riemann-S eltjes integrals. Prerequisite: MAT 526 or 626 or consent of instructor.

Lebesque measure and integra on theory and related topics. Prerequisite: MAT 725 or consent of instructor.

Func onal analysis, including Classical Banach spaces and Lp spaces. Prerequisite: MAT 726.

Existence and uniqueness of fi rst-order ini al value problems. Linear systems of di eren al equa ons. Boundary value problems. Stability of dynamical systems. Lyapunov's method. Periodicity of planar systems. Prerequisite: MAT 625 and MAT 638.

Considera on of topics in numerical linear algebra: the Singular Value Decomposi on, QR Factoriza on, Condi oning and Stability, Advanced Itera ve Methods. Prerequisite: MAT 642.

Independent work on selected topics. May be repeated for credit. Prerequisite: permission of instructor.

Independent work on selected topics. May be repeated for credit. Prerequisite: permission of instructor.

Course is designed to assist students in their transi on to Murray State University. Content includes orienta on to the specifi c area or major(s) and minor(s) within the academic program; university procedures, policies, and resources; strategies for personal and academic success, and extracurricular opportuni es. Only one transi ons course will count toward gradua on. Graded pass/fail.

The fundamental concepts, rela onships and principles of managing organized ac vi es are studied. Special emphasis is given to human behavior in organized systems, with a en on to the diverse workforce, interpersonal rela ons, group processes, and the philosophy for managing human resources e fec vely. Prerequisite: condi onal or full admission to upper-level business courses or junior standing.

Stresses basic principles of oral repor ng with emphasis upon informa onal speeches and special techniques of management brie fngs. Provides prac ce in prepara on and use of visual aids and the conduct of brie fngs. Prerequisites: junior standing; MGT 350.

This course is devoted to the study of the entrepreneurial process including iden fying opportuni- es, crea ng value, developing concepts and plans, a trac ng resources, building an organiza on, and managing growth. Prerequisites: junior standing; ACC 200 and MGT 350.

Course will prepare students for managing sports-related businesses from a strategic perspec ves. The course provides the foundaton for a varie

Course explores the process of bringing a new product or service to market. The course covers the entire process from the innovation front-end to market introduction. While the primary focus will be medium-sized and larger companies, consideration will be given to small and start-up companies. Prerequisite: MGT 350 or permission of instructor.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Prerequisite: permission of chair.

Students will develop the tools necessary to provide a meaningful consulting consulting C

This is an academically challenging course where the students will study, practce, develop, and apply critcal thinking skills pertaining to Army leadership, o f cer skills, Army values and ethics, personal development, and small unit tactcs at platoon level. This course includes a mid-term exam and a Capstone Exercise in place of the fnal exam. For the Capstone Exercise, they will be required to complete an Oral Practcum which will be evaluated on the student's kcŔ actcuŗ c OrCļ us e η o Ł ċ skřr alT C Ł Ł 8 mt Ţ

The marching band prepares field performances for all home football games as well as selected away games and exhibitions. Credit will be given for as many semesters as taken. Membership open.

Designed to give brass and percussion players experience in the study and performance of large brass ensemble literature. Credit will be given for as many semesters as taken. Membership by audition.

The wind ensemble develops an understanding of representative wind band literature through study and performance. Credit will be given for as many semesters as taken. Membership by audition.

The jazz ensemble develops an understanding of representative jazz styles and skills through study and performance. Credit will be given for as many semesters as taken. Membership by audition.

Concentration on development of improvisatory techniques through performance and listening skills. Credit will be given for as many semesters as taken.

The symphonic band develops an understanding of representative concert band literature through study and performance. Credit will be given for as many semesters as taken. Membership open.

The Concert Band develops an understanding of musical styles and skills through study and performance. Credit will be given for as many semesters as taken. Prerequisite: Concert band skills on a wind or percussion instrument.

University Chorale is dedicated to the study and performance of a wide vak À M hora Ŗ literature hro all Mma l periods and Őnret.A ő Q veloume ư t of ba ŭ ic musical skillsAand prope Membership is open.

style ŭ . Credit = _ 2 ş or ş ¯ ş y semesters as taken. Membership is y audi

Methods, materials, organizat on, administrat on and pedagogy related to the teaching of instrumental music in the secondary schools. Students must be of junior standing and comple t on of instrument techniques courses is recommended. Vocal Pro f ciency must be successfully completed. Prerequisites: MUS 123 and MUS 303.

This course emphasizes a study of the concepts and selected applica t ons of computer music in a digital music studio. Course content includes computer techniques, music sequencing, sound design, sound sampling, and the use of MIDI. Credit will be given for as many semesters as taken. Prerequisites: MUS 170 and 171.

One 25-minute or one 50-minute individual instruc t on period per week. Credit will be given for as many semesters as taken.

One 25-minute or one 50-minute individual instruc t on period per week. Credit will be given for as many semesters as taken.

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One 25-minute or one 50-minute individual instruc t on period per week. Credit will be given for as many semesters as taken.

One 25-minute or one 50-minute individual instruc t on period per week. Par t cipa t on in weekly vocal studio classes may be required. Credit will be given for as many semesters as taken.

This course is designed to acquaint the vocal music educa t on major with the structure, func t on, and development of the vocal mechanism. Students will learn how to protect and develop the vocal instrument in group instruc t onal se t ngs. Topics include the physiology of the singing voice, basics of singing, characteris t cs of voices at various ages, teaching singing in the music classroom and in the choral rehearsal, choosing appropŮselop ſ ropŮ ˢ clstr t cs of t opŮ ş sal, œpŮse¾ Mde Şigne ő l t

Small ensembles concentra t ng on chamber music literature. Emphasis will be placed upon developing chamber ensemble skills. Credit will be given for as many semesters as taken.

The ensemble will study and perform symphonic literature from a variety of style periods. Credit will be given for as many semesters as taken. Membership by audi t on.

A study of methods and materials available for teaching purposes as well as appropriate repertoire and pedagogical techniques available for various levels of learning.

Bachelor of Music in Performance degree candidates of junior standing enroll in this course the semester of their junior recital.

One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken.

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One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken.

One 25-minute or one 50-minute individual instruction period per week. Participation in weekly vocal studio classes may be required. Credit will be given for as many semesters as taken.

An in-depth study of instrumental conducting techniques, with emphasis on practical conducting experiences using instrumental ensembles. Attention will be given to the selection, preparation and conducting of literature appropriate to various public school ensemble levels. Prerequisites: MUS 273, 274, 323.

An in-depth study of choral conducting techniques, with emphasis on practical conducting experiences using choral ensembles. Attention will be given to the selection, preparation and conducting of literature appropriate to various public school ensemble levels. Prerequisites: MUS 273, 274, 323.

An in-depth exploration of all the instruments of the orchestra and band as well as the study of how to effectively write for each, alone and in combination. This course focuses on detailed score study, intense listening and evaluation, composing effective arrangements, and professional-level score preparation. The course will meet for two hours of lecture per week as well as one orchestra or band reading session (to be arranged). Prerequisites: Status as a music major and a grade of *C* or better in MUS 273 and MUS 327.

A study of selected musical topics: composers, genres, etc. The course will allow students to study topics in a concentrated, in-depth manner. Specific topics will vary. Credit will be given for as many semesters as taken.

A study of selected musical topics: composers, genres, etc. The course will allow students to study topics in a concentrated, in-depth manner. Specific topics will vary. Credit will be given for as many semesters as taken.

Course will build on the core industry knowledge gained in MUS 230 with an in depth view of the history of the music business, including inventions and technology, key businesses in recording, distribution and touring, and biographies of influential artists and executives. Prerequisite: MUS 230.

The course addresses how music is delivered and consumed through examining current case studies in digital media and content management. The course is aimed at students with no technical background and serves as an overview of the digital aspects of the music business, including monetization of digital content (music and video). Prerequisites: MUS 230, 332, and 335.

One 25-minute individual instruction period per week. Credit will be given for as many semesters as taken. For keyboard studies majors only. Prerequisites: MUS 116-316 or 117-317.

A practical, step-by-step approach with theoretical foundation to form a basic framework for understanding the process of L and T L

A combined didac t c and clinical prac t ce experience and daily par t cipa t on in clinical diete t c pa t ent care in a hospital se t ng. Designed to comprehensively foster professional growth and competence in the skills required for entry-le L t ń eg kiir a Ƶ 64 t Cl

Course designed to assist students in expanding their knowledge base and developing additional skills in the field of nursing. Topics may vary depending on current issues and practices. Course may be repeated once with instructor's approval. Prerequisite: permission of instructor.

A combined theory/clinical course which explores complementary healing modalities as therapeutic nursing interventions that can be used with traditional medical practices or when traditional medical practices offer no cure or relief. A specific complementary healing modality (therapeutic touch) will be fully examined and practiced in the field setting. Prerequisites: NUR 206 or R.N. status; both must meet clinical requirements.

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

Introduction to the nature and uses of theory; the process of theory construction and concept analysis. Major theories of nursing and concepts and theories from the sciences basic to nursing analyzed with emphasis on implications for nursing practice. Prerequisite: admission to DNP program or approval of instructor.

Examines similarities and differences between rural and urban residents as they relate to health and the health care system. Compares ethical theories and implications for decision-making. Explores the evolution of our present health care system, initiatives for change and issues related to rural health care agencies. Examines the existing and future roles for nursing in rural America and impact on health. Prerequisite: Admission to MSN program or approval of instructor.

This course is designed to provide an in-depth understanding of physiological principles as they apply to normal, pathological, and clinical alterations in the respiratory system. In addition, the principles of chemistry and physics as applied to clinical nurse anesthesia will be presented. Prerequisites: Admission to nurse anesthesia program and NUR 673.

Course is designed to provide an in-depth understanding of physiological principles as they apply to normal, pathological, and clinical alterations in cellular and neurophysiology. Emphasis will be placed on anesthetic implications throughout the course.

Introduct on to the prac t ce of primary care to families and individuals across the lifespan. Emphasis is on the beginning development of sa knowledge base necessary for clinical decision-making and the beginning re f nements of a model of prac t ce with the individual or family as the unit of service. Prerequisites: NUR 603 and 641.

Course will provide an in-depth study of concepts, theories, research, issues, trends, and public policy relevant to family health. It is designed to help the student develop the knowledge necessary to become a specialist in family nursing in the primary and specialty care se t ng and the community. Emphasis will be placed on developing a theore t cal basis for interven t on with families through direct care and facilita t on family decision-making and self care. Prerequisites: NUR 603, NUR 605, and NUR 641.

This is the f rst of a two course sequence designed to provide advanced knowledge of acute and chronic health problems of individuals and families of various age groups in rural se t ngs. Emphasis is on the beginning development of a knowledge base necessary for clinical decision-making and the beginning re f nements of a model of prac t ce with the family as the unit of service. Prerequisite: NUR 930; Corequisite: NUR 932.

This is the f rst in a series of clinical courses preparing the student to provide health care to families with an emphasis on rural se t ngs. This clinical course is designed to integrate the nursing process learned in the basic baccalaureate program with the theory and prac t ce necessary for the family nurse prac t t oner to provide primary health care for individuals across the lifespan. Course provides the experience necessary to help the student apply the knowledge required to develop sound clinical judgment and iden t fy appropriate diagnos t c and therapeu t c interven t ons to manage illness and promote the health of individuals and families. The focus ranged from health and disease preven t on to diagnosis and management of selected common acute and chronic problems. Corequisite: NUR 931.

This is the second of a two course sequence designed to provide advanced knowledge of acute and chronic health problems of individuals and families of various age groups in rural se t ngs. Emphasis is on the beginning development of a knowledge base necessary for clinical decision-making and the beginning re f nements of a model of prac t ce with the family as the unit of service. Prerequisites: NUR 931 and 932; Coreq- uisite: NUR 934.

This is the second in a series of advanced prac t ce nursing clinical courses focusing on the development of the advanced prac t ce knowledge and skills required to provide primary care services to families, par t cularly those in rural se t ngs. Emphasis is on the con t nuing development and use of a knowledge base necessary for clinical decision making with the family as the unit of service. Corequisite: NUR 933.

A theory and clinical procedures course designed to provide family prac t ce advance prac t ce nurses the skills and procedures necessary for the clinical management of selected clients. Prerequisites: NUR 933 and 934.

This prac t cum course focuses on the use of clinical and analy t cal skills in evalua t ng the links among prac t ce, organiza Ŭ y f Ţ m M - y Ŭ ¯ Ŗ act Ŀ Ŭ . the sk e ŀ o al skiŒ ' Ŀ Ŀ '

Supervised work experience in safety and health-related operat ons focusing on the career object ves and educa t onal object ves of the student. Evalua t on of the experience made by the department. Graded pass/fail. Prerequisite: permission of chair.

Individual study and research rela t ng to safety and health. Prerequisite: approval of problem before registering for course.

This course involves on-site analysis of safety and health programs of area industries. Students are exposed to a variety of industrial se t ngs and have the opportunity to interact with prac t cing safety and health professionals. Extensive weekly travel is required. Students also organize and present a seminar related to occupa t onal safety and health.

A study of the opera t on and process design of wastewater treatment systems. This course focuses on aerobic biological treatment and process control for the ac t vated sludge system. Topics will include treatment evalua t ons, trouble shoo t ng, system design, and opera t onal control strategies. Prerequisite: OSH 3 a

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An introduction to diverse philosophical perspectives in contemporary culture that will focus on issues of race, gender, class, sexual orientation, and identity, drawing from African American, Native American, gender studies, and feminist perspectives.

Practical course for philosophy majors. Each student will work 25 hours on a project or job that requires utilization of skills taught in philosophy courses. Graded pass/fail. Repeatable up to three hours. Prerequisites: junior or senior standing, PHI 201, and permission by instructor.

This course involves a study of modern and classical approaches to both business and personal ethics as well as the other major components of the business environment: the political, international, ecological, social and cultural environments. Prerequisites: LST 240, MGT 350, FIN 330, MKT 360, and senior standing. (Same as BUS 442.)

An intensive study of a major philosophical thinker and/or thinkers, such philosophers as Plato, Aristotle, Kant, Hegel, Marx, Nietzsche, Heidegger, Wittgenstein, among other, whose spheres of influence have engendered broader philosophical movements. May be taken up to three times for credit, at the discretion of the program director. Prerequisites: PHI 201 and any 300-level PHI course or permission of instructor.

A research/writing course designed to develop proficiency in research in philosophy and in logical argumentation, culminating in a scholarly paper that will demonstrate these skills.

Readings or other study in advanced topics. This course may be repeated for credit.

An examination of a traditional or contemporary topic in philosophy. May be repeated for credit. Prerequisite: permission of philosophy program coordinator.

Supervised independent work in philosophy. May be taken more than once for credit. Prerequisite: permission of philosophy program coordinator.

An advanced survey covering feminist theoretical perspectives and current themes in feminist research, such as the body and gender, ethics, epistemology, and how gender informs social life and political/institutional frameworks.

This course provides the student with comparative and evaluative concepts and approaches necessary to developing an intelligent understanding and appreciation of the world's diverse political systems. An approved social science University Studies elective. POL 252 will not fulfill the requirements of HON 272.

Introduction to the concepts, enduring questions, and significant thinkers associated with political philosophy. Specific attention will be given to differing conceptions of human nature, politics, the state, civic obligations and rights, freedom, justice, and democracy.

A course required of all majors and minors in interna

A meaningful, planned, and evaluated work experience related to the career and educational objectives of the student for which he/she may receive academic credit and possible financial remuneration. To be eligible, a student must be a POL major or minor with a junior or senior status and an overall GPA of 2.5. In addition, the student must have at least nine hours in POL courses (POL 140 and six hours from POL 240, 250, 252, and 261) with a GPA of 2.8. Six hours of the POL courses must be completed at MSU. May be repeated for a maximum of six hours from any 488/489 courses. Prerequisite: permission of chair.

Supervised readings or research in selected subjects designed to supplement regular course offerings. Requires chair's approval. Restricted to junior and senior students. May be repeated up to six hours. Only three hours may count toward major. Prerequisites: Fifteen hours of POL courses with a minimum overall GPA of 3.0 and a minimum GPA of 3.25 for POL courses taken for the major or minor, and chair's approval.

Capstone course for all majors in Political Science and International Studies. It is a writing intensive course in which a discipline-based research paper is refined and orally defended. Students also develop job and graduate education search skills as well as complete program assessment instruments. Prerequisites: senior standing and completion of POL 360, or permission of the instructor.

The role of government and politics in the regulation of business activities and the administration of major legislative enactments.

This course is an examination of the components of health care policy; health insurance and benefits planning, negotation, and delivery; and health promotion within the context of public sector employment in the national, state, or local governments.

A seminar on the evolution, growth, and present nature of federal, state, and local interrelationships, with an emphasis on grants-in-aid and their implementation.

Examines the process of research in public affairs, with an emphasis on quantitative methods and techniques. Required of all M.P.A. students.

A graduate-level introduction to the study of public administration, covering substantive topics in the field as well as the political dimensions of public service and the ethical issues faced by government practitioners. Emphasis is placed on the development of the discipline as a field of inquiry. Must be taken in the first semester of coursework in the M.P.A. program.

Problems and methods in perception of public problems, determination of goals, generation and evaluation of alternative policy practices and programs, and explanation of policy choices. Emphasis on political and analytical methods of examining policy making and policy outcomes. Includes a survey of literature dealing with theories of the policy process.

An intensive, graduate-level examination of major planning and evaluation techniques for government programs.

An intensive, graduate-level overview of public agency and governmental budgeting and finance at the federal, state, and local government levels. This course examines budgeting as a tool of governmental economic and public policy. Specifically, the course considers the evolution and purposes of budgeting with special attention given to recent efforts to improve government resource allocation.

An analysis of roles, responsibilities, and practices of the public manager in governmental organizations, with an emphasis on managing as a governmental actor in pursuit of the public interest, in compliance with law, and in response to a variety of elected officials; managing in highly constrained and political environments; and managing in inter-sectoral and networked arenas. Theories of bureaucratic behavior and public management are analyzed and evaluated.

An intensive study of the economic, political, and social environments of cities and other forms of local governments and the impact those environments have on local government administration. The roles and tasks of local government management, as affected by metropolitan conditions and state, regional, and federal governments, are also examined.

Comparative study of state and regional governments, administration, policies, and problems. Empirical research concerning structures, institutions, and political processes and the relationship between them and the policy outputs is examined and analyzed. Contemporary issues are examined from a comparative perspective to determine explanations for the variation among executives, legislatures, and bureaucracies in addressing or resolving these issues.

An intensive examination of, current Federal and State policies on, and impacts of unionization and collective bargaining in the public sector. Special emphasis is placed on the responsibilities of public employees and public administrators in their respective roles in contract bargaining and administration. The course includes multiple simulation exercises and workshops on labor-management practices.

Inquiry into selected topics and problems in the field of public administration. May be repeated for a maximum of six hours provided topics vary.

An intensive, graduate-level overview of public sector human resource and human capital management in the federal, state, and local governments, including such topics as types of personnel systems; recruitment and selection; compensation and benefits; training and development; performance management; legal compliance; diversity; and labor-management relations. Students address the literature in one of these areas.

A comprehensive examination of the legal, political, and economic aspects of efforts to control the use of land. The course will cover constitutional, statutory, and common law issues regarding nuisance suits, private covenants, subdivision controls, zoning and zoning procedure, planning processes, and the exercise of eminent domain.

A comprehensive comparative study of public administration in a variety of different political, legal, and economic systems.

A comprehensive comparative study of public administration in a variety of different political, legal, and economic systems.

A course integrating the theories and methods of public administration in a major research project related to a substantive management or analytic problem in the public sector. Students must propose, execute, and publicly defend their project after completing a major review of public administration literature. Normally this course shall be taken in the last semester of graduate work with the M.P.A. program. Required for all M.P.A. students. Prerequisites: POL 660, 670, 671, 673, 674, and 681.

An examination of the role of law in the administrative process. Topics to be covered include administrative rulemaking and adjudication, enabling statutes, open records and open meetings laws, procedural due process, and civil liability and immunity for public employees and governments.

A full-semester directed internship with an agency coc Ţ n ۝ ernship wit ò ʻ wit ŭ Ą t ḏ ũ

A meaningful, planned, and evaluated work experience related to the career and educat onal objectves of the student for which he/she may receive academic credit and possible fnancial remunerat on. May be repeated for a maximum of six hours from any 488/489 courses. Graded pass/fail. Prerequisite: permission of chair.

An undergraduate research thesis for outstanding senior majors only. Prerequisites: PSY 300 and 301; completed or concurrent enrollment in PSY 260, 303, 307, 414, and 415; senior standing; and permission of the department chair upon nomina t on by a faculty member.

Basic concepts of sta t s t cs are stressed. Speci f c topics include techniques dealing with single distribu t ons, some correla t onal methods, probability, and an introduct on to inferen t al sta t s t cs. Students enrolled for graduate credit will be required to ful f ll addi t onal requirements.

Topical seminars in psychology. May be repeated to a maximum of six hours. Prerequisite: permission of instructor.

This course provides a survey of the social, biological and psychological aspects of substance abuse, chemical dependency and addic t ve disorders.

A survey of current theory and research regarding human behavior in industrial and organiza t onal se t ngs. Topics addressed include selec t on and a t odressed (M an t odecof $ (so Ɲ N s Ŕ

An advanced course in reading and writing instruction designed to enable classroom teachers to model and implement a variety of research-based instructional strategies and activities in an authentic instructional context.

This course builds upon theoretical perspectives and strategies for developing the literacy abilities of students in grades K-12 in the content areas. Attention is given to ways of making the most effective use of textual materials across the curriculum. A component of the course includes projects and/or activities which relate to an academic area of study or instructional responsibility.

Provides an opportunity for advanced study of topics not covered in depth in other reading courses. Each topic involves work completed prior to class sessions, and the completion of a product appropri a the

Course provides a study of challenge educaton programming and direct experience in facilitatng challenge educaton actvites.

. An introductton to basic outdoor cooking. The course will cover basic equipment, food preparaton techniques, nutriton and menu planning for backcountry.

Techniques in organizing, planning, and evaluatng various types of recreaton programs with emphasis on guidance and leadership. Prerequisite: REC 101 or permission of instructor.

A survey of the characteristcs and recreatonal needs of the various types of excepttonal children and adults. (Same as GTY 207.)

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A minimum of 400 supervised contact hours on the job training and work experience based on student professional career objectives. Supervised by university faculty and designated organization personnel. Academic advisor must approve placements. Financial remuneration is possible, but not required. Graded pass/fail. Course may be repeated for a total of eight credit hours. Prerequisite: 12 hours core REC courses and junior standing.

This course will provide a thorough investigation of the recreational use of natural resources in the United States, as well as an overview of conditions around the world. The information presented will focus on the primary issue of "preservation versus use" of natural resources.

A study and application of techniques and best practices appropriate to historical, cultural, and natural resource interpretation in park and recreation settings. Includes analysis and development of a appreciation of interpretive programs and visitors information services. Prerequisite: REC 202.

Theories, methods and substantive issues in a sociological approach to sports. Prerequisite: six hours of sociology.

Sociological frame of reference for studying deviant behavior, with emphasis placed upon problems of definition, social processing and evaluation of significant theory and research in deviant behavior. Prerequisite: six hours of sociology.

Discusses and analyzes on both national and global levels the social, economic, political, structural and cultural causes and consequences of corporate and political deviance. Examples include consumer fraud, environmental crime, corruption of the mass media, fraudulent banking practices, identity theft, and computer crime.

Discusses and analyzes the social, economic, and cultural causes social consequences of youth violence. Examples include the emergence of international youth gangs, interpersonal youth violence, with attention to how the

Students strengthen their basic language skills while con t nuing to broaden cultural awareness of Spanish-speaking socie t es. Students relate experiences, produce brief reports on course topics, and express opinions concerning a variety of themes. Students learn to communicate on a more complex level in Spanish. Taught in Spanish. Prerequisite: SPA 102 or equivalent.

Students advance their speaking, wri t ng, reading, and listening language skills in this interac t ve course focused on the prac t cal applica t on of the language in contemporary Spanish-speaking countries. Ac t vi t es include role-play, projects, reports, and discussions of texts. Taught in Spanish. Prerequisite: SPA 201 or equivalent.

A con t nua t on from SPA 201, this course is a prac t cal applica t on of Spanish for the working world together with grammar review and with emphasis on communica t on skills on the formal level. Includes further prac t ce in listening, conversa t on, reading and wri t ng. Students may be required to a t end and write a report on two approved cultural events or complete alterna t ve cultural assignments. Taught in Spanish. Students may receive credit for SPA 202 or 203, but not both. Spanish 203 counts toward the minor and the major. Prerequisite: SPA 201 or equivalent.

A course designed to develop the vocabulary and oral communica t on skills of the student with a background of one year of college Spanish or equivalent. Emphasis will be placed on bringing the student into contact with Spanish na t ve speakers and various aspects of their culture. Either SPA 210 or 211 may count as an elec t ve for the major or minor. Only taught abroad. Prerequisite: SPA 102 or equivalent.

Focuses on the contemporary cultural character of Spain. Combines tradi t onal class work with carefully planned excursions to cultural centers. Also designed to increase linguistic proficiency through increased contact with native speakers. Prerequisite: SPA 102 or equivalent.

Course will ofer students the opportunity to expand their cultural and linguistc knowledge of Spanish-speaking cultures through a central conceptual framework, such as an internatonal conference, an apartment building, a hotel, or a business. Students will engage in extensive role-play and creatve exercises to establish contexts, choose fctve identtes, and improvise a series of encounters. Prerequisite: SPA 202 or permission of instructor.

A study of the vocal apparatus, phonetc transcripton, and analysis of the contrast between Spanish and English phonology with individual work designed to improve pronunciaton. Prepares prospectve teachers to teach correct pronunciaton efectvely. Prerequisite: SPA 202 or permission of instructor.

A panoramic study of the literature of Spain from the Middle Ages to the present. Prerequisites: SPA 302 and SPA 301 or 306.

Spanish literature of the sixteenth and seventeenth centuries. Prerequisites: SPA 302 and SPA 301 or 306.

A panoramic study of the literature of Spanish America from pre-Columbian tmes to the present. Prerequisites: SPA 302 and SPA 301 or 306.

Prerequisites: SPA 302 and SPA 301 or 306.

The origin and development of the short story in Spanish America, with emphasis placed upon the twenteth century. Prerequisites: SPA 302 and SPA 301 or 306.

Survey of European (including Britsh) flm by French, English, German, and Spanish directors in the original languages with

A study of the vocal apparatus, phonetic transcription and analysis of the contrast between Spanish and English phonology with individual work designed to improve pronunciation. Prepares prospective teachers to teach correct pronunciation effectively. Prerequisites: SPA 302 and SPA 301 or 306.

Course work designed to meet specific needs and interests on an individual basis. Prerequisites: SPA 302 and SPA 301 or 306.

Prerequisites: SPA 302 and SPA 301 or 306.

Credit given to students for approved travel and study in Spain and Spanish America. Repeatable up to nine hours. Prerequisite: junior standing or above.

Topics will vary according to the needs and interests of students. May be repeated for a total of six hours of credit. Prerequisites: SPA 302 and SPA 301 or 306.

Topics will vary. May be repeated for a total of six hours of credit. Prerequisites: SPA 302 and SPA 301 or 306.

A specialized study contrasting Spanish and English grammatical structures and usage. Prerequisites: SPA 302 and SPA 301 or 306.

Course work designed to meet specific needs and interests on an individual basis. May be repeated for a total of six hours of credit. Prerequisites: SPA 302 and SPA 301 or 306.

Prerequisites: SPA 302 and SPA 301 or 306.

Credit given to students for approved travel and study in Spain and Spanish America. Repeatable up to nine hours.

STATISTICS

Elementary probability, the binomial, normal, student's and chi-square distributions, random sampling, regression and correlation. Prerequisite: ACT math standard score of at least 20 or MAT 097.

A study of applied statistical techniques, including re-expressing data, categorical data analysis, regression inference, analysis of variance, multiple and non-linear regression, and nonparametric analysis, from a conceptual standpoint. Prerequisite: STA 135 or consent of instructor.

Probability, population and sample distribution, sampling, hypothesis testing, regression on one variable, and quality control. Prerequisite: MAT 309.

Introduction to probability theory and statistical inference. Combinatorics, conditional probability independence. Discrete and continuous random variables and their distributions. Expected value and moments of distributions. Estimation theory and properties point estimators. Confidence intervals. Basic theory of hypothesis testing. Testing means and proportion. T-tests. Descriptive statistics. Prerequisite: MAT 308 or permission of instructor.

Additional topics in probability theory and statistical inference. Bayes' Theorem, functions of random variables, order statistics. Bayesian inference, F-tests, chi-square tests, contingency tables, regression and correlation. Prerequisite: STA 540.

A survey course in statistical methods for advanced undergraduate students with no prior training in statistics. The course covers techniques commonly used for data analysis in many scientific fields. Topics included are probability distributions, sampling, variance, estimation, hypothesis testing, contingency table, regression and analysis of variance. (Does not apply toward any degree in mathematics or a minor in mathematics.)

A study of applied statistical techniques including correlation, regression, analysis of variance and non-parametric methods with a view toward applications. A statistical computer package will be used when appropriate, but no computer background is required. Prerequisite: STA 554 or permission of instructor.

A continuation of STA 565. Includes further topics in analysis and variance, non-parametrics and multivariate analysis. Prerequisite: STA 565.

An introductory time series analysis course that introduces students to classical and modern time series models. Time series analysis comprises methods for analyzing time series data in order to extract meaningful statistics and other characteristics of the data. Time series forecasting is the use of a model to forecast future events based on known past events: to predict data points before they are measured. This course serves junior and senior mathematics majors, mathematics minors, and other interested students. A student taking this course should have a background in statistical methods. Prerequisite: STA 565 or permission of instructor.

A study of Bayesian data analysis methods including Bayesian inference, hierarchical modeling, model checking, model building, Bayesian computation, and convergence monitoring and diagnostics. A Bayesian statistical computing package will be used when appropriate. Prerequisites: STA 540 or 565 or consent of instructor.

Selected topics in probability and statistics. Prerequisite: permission of instructor.

An exploraton of topics in probability and statstcs from the viewpoint of future/current secondary and community college teachers of mathematcs and statstcs. Such topics include descriptve statstcs, correlaton and regression, uses and abuses of statstcs in real life, traditonal and simulaton-based approaches to teaching statstcal inference, common misconceptons in probability, and the AP Statstcs curriculum. (This course does not ofer graduate credit for those people seeking a master of science degree in mathematcs or chemistry or a master of arts degree in mathematcs.) Prerequisite: permission of instructor.

Introducton to probability theory and statstcal inference. Combinatorics, conditonal probability independence. Discrete and contnuous random variables and their distributons. Expected value and moments of distributons. Estmaton theory and propertes point estmators. Confdence intervals. Basic theory of hypothesis testng. Testng means and proporton. T-tests. Descriptve statstcs. Prerequisite: MAT 308 or permission of instructor.

Additonal topics in probability theory and statstcal inference. Bayes' Theorem, functons of random variables, order statstcs. Bayesian inference, F-tests, chi-square tests, contngency tables, regression and correlaton. Prerequisite: STA 540 or 640.

A survey course in statstcal methods for advanced undergraduate students and graduate students with no prior training in statstcs. The course covers techniques commonly used for data analysis in many scientfc felds. Topics included are probability distributons, sampling, variance, estmaton, hypothesis testng, contngency table, regression, and analysis of variance. (Does not apply toward any degree in mathematcs.)

A study of applied statstcal techniques including correlaton, regression, analysis of variance, categorical data analysis, and non-parametric methods with a view toward applicatons in clinical r Ł ş ' } Ma wtcav

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Course prepares undergraduate students in the College of Health Sciences and Human Services to develop knowledge and skills in the delivery of services to children and youth in foster care and other out of home care situations in the context of an ecological and family solutions framework. Prerequisite: SWK 120.

This course is designed to provide a comprehensive introduction to practice skills and treatment interventions related to social work with abused and neglected children and their families. This course will focus on the development of specific practice skills in collecting data and assessing situations with a variety of client types. This course is the second of two specific course requirements for the Public Child Welfare Certification Program available through Murray State University's Social Work Program and the Kentucky Cabinet for Families and Children. Prerequisites: SWK 405 and permission of instructor.

Individual projects of special interest under the direct supervision of a theatre or dance faculty member. Prerequisites: senior standing and consent of the chair of the department.