COLLEGE OF ARTS AND SCIENCES
(F = Classes offered in the Fall, S = Classes offered in the Spring, SU = Classes offered in the Summer,
D = Classes offered upon Demand, O = Odd years, E = Even years)

DEPARTMENT OF ART, COMMUNICATION AND THEATRE

Art

ART 1113 FUNDAMENTALS OF ART
Examination of the basics in art. Foundation laid for future participation in drawing and painting. This course cannot be used to satisfy General Education requirements. F, S

ART 1123 FOUNDATIONS I, DRAWING
Development of basic drawing skills and powers of observation. Topics include: gesture, line, volume, value, perspective, sighting and texture. A variety of materials and techniques will be explored. F

ART 1133 FOUNDATIONS II, TWO DIMENSIONAL DESIGN
A study of the organizing principles and visual elements of two-dimensional design (unity, variety, balance, color, value, line, texture). Students will explore the concepts covered through assignments which utilize a variety of materials. Emphasis is placed on the development of independent research skills. S

ART 1143 FOUNDATIONS III, THREE DIMENSIONAL DESIGN
A study of three-dimensional form with emphasis on the elements of art and principles of design. Various media, construction techniques, and areas of art history, aesthetics and art criticism, as applied to form, will be explored. F

ART 1213 PERSPECTIVE
An introduction to the essentials of beginning perspective and advanced perspective devices. Both linear and atmospheric perspective are covered. Prerequisites: ART 1123 and ART 1133. D

ART 1661 COMPUTER APPLICATIONS
Introductory class for art students into the graphic arts. Teaches basic understanding of Photoshop and Illustrator. F, S

ART 1223 ART SURVEY
This General Education course traces the history of art from prehistory to the present. Emphasis is on art of the western world from antiquity through the modern era. Among the topics covered are the art of Renaissance Europe, Impressionism and Post-Impressionism, as well as ways of seeing and the influence of non-Western cultures. F, S

ART 2113 ACRYLIC TECHNIQUES
Beginning level easel painting course focusing on development of student’s individual expression in form and color. Prerequisites: ART 1123 and ART 1133. D

ART 2133 INTRODUCTION TO GRAPHIC DESIGN
Introduces graphic design as a means of visual communication. Formal principles of design, semantics, symbol theory, and theory of communication will be studied. Macintosh graphics and illustrator will also be studied in the execution of the class projects. Previous computer experience is not required. Prerequisites: ART 1123 and ART 1133. F

ART 2143 HISTORY AND THEORY OF GRAPHIC DESIGN
This is a five part survey of the history of graphic design, including the influences of Modern Art and the Bauhaus on graphic design. Course work concludes with the effects of the information age and the global village on graphic design. Prerequisites: ART 1123 and ART 1133. S

ART 3011-4 SEMINAR IN ART
Group study of specific topics needed for special courses offered on an irregular basis.

ART 3113 WATERCOLOR STUDIO
Study and practice of traditional transparent watercolor technique and experimentation with contemporary methods. Emphasis on composition, color, process and technique. Prerequisites: ART 1123 and ART 1133. D

ART 3153 FIGURE DRAWING
Develop skills of draftsmanship and perception while studying the figure. Prerequisites: ART 1123 and ART 1133. D

ART 3212 AESTHETICS AND ART CRITICISM
A course designed to introduce the student to what aesthetics is, the nature of aesthetic judgment, perception and aesthetic theory. Criticism is examined as a way to approach the study of art. S

ART 3223 TAPESTRY
The basics of tapestry weaving. Students will learn the essential tapestry weaving techniques and how to weave a variety of shapes. D

ART 3353 CLAY STUDIO
A study in ceramic design using both hand-built and wheel methods of construction. Firing and glazing procedures will also be covered. F, S, SU

ART 3383 MIXED MEDIA
Students draw upon a wide range of materials such as paper, metal, clay, plaster, wax, plastic and found objects while incorporating various techniques in the fabrication of 3-D works. Students incorporate materials and technical skills that they may already possess. D

ART 3413 SCULPTURE STUDIO
Three-dimensional work in the area of sculpture. Emphasis is placed on fundamental sculpture techniques and the elements of art and principles of design as applied in a three-dimensional composition. Prerequisites: ART 1123, ART 1133 and ART 1143. D

ART 3483 PRINTMAKING STUDIO
Printmaking by hand transfer and with the press. Composition and personal expression are emphasized. Intaglio and relief methods are explored. Prerequisites: ART 1123 and ART 1133. F, S

ART 3513 INTERMEDIATE GRAPHIC DESIGN I
Introduction to web design using Dreamweaver and Flash programs. Prerequisites: ART 1123, ART 1133 and ART 2133. F

ART 3593 AMERICAN ART HISTORY
The focus of this course is an overview of the painting, sculpture and architecture of the United States from the golden age to the expression of today, with attention to the 20th century struggle for stylistic
independence from European influence. Native American Modernism and the Harlem renaissance will be addressed. D

ART 3613 HISTORY OF ART I
A survey of art from prehistory through the Gothic era, this course considers the visual culture of Ancient Egypt, Mesopotamia, Greece and Rome, the influence of non-Western cultures on Christian art in the west, the art and architecture of Early Christian and Byzantine Europe, and the rise of the Romanesque and Gothic styles. D

ART 3653 HISTORY OF ART II
Continuing the survey of art begun in ART 3613, this course follows the Renaissance development of modern ways of seeing, the rise of the Baroque and Rococo, the battle between Neoclassicism and romanticism during the early nineteenth century, and the optical experiments of the Impressionists and Post-Impressionists. D

ART 3683 ILLUSTRATION STUDIO
Visual communication is stressed, expressing both the artist and the subject matter. Traditional illustration media includes marker, color pencil, airbrush, watercolor, acrylic and oil paint. Prerequisites: ART 1123, ART 1133 and ART 2133. D

ART 3753 LIFE DRAWING
Observational drawing with an emphasis on composition. Various techniques and subjects will be explored. Prerequisites: ART 1123 and ART 1133. D

ART 3783 INTERMEDIATE GRAPHIC DESIGN II
Projects explore design processes in two or three dimensions, visual identity and communication, thematic structure and hierarchy, creative problem solving and basic design practice of critiques and discussion. Emphasis is placed on using media techniques, concepts, strategies and professionalism in all aspects of design. Upon completion, students should be able to conceptualize, create and produce designs for reproduction. Prerequisites: ART 1123, ART 1133, and ART 2133. F

ART 3853 TYPOGRAPHIC DESIGN
Course content includes the anatomy of typographical letter forms, fonts and classifications. Syntax, space, visual hierarchy, typographical grids, function, expression and communication theory are stressed. Course work will be done on Power Macintosh computers, using Quark/Xpress and Adobe Illustrator software. Prerequisites: ART 1123, ART 1133, and ART 2133. D

ART 3883 ADVERTISING DESIGN
Course work includes logo and corporate identity development. Traditional advertising formats are studied and applied to a fictional company created by the student. Prerequisites: ART 2133, ART 2143, and ART 3853. D

ART 3923 ADVANCED GRAPHIC DESIGN I
This course is an advanced exploration of various techniques and media for advertising and graphic design. Emphasis is placed on advanced concepts and solutions including but not limited to complex and challenging graphic design problems. Upon completion, students should be able to demonstrate competence and professionalism in visual problem solving. Prerequisites: ART 2133, ART 2143, and ART 3853. S

ART 3953 PROFESSIONAL PRACTICES OF GRAPHIC DESIGN
This course provides the student practical real-world experience in the field of design. It should be approached as an internship, and subsequently the requirements can be achieved effectively through a summer internship with an appropriate agency under supervision of an instructor. Not recommended for Design Studio Employees. Prerequisites: ART 2133, ART 2143 and ART 3853. D

ART 4001-4 INDIVIDUAL STUDY IN ART (TOPIC)
Individual study of specified topic for undergraduate students. Credit 1 to 4 semester hours.

ART 4011-4 SEMINAR IN ART (TOPIC)
Group study of specified topic for undergraduate students. Credit 1 to 4 semester hours. D

ART 4163 PORTFOLIO
The objective of this course is to prepare Graphic Design majors for the job market. Students will research the current job market and prepare a career plan. A portfolio will be created with a resume, a self-promotional mailer and 35 mm slides. Prerequisite: Sr. Status. S

ART 4253 APPLIED DESIGN
A studio course involving the design, execution and study of contemporary trends in crafts. Prerequisites: ART 1123 and ART 1133. SO

ART 4313 PAINTING STUDIO
An exploration of opaque painting techniques and processes. The development of pictorial form and content is emphasized. Prerequisites: ART 1123 and ART 1133. D

ART 4333 STUDIO DRAWING
Studio Drawing will explore creative and expressive approaches to drawing with an emphasis on diversity of techniques. Experiences utilizing a variety of media will be used to develop fundamental and advanced drawing concepts. Prerequisites: ART 1123 and ART 1133. S

ART 4353 MODERN ART HISTORY
This course, continuing the survey of art begun in ART 3613 and ART 3653, investigates the history of painting, sculpture and architecture from the late nineteenth century through World War II. Symbolism, Post-Impressionism, Cubism and Expressionism are among the trends discussed, as are the art of Picasso, Duchamp, Klimt and Dali. D

ART 4383 ART HISTORY SINCE 1945
This survey, completing the series begun with ART 3613, 3653 and 4353, traces the development of art from the rise of the New York School to the present day. Among the topics discussed are Abstract Expressionism, Pop and Op Art, and the art of Jackson Pollcock, Mark Rothko, Andy Warhol and Keith Haring. D

ART 4393 NON-WESTERN ART HISTORY
Supplementing rather than replacing the traditional art survey, this course examines the history of art and visual culture of non-Western civilizations with emphasis on Asia, Africa, Oceania and native America. Topics include the art of Japan, China and Nigeria, as well as the visual legacy of the Aztec, Mayan and Incan civilization. D

ART 4413 ADVANCED GRAPHIC DESIGN II
This course is a continuation of the techniques learned in Advanced Graphic Design I. The course further develops the application of visual elements and design principles in advertising and graphic design. Topics include creation of various designs, such as logos, advertisements, posters, outdoor advertising and publication design. Upon completion, students should be able to effectively apply design principles and visual elements to projects. Prerequisites: ART 2133, ART 2143 and ART 3853. F
ART 4452 CONTENT, METHODS AND MATERIALS IN ELEMENTARY SCHOOL ART
Current methods of applying Discipline-Based Art Education will be used to explore ways to integrate the visual arts into the elementary grades. **Prerequisite: Admission to Teacher Education Program. F, S**

ART 4553 TEACHERS’ COURSE IN ART
This course explores methods of teaching visual art at the secondary level. In-depth attention will be given to the application of Discipline-Based Art Education assignments at this level. **Prerequisites: Art major or endorsement and admission to the Teacher Education Program. D**

ART 4651 SENIOR EXHIBIT
Students will prepare and present a body of work produced as an undergraduate. Emphasis will be on professionalism in presentation as well as the quality of artwork selected. **F, S**

**Communication Arts**

COMM 1263 INTRODUCTION TO THEATRE
Background, philosophy and practices of theatre arts, the theory and practice of elementary principles of direction, acting, and stagecraft. All of the above will be applied to the study of American, British, and European plans representing major literary periods from classic to contemporary. **F, S**

COMM 1313 INTRODUCTION TO PUBLIC SPEAKING
This course provides students with an in-depth analysis of public speaking. It includes a thorough examination of the theoretical framework of public speaking and requires students to put those theories into practice. Students will build critical thinking skills by constructing their own messages and evaluating those of others. This course is designed to heighten students’ skills as well as increase their confidence as public speakers. **F, S, SU**

COMM 2063 VOICE AND DICTION
Study of vocal elements and phonetics, emphasis on function of speech and on vocal musculature. **D**

COMM 2103 INTRODUCTION TO MASS COMMUNICATION
Basic study of the nature and function of mass communication systems, their audiences, social impact, pressures, and regulations. **F, S**

COMM 2113 WRITING FOR MASS MEDIA
Introduction to writing for both print and broadcast media. Includes news, feature, editorial, and sports writing. **F**

COMM 2123 INTERPERSONAL COMMUNICATION
The study of symbolic and nonverbal communication in dyadic settings. **F, S**

COMM 2213 NEWS GATHERING AND REPORTING
New gathering and writing for publication. Reporting beyond the inverted pyramid style. **Prerequisite: COMM 2113. F, S**

COMM 2223 INTRODUCTION TO COMMUNICATION STUDIES
This course will be an overview of the field of communication and will be a required course for all communication arts majors with an emphasis in communication studies. This course will introduce students to the research methodologies for the field of communication and to the major areas of study, i.e., interpersonal communication, small group, organizational, intercultural, health, family communication and political communication. **S**

COMM 2363 ACTING I
Introduction to basic principles of acting and development of basic acting techniques, training through lectures, class improvisations and play analysis. **F**

COMM 2763 STAGECRAFT
The construction, painting, rigging, and handling of stage scenery and properties. **FO**

COMM 3013 THEATRICAL MAKE-UP
Study and implementation of the principles, skills, techniques, materials, and methods relevant to the selection, design, and application of stage make-up for varying dramatic genres and purposes. **SO**

COMM 3023 LIGHTING DESIGN
The course covers the principles of designing, mounting and operating stage lighting applied to actual campus productions. Students in this course will light the student-directed plays developed in COMM 3263. Play Directing and Production. **SO**

COMM 3073 PERSUASION
Exposure to several theories of persuasive communication. Practical assignments used to test theories and develop persuasive skills. **FO**

COMM 3113 NEWS EDITING
Problems of the editorial desk, including editing and proofreading, layout/design, headline writing and desktop publishing. **F, S**

COMM 3213 ADVANCED NEWS EDITING
This continuation of COMM 3113 covers advanced newspaper design, copy-editing, and proofreading with additional instruction in grammar, syntax, and writing style. **Prerequisites: COMM 3113 and ENGL 1213. D**

COMM 3313 FEATURE WRITING
Writing the feature story for both newspapers and magazines. **Prerequisites: Six hours of English. F**

COMM 3333 PHOTOJOURNALISM
This course covers basic and intermediate photography as applied to journalism. Students use digital and 35mm cameras to produce color and black-and-white images. Additionally, they use computer programs to manipulate digital images and insert them into text-based or web-based publications. **SU**

COMM 3413 DESKTOP PUBLISHING
Electronic publishing using personal computers and software for word processing, page building, image manipulation, scanning, and editing. Includes personal web page building and web site management as a form of desktop publishing relevant to Mass Communication. **F**

COMM 3543 SMALL GROUP COMMUNICATION
Study of ways in which group discussion functions and means of becoming effective discussion leaders and participants. **FE**

COMM 3553 ORAL INTERPRETATION
A study of the theory, principles, and techniques of the interpretation of literature for oral performance. **D**

COMM 3563 ARGUMENTATION AND DEBATE
Study and application of logic and argumentation; practical application through debate and discussion. **FE**
COMM 3573 INTERCULTURAL COMMUNICATION
Students examine the ways that communication varies in different cultures. Kinds of differences studied include nationalities, languages, ethnicities, gender, age and others. SE

COMM 3613 SPECIALIZED PUBLICATIONS
Principles, methods, and problems of specialized publications, including magazines, newsletters, anthologies, yearbooks, programs and special public relations publications. F, S

COMM 3663 SCRIPT ANALYSIS
Focus is on the foundational approaches to script analysis and form/style/mood distinctions through reading and analysis of representative plays from distinct perspectives of playwright, actor, designer, and director; analysis is conducted through an in-depth study of assigned plays. Particular emphasis is placed upon analyzing a play’s meaning through plot and character construction, story, persuasive imagery, and language. Projects on assigned plays are further developed through readings in criticism and history and through live and/or videotaped theatrical productions. Prerequisites: COMM 1263 and COMM 2763.

COMM 3761 THEATRE PRODUCTION
Workshop experience in the practical application of theatre skills. Credit can be earned in stagecraft, lighting/sound, costume/makeup, and management/publicity. F, S

COMM 3763 STAGE MANAGEMENT
Stage management is a class designed to introduce the student to the process of a theatrical production from inception to completion with an emphasis on the managerial aspects of the production. Specifically, the student will have basic understanding of stage management for the theatre. Prerequisites: COMM 1263 and COMM 2763

COMM 3963 COSTUME HISTORY
A study of the design and development of costume from ancient times up to the present. D

COMM 4001-4 INDIVIDUAL STUDY IN COMMUNICATIONS
Specific topic in Communications. One to four credit hours. D

COMM 4011-4 SEMINAR IN COMMUNICATIONS (TOPIC)
Group study of specified topic. One to four credit hours. D

COMM 4121 SENIOR SEMINAR
This course is required during the senior year for Communication Studies emphasis students. Students will produce an approved presentation and portfolio to be reviewed by the department assessment committee. S

COMM 4243 MEDIA PRODUCTION
Students are provided opportunities to develop their communication skills through audio and video media projects.

COMM 4293 MEDIA LAW AND ETHICS
Overview of First Amendment rights and responsibilities. Includes issues of obscenity, liable, censorship, rights of privacy, trial by media, rights of access, and political correctness. S

COMM 4343 COMMUNICATION THEORY
Introduction to theories and methods used to study human communication phenomena across several contexts. SO

COMM 4363 ORGANIZATIONAL COMMUNICATION
A course integrating theory and practice focusing on how people in professions are able to succeed in their jobs and careers through effective communication practices. FO

COMM 4403 SCENE DESIGN
Study of the theory of designing stage settings, including both aesthetic and practical considerations. Practice in creating sketches, floor plans, construction drawings, and set models. Prerequisite: COMM 2763. SE

COMM 4463 THEATRE HISTORY: GREEK TO 1660
Survey of growth and development of the theatre from its beginnings to 1660 with consideration of dramatic literature, physical theatre, style of presentation, and social significance of theatre. FO

COMM 4463 THEATRE HISTORY: 1660 TO PRESENT
Survey of growth and development of the theatre from 1660 to the present with consideration of dramatic literature, physical theatre, style of presentation, and social significance of theatre. SE

COMM 4563 TEACHING SPEECH IN THE SECONDARY SCHOOL
Problems and methods of teaching speech and directing speech activities in the secondary school. Prerequisite: Admission to the Teacher Education Program. D

COMM 4663 THEATRE HISTORY: 1660 TO PRESENT
Survey of growth and development of the theatre from 1660 to the present with consideration of dramatic literature, physical theatre, style of presentation, and social significance of theatre. SE

COMM 4813 PRINCIPLES OF PUBLIC RELATIONS
This course is designed to expose students to the practices of writing and designing public relations documents. To help students develop the skills necessary for a career in public relations. Students will also be provided an understanding of the necessity and benefits of public relations to the business world. F

COMM 4823 WRITING FOR PUBLIC RELATIONS
This course is designed to develop writing skills necessary to a career in public relations. Students will be provided with exposure to the stresses of deadline requirements inherent within the public relations profession. Students will develop research skills necessary for public relations writing. S, E

COMM 4833 PRINCIPLES OF ADVERTISING
This course is designed to introduce students to different perspectives of advertising and the integration of marketing and sales. Students will be engaged in learning and applying various advertising strategies as well as creating various advertisements. Students will be challenged to create and evaluate marketing and advertising strategies through the use of a variety of advertising media. S

COMM 4963 ACTING II
Intensive study of acting techniques with special emphasis on character development, vocal patterns, and physical movement. SE

DEPARTMENT OF BIOLOGICAL SCIENCES

BIOL 1004 BIOLOGICAL CONCEPTS
An introduction to the concepts and methods of biology needed to understand biological issues faced by society. Upon completion of the course students will be able to apply the scientific method to problem solving and to explain natural phenomena. Students will also understand
such concepts as the role of the cell in maintaining conditions essential for life. In addition, students will be able to describe the interactions between living organisms and the environment at the population, ecosystem, and biosphere levels and to identify potential impacts on society of biotechnology, world population growth, and human influences on global biogeochemical cycles. Does not apply to Biology major or minor credit. F, S, SU

BIOL 1013 CURRENT ISSUES IN BIOLOGY I
Students will be introduced to how basic knowledge of biological sciences can contribute to their growth as informed global citizens. The course focuses on biological principles that have immediate applications in our everyday lives. The course will also require that students use the knowledge they received to debate important issues, solve problems, and communicate complex issues to their peers. Does not apply to Biology major or minor credit. F, S

BIOL 1054 PRINCIPLES OF BIOLOGY I
Introduction to major molecular, cellular and genetic principles needed to understand the functioning of all organisms. Investigative laboratories introduce important techniques and methodologies used by modern biologists. Students will be introduced to scientific procedure, reasoning, problem solving, and reporting. Required for all biological sciences majors and minors and recommended for pre-professional and other science majors. Corequisite: BIOL 1054L. F, S, SU

BIOL 1054 PRINCIPLES OF BIOLOGY II
Introduction to major principles of evolutionary theory, the unity and diversity of life, and form and function in living organisms. The course and laboratory emphasize practice of scientific procedure while developing skills in reading, writing, researching, and speaking about science. Students are introduced to biological tools and techniques for understanding form and function. Required for all biology majors and minors as well as programs in medical laboratory science and secondary education. Corequisite: BIOL 1054L. Prerequisite: BIOL 1054. F, S

BIOL 3012 BIOLOGICAL TERMINOLOGY
The course is designed to familiarize the students with the terminology used in biological disciplines. This familiarization will be accomplished by learning root words, prefixes, and suffixes from Latin and Greek and by studying word analysis techniques. S

BIOL 3053 CELL BIOLOGY
This course introduces the study of molecular, morphological, and physiological aspects of cell biology. Lecture only. Prerequisites: BIOL 1054 and BIOL 1254. F, S

BIOL 3152 GENETICS AND CELL BIOLOGY LABORATORY
The laboratory study of genetics and cell biology. Corequisite: BIOL 3253. Prerequisites: BIOL 1054 and BIOL 1254. F, S

BIOL 3253 GENETICS
An introduction to genetics including Mendelian, molecular, and population genetics. Required for all Biological Science majors and Natural Science Education majors. Prerequisites: BIOL 1054 and BIOL 1254. F, S

BIOL 3283 ECOLOGY
Introduction to population, community, and ecosystem ecology. Lecture only. Prerequisites: BIOL 1054 and BIOL 1254. F, S

BIOL 3304 AQUATIC ECOLOGY
An introduction to freshwater ecosystems (rivers and lakes) with respect to their physical, chemical, and biological structure. These diverse aspects are united in the concept of trophic status. Adaptations of aquatic organisms to the aquatic environment are emphasized. The laboratory involves extensive field studies in local aquatic environments with emphasis on collection methods, analytical techniques, and data analysis. Fulfills program field course requirement. Corequisite: BIOL 3304L. Prerequisites: BIOL 1054 and BIOL 1254. FE

BIOL 3604 BIOLOGY OF INSECTS
A study of the fundamental principles of insect life, insect morphology, and physiology, classification and recognition of common families of insects, economic relations and fundamentals of insect control. Methods of collecting and preserving and displaying insects are also covered. Corequisite: BIOL 3604L. Prerequisites: BIOL 1054 and BIOL 1254. FO

BIOL 3704 HUMAN ANATOMY
A study of the normal functional anatomy of the human body. The laboratory includes extensive use of human models and cat dissection. Corequisite: BIOL 3704L. Prerequisites: BIOL 1004 or 1054. Recommended: 3012. F, S, SU

BIOL 3814 BIOLOGY OF PLANTS
This course includes the study of algae, non-vascular and vascular plants with emphases on plant cell biology, morphology and physiology, classification, and ecology. Corequisite: BIOL 3814L. Prerequisites: BIOL 1054 and BIOL 1254. FE (BIOL 3053 and BIOL 3253 recommended).

BIOL 3904 HUMAN PHYSIOLOGY
A study of the normal function of the human body. Strong emphasis is placed on homeostasis. Corequisite: BIOL 3904L. Prerequisites: BIOL 1004 or 1054 and CHEM 1004 or higher numbered chemistry course. F, S, SU

BIOL 4001-4 INDEPENDENT STUDY IN BIOLOGICAL SCIENCES (TOPIC)
Independent study of a specified topic for undergraduate students. Credit one to four hours. Up to 4 hours of independent study credit may be applied to the biological sciences major. F, S, SU

BIOL 4011-4 SEMINAR IN BIOLOGY (TOPIC)
Group study of specified topic for undergraduate students. Credit one to four semester hours. F, S, SU

BIOL 4021-4 SPECIAL TOPICS IN BIOMEDICAL SCIENCES
Provides special topics in biomedical sciences with variable topics for 1-4 credit hours. May include laboratory. May be repeated for a maximum of 4 credit hours. Enrollment by signature only. Prerequisites: BIOL 1054 and BIOL 1254 and junior, senior, or graduate standing. D

BIOL 4031-4 SPECIAL TOPICS IN MICROBIOLOGY
This course is offered with variable topics in microbiology for 1 to 4 credit hours. A maximum of 4 credit hours may be applied toward the B.S. Biological Sciences degree. Prerequisites: BIOL 1054 and BIOL 1254 and junior, senior, or graduate standing. D

BIOL 4041-4 SPECIAL TOPICS IN ENVIRONMENTAL AND ORGANISMAL BIOLOGY
Provides special topics in environmental biology and the biology of organisms with variable topics for 1-4 credit hours. May include laboratory. May be repeated for a maximum of 4 credit hours. Enrollment by signature only. Prerequisites: BIOL 1054 and BIOL 1254 and junior, senior, or graduate standing. D
Biology Department

BIOL 4154 DEVELOPMENTAL BIOLOGY
The exploration of synthesis of vertebrate and invertebrate organisms. Cellular and molecular aspects of animal development will be covered as well as medical implications of developmental biology. Enrollment by signature only. Corequisite: BIOL 4154L. Prerequisites: BIOL 1054 and BIOL 1254. D

BIOL 4204 VERTEBRATE BIOLOGY
A comparative study of vertebrate adaptations including anatomy and physiology, behavior, and natural history. Includes laboratory and field biology. Corequisite: BIOL 4204L. Prerequisites: BIOL 1054 and BIOL 1254. SE

BIOL 4213 IMMUNOLOGY
The study of the body’s immune system and its relationship to health and disease. Prerequisite: BIOL 4355. F, S

BIOL 4254 INVERTEBRATE BIOLOGY
A comparative study of adaptations of invertebrate organisms including anatomy and physiology, behavior, classification and identification, and natural history. The course includes laboratory and field activities. Corequisite: BIOL 4254L. Prerequisites: BIOL 1054 and BIOL 1254. D

BIOL 4284 PARASITOLOGY
Overview of viral, fungal, bacterial and eukaryotic parasites infecting humans. Lab includes collection, isolation, cultivation, and identification of parasites. Corequisite: BIOL 4284L. Prerequisites: BIOL 1054 and BIOL 1254. D

BIOL 4314 ENVIRONMENTAL BIOLOGY
The study of anthropogenic (man-made) effects of pollution on the environment, including the effects on plant and animal life as well as humans. Fulfills biological sciences field course requirement. Corequisite: BIOL 4314L. Prerequisites: BIOL 1054 and BIOL 1254. D

BIOL 4343 APPLIED MICROBIOLOGY
This covers topics including medical applications of gene therapy and therapeutic agents, industrial microbiology and fermentation, agricultural applications, microbial ecology, and food microbiology. Includes laboratory demonstrations in lecture. Prerequisite: BIOL 4355. D

BIOL 4355 MICROBIOLOGY
A basic study of microorganisms involving classification and cultivation of bacteria, fungi, and viruses. Special emphasis is directed toward microbial morphology and physiology of disease causing microorganisms, antibiotics, and their action, and immune mechanisms. Corequisite: BIOL 4355L. Prerequisites: CHEM 1004 or CHEM 1203 and BIOL 1004 or BIOL 1054. F, S, SU

BIOL 4404 PATHOGENIC MICROBIOLOGY
Provides an overview of microbial physiology, molecular genetic mechanisms of pathogenicity, disease pathology, and clinical diagnosis procedures. Emphasis is placed on specific bacterial and viral pathogens. Corequisite: BIOL 4404L. Prerequisite: BIOL 4355. S

BIOL 4454 PLANT TAXONOMY
A study of the history, literature, and principles of plant taxonomy, with emphasis on the flowering plant flora of Oklahoma. Corequisite: BIOL 4454L. Prerequisites: BIOL 1054 and 1254. Recommended: BIOL 3253. SE

BIOL 4463 VIROLOGY
A study of bacterial and animal viruses, including virion structure, cultivation, molecular genetics, and mechanisms of infection. Attention is given to viral diseases, their pathology, control, and prevention. Prerequisite: BIOL 4355. D

BIOL 4503 MICROBIAL PHYSIOLOGY
This course involves the physiological and biochemical activities of bacteria with emphasis on structure, function, and molecular control mechanisms. Pathogenic and non-pathogenic bacteria are considered. Prerequisite: BIOL 4355. D

BIOL 4523 ENVIRONMENTAL MICROBIOLOGY
Lecture and laboratory instruction on microbe-microbe and microbe-environment interactions. Areas of study will be air, water, wastes, soil and special environments such as industrial and domestic wastes. Two hours of lecture and two hours of laboratory per week. Corequisite: BIOL 4523L. Prerequisite: BIOL 4355. SE

BIOL 4604 TERRESTRIAL ECOLOGY
A study of terrestrial biomes with emphasis on interactions among organisms and the interactions between organisms and their environment that affect distribution and abundance. This course fulfills the plant and field course requirements for the B.S. Biological Sciences degree. Corequisite: BIOL 4604L. Prerequisites: BIOL 1054 and BIOL 1254 and junior, senior, or graduate standing. SO

BIOL 4622 ECONOMICALLY IMPORTANT PLANTS
A survey of plants of economic importance throughout the world. Essential food, drug, textile, and industrially valuable plants will be discussed in relationship to world economy and human population needs. Lecture only. Prerequisites: BIOL 1054 and 1254. FO

BIOL 4703 INFECTIOUS DISEASE EPIDEMIOLOGY
A study of the distribution patterns of infectious diseases within and across populations. Includes topics in population studies, disease and injury determinants, behavioral factors, and environmental factors. Lecture only. Prerequisite: BIOL 4355. D

BIOL 4853 EVOLUTION
An overview of evolution including historical development, underpinning evidence, and current science and applications. Prerequisites: BIOL 1054 and BIOL 1254. BIOL 3253 recommended. SO

BIOL 4864 HUMAN GENETICS
A study of human genetics that focuses on human molecular genetics including genetic factors causing diseases; changes in gene expression during development, differentiation, and pathogenesis; recombinant DNA; gene therapy; clinical genetics; genetic epidemiology; immunogenetics; cytogenetics; and genetics of specific disorders and diseases. Enrollment is by signature only. Corequisite: BIOL 4864L. Prerequisites: BIOL 3053, BIOL 3152, and BIOL 3253 and junior, senior, or graduate standing. D

BIOL 4901 BIOLOGICAL SCIENCES CAPSTONE
Students will demonstrate their knowledge and skills in biological sciences by completing and presenting original research or by searching the biological literature and presenting a review paper on a topic chosen from a designated course completed the previous semester. Students must submit a plan for completion when enrolling in the course. Enrollment requires permission of the instructor. Prerequisites: Biological sciences major and senior standing. F, S
BIOLOGICAL AND COMPARATIVE PHYSIOLOGY
A study of the principles of comparative animal physiology with emphases on morphological, physiological, and behavioral adaptations. Examples taken from humans, familiar animals, and uncommon animals that represent elegant solutions to survival problems and illustrate physiological concepts. The course covers the major organ systems of the body and their interactions with each other and the environment presented in an evolutionary and ecological context. Enrollment by permission of the instructor. Corequisite: BIOL 4914L. Prerequisites: BIOL 1054 and BIOL 1254 and CHEM 1303 and CHEM 1352 and junior or senior standing. F

BIOLOGICAL AND COMPARATIVE PHYSIOLOGY
A study of the cellular and molecular basis for the structure and organization of the cell with emphases on control of the cell cycle, transport of information and materials, and signaling. The laboratory emphasizes cellular and molecular tools and techniques and includes research and presentation of a cell/molecular biology question. Permission of the instructor is required. Corequisite: BIOL 4935L. Prerequisites: BIOL 1054 and BIOL 1254 and junior, senior or graduate standing. FE

BIOLOGICAL AND COMPARATIVE PHYSIOLOGY
A study of the molecular, structural, physiologic, cognitive, and behavioral aspects of the brain and nervous system. Includes molecular and cellular neuroscience, brain science, anatomy and physiology of the central nervous system, molecular and biochemical basis for information processing, and applications to clinical sciences and biomedical engineering. Corequisite: BIOL 4944L. Prerequisite: Junior, senior, or graduate standing. FO

BIOLOGICAL AND COMPARATIVE PHYSIOLOGY
A study of the microscopic and functional aspects of normal animal tissues. Corequisite: BIOL 4974L. Prerequisites: BIOL 1054 and 1254. Recommended: BIOL 3053 and/or 3704. D

Biology Credit for Summer Activities
Students who attend summer courses at the Gulf Coast Marine Research Laboratory (with which SWOSU is affiliated), the University of Oklahoma Biological Station, or other institutions of higher education, may be able to use those courses toward their biology degree. Likewise, students may earn college credit for some summer research positions and internships. Students who are considering such courses should meet with the Department Chair, prior to enrolling, to determine if these courses may be used toward their degree.

Medical Laboratory Science Clinical Courses
(Taught only at MLS accredited hospitals)

MLS 4117 CLINICAL MICROBIOLOGY
Lecture and supervised laboratory instruction in pathogenic bacteria, fungi, parasites, viruses, and antimicrobial susceptibility testing with emphasis on clinical decisions and medical significance. Includes quality control, computer application, instrumentation, quality assurance/improvement, and safety regulations.

MLS 4125 CLINICAL CHEMISTRY I
Lecture and supervised laboratory instruction in biochemistry methodology and clinical microscopy with emphasis on clinical decisions and medical significance. Includes quality control, computer application, instrumentation, quality assurance/improvement and safety regulations.

MLS 4236 CLINICAL HEMATOLOGY
Lecture and supervised laboratory instruction in routine and special hematology studies correlating hematological findings with medical significance including quality control, computer applications, instrumentation, quality assurance/improvement, and safety regulations.

MLS 4246 CLINICAL IMMUNOLOGY/IMMUNOHEMATOLOGY
Lecture on immunologic (antigen-antibodies) responses, serological methodology and theory of immunohematology as applied to blood groups, types, compatibility testing, and blood components. Supervised instruction in immunology and immunohematology methodology with emphasis on clinical decisions and medical significance; including quality control, computer application, instrumentation, quality assurance/improvement, safety and governmental regulations.

MLS 4325 CLINICAL CHEMISTRY II
Lecture and supervised laboratory instruction in biochemistry methodology with emphasis on clinical decisions and medical significance. Includes quality control, computer application, instrumentation, lab mathematics, quality assurance/improvement, and safety regulations.

MLS 4351 TOPICS IN MEDICAL LABORATORY SCIENCE
Lectures on principles and practices of the Medical Laboratory Scientist including management education (health care delivery system, ethics, professionalism, communication skills, human resources, and financial management), performance improvement, education methodology, laboratory information systems, safety and governmental regulations, and research design/special projects.

DEPARTMENT OF CHEMISTRY AND PHYSICS

ASTRO 1904 ASTRONOMY
An introductory course stressing basic science and how we arrived at our present knowledge. Topics include: history of astronomy; planets; meteorites; comets; asteroids; birth, life, and death of stars; galaxies; quasars; black holes; and cosmology. Several night viewing sessions will be arranged. F, S, SU

ASTRO 4012 SEMINAR IN ASTRONOMY
Study of topics of current interest such as extraterrestrial life, colonizing space, astrology, Bermuda Triangle, black holes, UFO’s, etc. Special attention is given to the questions asked of science teachers. D

CHEM 1004 GENERAL CHEMISTRY
A survey course in general chemistry designed for students requiring a single chemistry course (of 4 hours or fewer) in their major or for students requiring a preparatory course for CHEM 1203 and CHEM 1252. General Chemistry I. Topics include measurements, atomic theory, bonding, naming/formulas of inorganic compounds, properties of solids/liquids/gases, energy (primarily light/heat), reactions (including balancing equations, stoichiometry, equilibrium), solutions/concentrations, and acids/bases. The laboratory is designed to fortify the understanding of the major topics of the course. No prerequisites although a minimal algebra background is helpful. F, S

CHEM 1203 GENERAL CHEMISTRY I (LECTURE)
An introduction to chemical principles for students intending to major in science areas. Topics include concentration, stoichiometry, thermodynamics, atomic and molecular theory, properties of gases, liquids, and solids. Prerequisite: Completion of or concurrent enrollment in MATH 1513. F, S, SU
CHEM 1252 GENERAL CHEMISTRY I (LAB)
Laboratory for General Chemistry I. Experimental investigation of those topics introduced in 1203 and introduction to visible spectroscopy. Corequisite: CHEM 1203. F, S, SU

CHEM 1303 GENERAL CHEMISTRY II (LECTURE)
A continuation of chemical principles for students intending to major in science areas. Topics include kinetics, equilibria, acids and bases, second law, electrochemistry, and nuclear chemistry. Prerequisites: CHEM 1203 and completion of or concurrent enrollment in CHEM 1252. F, S, SU

CHEM 1352 GENERAL CHEMISTRY II (LAB)
Laboratory for General Chemistry II. Experimental investigation of those topics introduced in CHEM 1303. Prerequisites: CHEM 1203 and CHEM 1252. Corequisite: CHEM 1303. F, S, SU

CHEM 2001-4 INDIVIDUAL STUDY IN CHEMISTRY (TOPIC)
Specified topic in Chemistry. 1-4 hours credit.

CHEM 2011-4 SEMINAR IN CHEMISTRY (TOPIC)
Study of specified topic in chemistry for undergraduate students. Credit one to four semester hours. D

CHEM 2112 STRUCTURE AND BONDING
A study of molecular structure and bonding beyond what is offered in General Chemistry courses. Topics covered include an overview of modern atomic theory, symmetry and group theory applications to chemistry, molecular orbital theory, advanced acid-base theories, descriptive inorganic chemistry, and nuclear chemistry. Prerequisite: CHEM 1303. S

CHEM 2114 ORGANIC/BIOCHEMISTRY
A survey course covering sufficient organic chemistry to support eight weeks of biochemistry material. The course is designed for Medical Technology majors, Environmental Technology majors, and Chemistry minors. The laboratory component of the course is designed to fortify the understanding of the major topics of the course. Prerequisites: CHEM 1303 and CHEM 1352. SO

CHEM 2122 PROBLEM SOLVING IN ORGANIC CHEMISTRY II
A recitation-style approach to solving problems relating to topics encountered in Organic Chemistry II. Corequisite: CHEM 4113 or CHEM 4115. Prerequisite: CHEM 3013 or CHEM 3015. D

CHEM 2612 PRINCIPLES OF LABORATORY SAFETY
Introduction to the principles of laboratory safety focused on recognizing, assessing and minimizing the risks of hazards, and preparing for emergencies. Topics include the planning of experiments and evaluations of their physical and chemical hazards, managing chemicals and waste, safe use of laboratory and personal protective equipment, emergency response to chemical spills and fires, hazard communication, safety ethics and government regulation. In addition to Chemistry, this course may be useful to Physics, Biology, Engineering Technology, Secondary Education, Health Sciences and other majors who may be working in a laboratory setting. Prerequisite: CHEM 3013 or permission of instructor. S

CHEM 3013 ORGANIC CHEMISTRY I
An introduction to organic chemistry. Emphasis is placed on structure and reaction mechanisms. The chemistry of hydrocarbons is developed in detail. Prerequisites: CHEM 1303 and CHEM 1352. F, S, SU

CHEM 3015 ORGANIC CHEMISTRY I
Same as 3013 except that theoretical principles are presented in more detail. The accompanying laboratory meets six hours each week and the instruction in modern instrumental techniques is more rigorous than in CHEM 3111. The course is designed for students majoring in chemistry and other science areas. Prerequisites: CHEM 1303 and CHEM 1352. F

CHEM 3111 ORGANIC CHEMISTRY I LABORATORY
Methods of separation of mixtures and determination of the physical and structural properties of compounds are emphasized. Spectroscopy and chromatography are introduced with some applications. Prerequisites: CHEM 1303 and CHEM 1352. Corequisite: CHEM 3013. F, S, SU

CHEM 3124 QUANTITATIVE ANALYSIS
An introductory course in analytical chemistry which includes sampling, separations (precipitation, solvent extraction, ion exchange, chromatography), and determinations (by titrimetry, gravimetry, colorimetry, and potentiometry techniques). Prerequisites: CHEM 1303 and CHEM 1352. F

CHEM 3211 INORGANIC CHEMISTRY LAB
The lab meets three hours each week and focuses on the synthesis (including inert atmosphere and vacuum line techniques), purification (including chromatography and crystallization techniques), and characterization (including magnetic susceptibility, conductivity, UV-Vis, IR, NMR, X-ray diffraction, and mass spectra) of inorganic ligands and complexes. Corequisite: CHEM 3233. Prerequisites: CHEM 3111 or CHEM 3015. FO

CHEM 3233 INORGANIC CHEMISTRY
A study of advanced principles of inorganic chemistry. Major topics include: 1) Structure and bonding theories; 2) Transition metal coordination chemistry, and 3) Organometallic chemistry. Prerequisite: CHEM 3013 & CHEM 3111 or CHEM 3015. FO

CHEM 3244 ENVIRONMENTAL CHEMISTRY
Lecture, lab, and field course designed to provide broad based general knowledge of environmental chemistry, biology, and geology, especially including chemistry dealing with origins, transport, reactions, effects, and fates of chemical species in the water, air, soil and living environments. Laboratory will include a field component incorporating sampling techniques and methods of analysis. Prerequisites: CHEM 4113 or CHEM 4115 or CHEM 2114 or by consent of instructor. SO

CHEM 3343 PHYSICAL CHEMISTRY I
A fundamental course in physical chemistry for students majoring in chemistry and related fields. Topics include gas laws, kinetic molecular theory, classical thermodynamics, solutions, kinetics, equilibrium, and electrochemistry and an introduction to statistical thermodynamics. Prerequisites: CHEM 1303, PHY 1044 or PHY 2145 (preferred), and MATH 2823 or concurrent or prior enrollment in MATH 2834, or permission of instructor. FE

CHEM 3901 SEMINAR IN CHEMISTRY I (CAPSTONE)
Course focus is on skills required for a successful professional career post graduation. Non-academic topics will include: selection and application to graduate programs, job search strategies, professional resume preparation and interview skills. Development of pertinent professional attitudes and professional and scientific ethics will be discussed. The second half of the course will cover methods of chemical literature searching and how to summarize the primary research publications in preparation for Seminar in Chemistry II. Prerequisites: Junior/Senior standing or permission of chair. F
CHEM 4001-4 CHEMISTRY RESEARCH
Individual students may arrange for a variety of laboratory research studies. Credit one to four hours. D

CHEM 4011-4 SEMINAR IN CHEMISTRY (TOPIC)
Credit is assigned for the completion of directed reading programs, seminars and similar activities. Credit one to four semester hours. Prerequisite: Departmental approval. D

CHEM 4021 ORGANIC CHEMISTRY II LABORATORY
Preparation and identification of organic compounds are emphasized. Spectroscopic and chromatographic techniques are utilized. Prerequisites: CHEM 3013 and CHEM 3111 or CHEM 3015. Corequisite: CHEM 4113. F, S, SU

CHEM 4113 ORGANIC CHEMISTRY II
A continuation of CHEM 3013. Preparations, properties, and reactions of organic functional groups with emphasis on biomolecules. Prerequisites: CHEM 3013 and CHEM 3111. F, S, SU

CHEM 4115 ORGANIC CHEMISTRY II
A continuation of CHEM 3015. Preparation, properties, and reactions of organic functional groups. The laboratory meets six hours each week and emphasizes the preparation and identification of organic compounds. Prerequisite: CHEM 3015 or departmental approval. S

CHEM 4124 BIOCHEMISTRY
An introductory course involving the study of the physical and chemical properties of compounds associated with the chemistry of life processes and an introduction to metabolism, especially carbohydrate degradation and nucleic acid and protein biosyntheses. Prerequisite: Eight hours of organic chemistry or permission of instructor. F, S

CHEM 4223 POLYMER CHEMISTRY
The synthesis, testing and industrial application of intermediate and high molecular weight polymers. Includes three hours of laboratory per week. Prerequisites: CHEM 4113 and CHEM 4021 or CHEM 4115 and concurrent or prior enrollment in CHEM 4344. D

CHEM 4234 INSTRUMENTAL ANALYSIS
Theory and practice in the use of instrumental methods utilized in chemical analysis. Prerequisites: CHEM 3124, CHEM 4454, or departmental approval. SO

CHEM 4254 INDUSTRIAL CHEMISTRY AND ENVIRONMENTAL REGULATIONS
Critical examination of chemical innovation and emerging technologies in chemical production, use, and disposal for the protection of worker safety, public health, and the environment, including pollution prevention and remediation strategies, emissions monitoring and regulatory compliance, waste treatment, and resource conservation and recovery. Prerequisites: CHEM 4113 or CHEM 4115 or CHEM 2114. SE

CHEM 4455 PHYSICAL CHEMISTRY II
A continuation of CHEM 3343. Topics include quantum mechanics and its role in chemistry and the theoretical and experimental aspects of atomic and molecular structure, chemical bonding, spectroscopy, and photochemistry. Includes 3 hours of lecture and 6 hours of laboratory instruction. Corequisite: CHEM 4455L. Prerequisite: CHEM 3124 and CHEM 3343 with a “C” or better and concurrent or prior enrollment in MATH 3834. SO

CHEM 4554 ADVANCED ORGANIC SPECTROSCOPY
In-depth study of instrumental techniques including nuclear magnetic resonance, infrared, ultraviolet/visible, and mass spectroscopy to identify or verify organic molecules of moderately complex structure. Efficient interpretation of structure is emphasized by establishing features such as overall carbon framework, presence and location of functional groups, regiochemistry of substituents, and stereochemistry of chiral centers. Prerequisites: CHEM 4115 and CHEM 4234 or departmental permission. D

CHEM 4673 ADVANCED METABOLISM
Study of metabolic reactions and biochemical processes of living organisms. An understanding of enzymes, utilization or energy; synthesis of compounds, interrelationships among various metabolic pathways, hormone function, and metabolic regulation is developed. Prerequisite: CHEM 4124. D

CHEM 4900 SEMINAR ATTENDANCE
A non-credit course required each semester for all chemistry majors. The course provides seminars, workshops and presentations by visiting and in-house faculty and staff, graduate school and industry contacts, and student presenters. F, S

CHEM 4901 SENIOR SEMINAR IN CHEMISTRY II (CAPSTONE)
Each student will be required to select, conduct a literature search, write a review paper, and present a seminar on a current chemistry topic of interest. Prerequisite: CHEM 3901. S

GEOL 1934 PHYSICAL GEOLOGY
Introduction to earth science; earth in the universe, seafloor spreading and continental drift, the geomagnetic field, earthquakes and landform development; laboratory study of minerals and rocks, topographic maps, stereo-photographs and landforms. S

PHY 1044 BASIC PHYSICS I
Lecture and laboratory study of mechanics, wave motion, and heat; non-calculus survey course for students in natural science and health sciences; the laboratory component will provide a forum for the student to perform experiments related to the lecture material. Prerequisite: MATH 1513. F

PHY 1054 BASIC PHYSICS II
Lecture and laboratory study of electricity and magnetism, optics, and modern physics; the laboratory component will provide a forum for the student to perform experiments relating to the lecture material. Prerequisites: PHY 1044 or consent of instructor and MATH 1513. S

PHY 1063 GENERAL PHYSICS
Lecture study of motion, thermodynamics, sound and hearing, optics and vision, electricity and magnetism, and radiation; one semester survey with emphasis on biological applications of physics. Prerequisite: MATH 1513 or MATH 1613 or MATH 2823. F, S, SU

PHY 1072 INTRODUCTORY ELECTRONICS
Lecture and laboratory study of simple DC, AC, and nonlinear circuits; emphasis on basic electronic components and instrumentation including meters, oscilloscopes, and function generators. D

PHY 2011 SEMINAR IN PHYSICS
Group study on specified topic in Physics for undergraduate students. Credit one to four semester hours.

PHY 2021 INTRODUCTION TO ENGINEERING PHYSICS
A survey of the fields of engineering, engineering ethics, essential skills including communication and spreadsheets, and the basic physics that forms the core of engineering including kinetics, dynamics, statics, heat, materials, and energy. F
PHY 2145 GENERAL PHYSICS I
Study of mechanics, thermodynamics and wave motion including: Statics, dynamics, fluids, elasticity, heat, first and second laws of thermodynamics. Harmonic motion and sound; includes one laboratory per week. The laboratory component will provide "hands-on" experience of physical principles addressed during the lecture part of this course. Students will become familiar with laboratory equipment, procedures, and the scientific method. For engineering, physics, chemistry and mathematics students. Corequisite: MATH 1834. S

PHY 2155 GENERAL PHYSICS II
Study of electrostatics, electric circuits, magnetism, electromagnetic fields and optics; includes one laboratory per week. The laboratory component of the course consists of measurements, observation and comparison of measured values to the accepted theoretical or measured values. Prerequisites: PHY 2145 and concurrent enrollment in MATH 2834. F

PHY 2203 RIGID BODY MECHANICS
Study of statics, force systems, equilibrium, structures, distributed forces, friction, kinematics. Prerequisites: PHY 2145 and concurrent enrollment in MATH 2834. F

PHY 2213 STRENGTH OF MATERIALS
Study of mechanical properties of stressed materials; elastic and plastic deformations of beams, columns, and shafts; axial, transverse and torsion loadings; and temperature effects on materials. Prerequisites: PHY 2145 or PHY 2203 or consent of instructor. S

PHY 3013 MATERIALS SCIENCE
An introductory, interdisciplinary course about the fundamental properties of solid materials. Topics include: atomic and crystalline structure, diffusivity, imperfections, mechanical testing, deformation, hardening techniques; electrical magnetic, optical, thermal, corrosive and wear properties. Materials discussed include ferrous and nonferrous alloys, ceramics, polymers, and composites. Prerequisites: PHY 1054, PHY 1064, PHY 2155, and CHEM 1203, or consent of the instructor. D

PHY 3112 EXPERIMENTAL TECHNIQUES
Study of the techniques and devices used in experimental physics including lasers, vacuum systems, temperature measurements, photographic emulsions, spectrometers and particle detectors; procedures of data analysis. Prerequisites: PHY 2155 and MATH 2834, FO

PHY 3311 MODERN PHYSICS LABORATORY
The topics of spatial relativity, atomic and molecular physics, solid state physics, statistical physics, and nuclear physics are introduced along with engineering applications. Prerequisite: PHY 2155. Corequisite: MATH 3834. S

PHY 3403 MODERN PHYSICS FOR ENGINEERS
The topics of spatial relativity, atomic and molecular physics, solid state physics, statistical physics, and nuclear physics are introduced along with engineering applications. Prerequisite: PHY 2155. Corequisite: MATH 3834. S

PHY 3413 ANALOG ELECTRONICS
Lecture and laboratory study of basic network and semiconductor theory; Kirchhoff, Thvenin, and Norton Theorems, characteristics of solid-state components and their application in power supplies, amplifiers, oscillators, and operational amplifier. Prerequisites: PHY 1072, PHY 2155, and MATH 3834 or instructor approval. D

PHY 3424 OPTICS
Lecture and laboratory study of geometrical and physical optics, including lenses, mirrors, interference, polarization, diffraction, dispersion and quantum optics. Prerequisites: PHY 2155 and MATH 3834. Corequisite: 3424L. SO

PHY 3501 PHYSICS SEMINAR (TOPIC)
Course for students to gain experience in reporting a scientific and technical topic to peers; an oral and a written report on a subject of current interest in physics is required. Prerequisite: 18 hours of physics or consent of instructor. SO

PHY 3544 DIGITAL ELECTRONICS
Lecture and laboratory study of logic gates and circuits; microprocessor programming and interfacing. Prerequisite: PHY 1054 or PHY 2155. D

PHY 3563 THERMODYNAMICS
Study of thermal physics including the zeroth, first and second laws of thermodynamics; enthalpy, entropy, kinetic theory, Maxwell-Boltzmann distribution, specific heats, simple transport phenomena, and power cycle applications. Prerequisites: PHY 2155 and MATH 3834. SO

PHY 3573 HEAT TRANSFER
Study of conduction, convection and radiation heat transfer; properties of materials related to heat transfer; control volume analysis; laminar and turbulent fluid flow; Newton’s law of cooling; boiling and cooling; and blackbody radiation. Prerequisites: PHY 2155 and MATH 3834. D

PHY 3603 MECHANICS I
Study of dynamics; conservative motion, central force problems, gravitation, harmonic oscillators, systems of particles, small vibrations, rigid-body dynamics, accelerated reference frames and Lagrange equations. Prerequisites: PHY 2155 and concurrent enrollment in MATH 4213. SE

PHY 3633 FLUID MECHANICS
Study of fluid properties, compressible and incompressible fluids and aerodynamics, fluid statics and dynamics including viscous effects, dimensional analysis, and fluid measurements. Prerequisites: PHY 2155 and concurrent enrollment in MATH 4213. D

PHY 4001-4 PHYSICS RESEARCH (TOPIC)
Individual research under direction of an individual faculty member on a topic of mutual interest; one to four semester hours credit; topic, credit, and arrangements to be decided prior to enrollment. Prerequisites: Consent of instructor and chair of department. D

PHY 4011-4 PHYSICS SEMINAR (TOPIC)
Formal study of a topic of current importance in physics or engineering which is not normally included in other courses; one to four semester hours credit. Prerequisites: Consent of instructor and chair of department. D

PHY 4644 ELECTRICITY & MAGNETISM I
Lecture and laboratory study of electrostatics including Coulomb and Gauss laws, dielectric materials, electrostatic energy, steady currents and magnetic fields, and electromagnetic induction. Prerequisites: PHY 2155 and MATH 4213. FE

PHY 4723 QUANTUM MECHANICS
An advanced course in modern physics including applications of the Schrödinger equation, spin and magnetic interactions, complex atoms, molecules, and quantum statistical physics and its applications. Prerequisite: PHY 3403. Corequisite: MATH 4213 or consent of the instructor. FE
SCI 1501 CONCEPTS OF PHYSICAL SCIENCE LABORATORY
The lab meets two hours each week and focuses on the importance of the laboratory experiment to the scientific method. Inquiry-oriented laboratory investigations of selected topics in the disciplines of astronomy, chemistry, geology, and physics introduced in SCI 1513 will be undertaken. Prerequisites: Completion of or concurrent enrollment in SCI 1513. S

SCI 1513 CONCEPTS OF PHYSICAL SCIENCE
A course designed to develop an awareness of the interrelationships between science and society. Readings and discussions on the “tactics and strategy” of science, with emphasis on the physical sciences. F, S

Science for Elementary Teachers

The following three courses (SCI 3114, SCI 3214, and SCI 3314) are designed to prepare elementary school teachers and CANNOT satisfy any program requirements other than Bachelors in Elementary Education, Bachelors in Special Education, or Masters in Elementary Education.

SCI 3114 BIOLOGICAL SCIENCE FOR ELEMENTARY TEACHERS
An inquiry-oriented course which presents selected biological concepts, including ecological relationships, that are relevant to the elementary school science curriculum. This course includes a laboratory. Prerequisite: SCI 3214. F, S

SCI 3214 PHYSICAL SCIENCE FOR ELEMENTARY TEACHERS
A general physical science course designed for the prospective elementary teacher. The content covers major concepts from the traditional disciplines of physics, chemistry, geology, and astronomy. A study of energy and environmental issues is also included. This course includes a laboratory. F, S

SCI 3314 GEOLOGICAL SCIENCE FOR ELEMENTARY TEACHERS
A general Earth science course covering major concepts of geology, environmental issues, and the relationship between science and society. This course is intended for elementary teachers. Inquiry-oriented laboratory investigations are included. This course includes a laboratory. Prerequisites: SCI 3114 and SCI 3214. F, S

SCI 4001-4 INDIVIDUAL STUDY IN SCIENCE
Specified topic in science. One to four credit hours. D

SCI 4011-4 SCIENCE SEMINAR (TOPIC)
Seminars of individual or group study are based on selected topics in science education. Credit one to four semester hours. Prerequisite: Senior college standing. D

SCI 4843 TEACHER’S COURSE IN SCIENCE
Methods, problems, and resources in teaching science in the secondary schools. Problems and topics in the middle school and high school are presented. Required for teacher certification in science areas. Prerequisite: Admission to Teacher Education Program. FO

DEPARTMENT OF LANGUAGE AND LITERATURE

English

ENGL 0123 FUNDAMENTALS OF ENGLISH
A course designed to provide remedial students an opportunity to increase their writing skills. Emphasis is placed on sentence construction, paragraph organization, sound thesis statements, and adequate support for them. Zero credit, this course is not counted as a part of a major or minor and it does not count towards graduation. F, S, SU

ENGL 1113 ENGLISH COMPOSITION I
Training for effective communicative skills with emphasis on writing as required for successful college study. F, S, SU

ENGL 1213 ENGLISH COMPOSITION II
Training for skills in communication, as in ENGL 1113, but a higher level. Research and argument emphasized. Prerequisite: ENGL 1113. F, S, SU

ENGL 2000 ENGLISH PROFICIENCY PROGRAM
A writing examination required of all students who earn a “D” in ENGL 1213 to verify their writing proficiency. Prerequisites: ENGL 1113 and ENGL 1213. F, S, SU

ENGL 3013 WRITING: THEORY AND PRACTICE
This course is an entry point for the major in English Education; it must be completed before continuing with further study in the major. A course designed to introduce the history and background of composition as an aspect of English studies. The course provides a basic background for using composition theory in the teaching of writing, but is not limited to pedagogical concerns. The course is focused on developing an understanding of the writing process and practicing writing skills using techniques derived from current composition theory. Prerequisite: ENGL 1213. S

ENGL 3113 CONTEMPORARY FICTION
This course is a study of short American fiction, beginning with the 1950’s and progressing to the present. Students will read selected short stories, with particular focus on characterization, structure, theme, and language. Prerequisite: ENGL 1213. F

ENGL 3123 CONTEMPORARY POETRY
This course is designed to lead students to a comfortable acquaintance with American poetry from the 1950’s to poetry currently appearing in magazines. Formal poetry, free verse, and prose poetry will be studied. Prerequisite: ENGL 1213. SO

ENGL 3473 CREATIVE WRITING OF FICTION I
This workshop is a training ground for short story writers. The student’s work will be discussed critically. Exercises will be assigned. Full participation, both as writer and critic, is expected. S

ENGL 3483 BEGINNING CREATIVE WRITING OF POETRY I
This workshop is a training ground for poets. The student’s work will be discussed critically. Exercises will be assigned. Full participation, both as writer and critic, is expected. Prerequisite: ENGL 1213. F

ENGL 3603 ENGLISH GRAMMAR
A study of traditional, descriptive English grammar, including structure, terms and some basics of usage. Designed for students interested in developing a better command of the English language. Prerequisite: ENGL 1213. S

ENGL 3653 WRITING IN THE DISCIPLINES
“Good” writing is a slippery concept, as many students realize when they try to transfer what they learned in one class to writing assignments in another. Different disciplines value certain forms of writing over others because those forms help the members of the discipline communicate ideas more effectively. In this class, students learn to analyze the discourse of various disciplines and discern how the needs of the
discourse communities shape their writing. **Prerequisites:** ENGL 1113 and ENGL 1213, SE

**ENGL 3663 CREATIVE NONFICTION I**

This writing-intensive workshop course introduces students to producing their own works of creative nonfiction as well as read and analyze the nonfiction of professional writers. Creative nonfiction includes the genres of personal essay, memoir and autobiography, travel writing, nature and science writing, and literary journalism. The course will address one or more of these genres. Students will utilize reportage, reflection, research, and techniques commonly used in fiction to turn their experiences and observations into stories and essays that are both truthful and artful. **Prerequisite:** ENGL 1113 and ENGL 1213, FO

**ENGL 4001-4 INDIVIDUAL STUDY IN ENGLISH (TOPIC)**

Individual study of specified topic for undergraduate students. Credit one to four semester hours. **Prerequisite:** ENGL 1213, D

**ENGL 4011-4 SEMINAR IN ENGLISH (TOPIC)**

Group study of specified topic for undergraduate students. Credit one to four semester hours. **Prerequisite:** ENGL 1213, D

**ENGL 4423 INTRODUCTION TO LINGUISTICS**

An introductory overview of linguistics with particular attention to phonology, morphology, syntax, semantics, language acquisition, and the history of the English language. Required for majors in the English Education degree. **Prerequisite:** ENGL 1213, F

**ENGL 4453 ADVANCED COMPOSITION**

This advanced writing course presents a variety of expository and persuasive techniques beyond the basic level of the 1113 and 1213 English Composition courses. Focusing on the expository essay, an emphasis on the rhetorical aspects of writing, critical thinking, the writing process, research, and argumentation, the course encourages students to concentrate on development of their own styles and increase the precision of their written communication skills. Further study and appreciation of the argumentative/persuasive essay’s structure in implemented by reading and writing. Topics may vary. **Prerequisite:** ENGL 1213, FE

**ENGL 4473 CREATIVE WRITING OF POETRY II**

This workshop is for poets seeking to create work of publishable quality. Publishing format is studied. Conferences with the instructor will be utilized. Group criticism will continue with participation by all members of the workshop. **Prerequisite:** ENGL 1213, SE

**ENGL 4483 CREATIVE WRITING OF FICTION II**

This course is an introduction to the process of writing short fiction with emphasis on the techniques of discovery, invention, organization, and style. The student will gain a better understanding of implementation of plot, character, setting, theme, and tone through examination of both model fiction from contemporary writers and the student’s own writing. **Prerequisite:** ENGL 1213, FE

**ENGL 4663 CREATIVE NONFICTION II**

This writing-intensive workshop course introduces students to producing their own works of creative nonfiction as well as read and analyze the nonfiction of professional writers. Creative nonfiction includes the genres of personal essay, memoir and autobiography, travel writing, nature and science writing, and literary journalism. The course will address one or more of these genres. Students will utilize reportage, reflection, research, and techniques commonly used in fiction to turn their experiences and observations into stories and essay that are both truthful and artful. **Prerequisite:** ENGL 1213, SO

**ENGL 4675 TEACHING OF HIGH SCHOOL ENGLISH**

Problems and methods for teachers in both junior and senior high school English classes. The course will emphasize teaching of language, literature, and composition, with emphasis on current trends as shown in recent textbooks, journal articles, experimental studies, and curriculum guides. **Prerequisite:** Admission to Teacher Education Program. **F**

**ENGL 4773 EDITING**

This course will introduce the principles of this media skill by covering the major elements of editing, among which are structural and line editing, proofreading, using reference books, understanding contracts and copyright, understanding production and design, and understanding the writer/editor relationship. **Prerequisite:** ENGL 1113 and ENGL 1213, SO

**ENGL 4882 ENGLISH SENIOR CAPSTONE**

This course is intended as a culminating experience for senior English majors. It will require seniors to integrate principles, theories, and methods learned in courses required throughout the major. Students creatively analyze, synthesize, and evaluate learned knowledge in projects and communicate the results of the projects effectively at a professional entry level by a method appropriate to the discipline.

**Foreign Language**

Courses in foreign languages provide students the ability to actively and productively participate in today’s interdependent world. Better understanding and appreciation of other languages and cultures allow the student to understand better his/her native language and culture. Knowledge and ability in a foreign language enhance any area of the College of Arts and Sciences and provide essential cultural and linguistic background for students in teacher education.

More than sufficient course work is offered for students who choose Spanish as a second teaching field or as a minor to enhance any major.

**American Sign Language**

**ASL 2163 AMERICAN SIGN LANGUAGE I**

This course is an introduction to American Sign Language, the language used by deaf people in the United States and most of Canada. This course will also provide introductory information on deaf culture, since a language cannot be separated from its culture. **Prerequisite:** LATIN 1054, S

**Italian**

**ITAL 1004 ELEMENTARY ITALIAN I**

A first semester elementary language course for students who have never studied Italian or who have had very little exposure to the language. Students will acquire elementary communication skills through a systematic introduction to the basic grammatical patterns and vocabulary of the Italian language. A cultural component ties into the grammatical content. Class work will emphasize development of the oral/aural skills, speaking and listening. Tape recordings will also be available for students to practice listening and speaking.

**ITAL 1104 ELEMENTARY ITALIAN II**

This is a continuation of ITAL 1004. The goal of this course is to improve proficiency in Italian in the four areas of communication: reading, writing, listening, and speaking. Grammar structures are learned not as an end, but as a means of acquiring proficiency. Real life learning experiences are fostered through the use of grounding of language acquisition through classes based on Italian culture and basic daily topics. **Prerequisite:** ITAL 1004.
Latin

LATIN 1054 ELEMENTARY LATIN I
Elementary course in Latin. Fundamentals of Latin with emphasis on vocabulary and structure of the language. F

LATIN 1154 ELEMENTARY LATIN II
Continuation of Latin I. Subjunctive mood, active and passive of all verbs, conditional clauses, fourth and fifth declensions are covered.

Spanish

SPAN 1054 ELEMENTARY SPANISH I
Fundamentals of grammar taught in order to acquire facility in all four language skills; reading, writing, speaking, and understanding spoken Spanish; limited introduction to Hispanic culture. F, S, SU

SPAN 1154 ELEMENTARY SPANISH II
This course is a continuation of SPAN 1054 and completes the basic grammar of Spanish; consideration of Hispanic cultural background. Prerequisite: SPAN 1054 or equivalent high school Spanish. F, S, SU

SPAN 2053 INTERMEDIATE SPANISH I
Review of Spanish grammar to allow a more thorough understanding of fundamentals of Spanish with reading, cultural background, conversation, and composition. Prerequisite: SPAN 1054, SPAN 1154, or permission. F

SPAN 2153 INTERMEDIATE SPANISH II
Discussions in Spanish based on poetry, short prose selections, literary and current events. Informal grammar presentations as required. Prerequisite: SPAN 2053 or equivalent. S

SPAN 3013 SPANISH FOR LAW ENFORCEMENT
Course designed to develop language skills with a focus on listening and speaking to provide vocabulary and conversational practice in realistic law-enforcement and/or emergency situations with emphasis on real-life vocabulary, Spanish-language media and public-service opportunities; planned and spontaneous activities augment course text. S

SPAN 3023 SPANISH FOR HEALTHCARE PROFESSIONALS
Course designed to develop language skills with a focus on listening and speaking to provide vocabulary and conversational practice in realistic healthcare, pharmacy and/or emergency situations with emphasis on real-life vocabulary. Spanish-language media and public-service opportunities; planned and spontaneous activities augment course text. S

SPAN 3153 SURVEY OF SPANISH LITERATURE TO 1800
History of Peninsular Spanish literature through the 18th Century. Outstanding selections from each literary period. Prerequisite: SPAN 2153. D

SPAN 3253 SURVEY OF SPANISH LITERATURE SINCE 1800
History of outstanding examples of Peninsular Spanish literature from beginning of the 19th century to present. Prerequisite: SPAN 2153. D

SPAN 3353 SPANISH AMERICAN LITERATURE
Survey of outstanding examples of poetry, short story, essay and selections of drama and the novel from the beginning until the present. Prerequisite: SPAN 2153 or equivalent. D

SPAN 3553 HISPANIC LIFE AND CULTURE
Readings in Spanish that demonstrate origins, development, and characteristics of Hispanic life and culture; reading speed and comprehension increased; conducted when possible in Spanish. Prerequisite: SPAN 1154. F

SPAN 3653 INTERMEDIATE SPANISH CONVERSATION
Course designed to increase vocabulary and conversational ability in realistic situations; planned and spontaneous activities using newspapers and magazines to augment course text; no English spoken; may take concurrently with SPAN 2153. Prerequisite: SPAN 2053. FE

SPAN 3753 READINGS IN SPANISH
Course designed to increase reading and overall proficiency in Spanish through study of selected literary genres from Spanish America and Spain. Various interactive methods used. Prerequisites: SPAN 2053 or equivalent. S

SPAN 3853 INTERMEDIATE SPANISH COMPOSITION AND GRAMMAR
Intensive writing course to increase Spanish writing proficiency. Review of grammatical forms that typically cause problems for intermediate learners. Interactive approach through a variety of methods. Prerequisite: SPAN 2053 or equivalent. S

SPAN 4012-3 SEMINAR IN SPANISH
Group study of specified topic for undergraduate students. Prerequisite: SPAN 2053 or equivalent. D

SPAN 4043 ADVANCED SPANISH CONVERSATION
Course designed to continue the development of language skills with a focus on listening and speaking to increase vocabulary and conversational ability in realistic situations for the new millennium with emphasis on Spanish-language media and public-service opportunities; planned and spontaneous activities augment course text; no English spoken. Prerequisite: SPAN 3653. FO

SPAN 4053 ADVANCED SPANISH COMPOSITION AND GRAMMAR
Intensive writing course to increase Spanish writing proficiency. Review of grammatical forms that typically cause problems for advanced student. Interactive methods used. Prerequisite: SPAN 3853. FO

SPAN 4373 HISPANIC LITERATURE
Study of Peninsular Spanish and Latin American literature from its beginnings to the present with readings or representative texts. Readings and assignments are mostly in Spanish. Prerequisite: SPAN 3653 and SPAN 3753. F

SPAN 4473 HISPANIC AMERICAN WRITERS
Students survey Hispanic American writers, life and culture from their origins to modern times. Readings and assignments are mostly in Spanish with representative texts from original works. Students engage in advanced topics of cultural significance. Prerequisite: SPAN 3653 and SPAN 3753. SE

SPAN 4551-4 STUDIES IN SPANISH ABROAD/INTERNSHIP
Immersion experience in Spanish-speaking culture with home-stay family whenever possible. Varying lengths of stay and location. Cross-cultural experiences require maturity, flexibility, and open-mindedness. Travel expenses, paid by student, may vary. Alternative is internship with native speakers dealing with selected projects. Approval required. D

SPAN 4570 SENIOR SPANISH CAPSTONE
Students review and refine listening, speaking, reading, and writing skills in the Spanish language while surveying Hispanic contributions of literary, artistic and international significance. Emphasis on preparedness to enter the work place. S
SPAN 4923 TEACHERS COURSE IN WORLD LANGUAGES
Course designed to give the basic principles and techniques for effective instruction in world languages. Prerequisite: SPAN 1054 or equivalent. SO

LIT 2333 INTRODUCTION TO FILM
A study of films as entertainment, cultural force, and art form. This course consists of viewing, analyzing, and discussing numerous full-length commercial films. D

LIT 2413 INTRODUCTION TO LITERATURE
The study of short stories, poetry, and drama. F, S, SU

LIT 2833 SCIENCE FICTION
Reading and discussion of short stories and novels by such writers as Thomas More, H.G. Wells, Tolkien, Bradbury, Asimov, and Vonnegut. D

LIT 3023 LITERATURE: THEORY AND PRACTICE
This course is an entry point for the major in English Education: it must be completed before continuing with further study in the major. The course examines the purposes, origin, and methods of the discipline. Students will study literary examples from the five genres (fiction, poetry, drama, essay, and film) using a variety of critical and theoretical approaches. Additionally, students will learn to write both interpretive essays and research papers and will begin a writing portfolio. Lecture, discussion, peer review, practice in oral delivery of literature. Prerequisite: ENGL 1213 and LIT 2413. F

LIT 3033 WORLD MYTHOLOGY
In this course students will study the myths that human beings have used throughout history to explain their world, including the myths of Greece and Rome, the American Indians, The Norse, the Egyptians, the Mesopotamian, and the Eastern world. Students study the common features of these stories and come to understand how these classic stories reflect and affect our own history, psychology, literature, and religion. Prerequisite: ENGL 1213, FO

LIT 3113 EARLY WORLD LITERATURE
A survey of world literature from ancient literature through the Renaissance. Prerequisite: ENGL 1213 and LIT 2413. SE

LIT 3223 ROMANTIC MOVEMENT
History of the Romantic Movement; prose and poetry of the period with particular attention to the works of Wordsworth, Coleridge, Byron, Shelley, and Keats. D

LIT 3223 MODERN VOICES IN AMERICAN LITERATURE
A survey of American literature from the Civil War to the present. Prerequisite: ENGL 1213, S

LIT 3333 SHAKESPEARE IN CONTEXT
Students will study Shakespeare’s plays in the context of his times and read representative works by Shakespeare and by his contemporaries. Two theoretical approaches underpin the course design: new historicism and formalism. Drama and cultural history share importance in understanding the world that produced an unparalleled theatrical achievement. Lecture; discussion; interpretive papers; informal writing; research. Prerequisite: ENGL 1213 and LIT 2413. SO

LIT 3343 WORLD FOLK LITERATURE
Students in this class will gain a greater appreciation and understanding of society’s self-definition through folklore phenomena such as orally or imitatively transmitted literature (proverbs, tall tales, urban legends, American Indian myths, cowboy poetry, fairy tales, jokes, folk songs), material culture (prison art, whimsies, quilts) and customs (superstitions). They will explore the characteristics and relationships between literary and folk genres, themes and motifs and study the interplay of folkloric thinking and formal literary expression in texts of all kinds. Prerequisite: ENGL 1213 and LIT 2413. SO

LIT 3443 MIDDLE ENGLISH/CHAUCER
A study of the language and the literature of thirteenth and fourteenth century England with emphasis on Chaucer. D

LIT 3453 AGE OF REASON
A study of British works and authors of approximately the first half of the eighteenth century. Attention is also given to the social, political, and philosophical influences of the period. D

LIT 3463 19TH CENTURY AMERICAN REALISM
A course dealing with the broad outlines of the Age of Realism in American literature with special emphasis on the contributions of the three great realists: Mark Twain, William Dean Howells, and Henry James. D

LIT 3493 MODERN DRAMA
Reading and study of American, British, and European plays since Ibsen, with emphasis on the social and political backgrounds, dramatic structure, and literary trends from nationalism to absurdism. D

LIT 3513 LITERATURE OF THE AMERICAN WEST
Selected readings in novels, short stories, poetry, criticism and other works by writers of the Trans-Mississippi frontier and far West; emphasis on historical and cultural interpretations since 1890. D

LIT 3523 VICTORIAN POETRY
A study of the major poets of the Victorian era and of the conditions which shaped their work. Emphasis upon Tennyson, Browning, Arnold, Hardy, and Hopkins. D

LIT 3533 BRITISH RENAISSANCE DRAMA
A study of British theatre in the late 16th and early 17th centuries. Emphasis is on Kyd, Marlow, Jonson, Shakespeare, and the Jacobean. D

LIT 3543 LITERATURE OF THE SOUTH
Study of selected modern-day Southern writers, with emphasis on the economic, sociological, and political backgrounds reflected in their works. D

LIT 3613 AMERICAN ROMANTIC PERIOD
Readings in the American Romantic period, emphasizing selected works by Whitman, Thoreau, Hawthorne, and Melville. D

LIT 4001-4 INDIVIDUAL STUDY IN LITERATURE (TOPIC)
Individual study of specified topic for undergraduate students. Credit one to four semester hours.

LIT 4011-4 SEMINAR IN LITERATURE (TOPIC)
Group study of specified topic for undergraduate students. Credit one to four semester hours. D
LIT 4113 MODERN WORLD LITERATURE
A survey of world literature from neoclassicism to the present.
Prerequisite: ENGL 1213 and LIT 2413. FO

LIT 4123 BRITISH LITERATURE 1795-1950
A survey of English literature from the Victorian period to the present.
Prerequisite: ENGL 1213. S

LIT 4233 YOUNG ADULT LITERATURE
This course centers on traditional and innovative young adult literature in all genres, including film, graphic novels, and online literature. It prepares English Education students to design curriculum, deal with censorship issues and age appropriateness in making literature selections, and investigate the way the genre both shapes and reflects adolescent cultural experiences and challenges. Prerequisites: ENGL 1213 and LIT 2413. SE

LIT 4473 MODERN BRITISH AND AMERICAN POETRY
Poetry of the twentieth century. D

LIT 4533 ISSUES IN AMERICAN LITERATURE
In this course the student will apply close reading and critical analysis skills to American literature from the literature pre-dating European contact through the time of the Civil War, becoming familiar with key trends, movements, and figures, for example, Puritan life writing, Transcendentalism, and Ralph Waldo Emerson. Historical/cultural contexts for the works are stressed. Prerequisite: ENGL 1213. F

LIT 4593 DIVERSITY IN AMERICAN LITERATURE
This course in contemporary American diversity literature enables the student to analyze conflicts and tensions when cultures and ethnicities collide, while also discovering the richness of difference. It will consider works by representative American authors of Hispanic/Chicano, Black, Native American, Asian, Jewish, and other backgrounds. Prerequisite: ENGL 1213. F

LIT 4623 17TH CENTURY ENGLISH POETRY
Selected readings from the works of Jonson, Donne, and their followers, providing a background for the study of the poetry of Milton. D

LIT 4763 BRITISH LITERARY HERITAGE TO 1800
In this course the student will become familiar with the major genres, authors and works and with the historical context of British literature from its beginning to 1800. The course explores the developments in language, literature, and society. Writers studied include the Beowulf poet, Chaucer, Spencer, Marie de France, Shakespeare, Milton, Pope, and Johnson. Prerequisite: ENGL 1213. F

LIT 4883 WOMEN AND LITERATURE
This course will acquaint student with literature by women from the medieval to the present time and from all over the world, exploring issues these writers raise concerning the lives and art of women. The course will also study images of women in literary works by both men and women. Prerequisite: ENGL 1213. SE

LIT 4993 THE NOVEL
In this course students will read and study novels of a particular period or type. Focus will vary from semester to semester and range in period and nationality (for example, 18th Century British Novel, History of the Novel, Victorian Novel, or focus on a particular set of writers). Prerequisite: ENGL 1213. SO

Humanities

HUM 1103 INTRODUCTION TO HUMANITIES
An interdisciplinary, multi-perspective assessment of cultural, political, philosophical, and aesthetic factors critical to the formulation of values and the historical development of the individual and of society. Examines human creativity broadly, including music, painting, literature, theater, architecture, sculpture, and modern innovations such as photography and film. F, S, SU

Philosophy

PHILO 1453 INTRODUCTION TO PHILOSOPHY
A survey of major philosophers and their ideas, from ancient Greece to Rome, to Medieval Christian philosophers. Descartes and the debate over Rationalism and Empiricism, Kant and his followers, Marx, Utilitarianism, and the Existentialism of both Kierkegaard and Sartre. Attention to metaphysics, ontology, ethics, epistemology, axiology, and some logic. Primary emphasis on the Western tradition. F, S, SU

DEPARTMENT OF MATHEMATICS

MATH 0114 FUNDAMENTALS OF ALGEBRA I
A course in beginning algebra, including real-number arithmetic rules, solving linear equations, percents, graphs of lines, polynomial arithmetic, units and dimensions, and general problem solving strategies. Successful completion removes math deficiency for enrolling in MATH 1143 OR MATH 1153 and is preparation for MATH 0133. F, S, SU

MATH 0133 FUNDAMENTALS OF ALGEBRA II
A second course in algebra, including factoring polynomials, solving polynomial and rational equations, solving equations involving radicals and rational exponents, completing the square and the quadratic formula, quadratic and radical functions, and complex numbers. F, S, SU

MATH 1044 FOUNDATIONS OF MATHEMATICAL REASONING
A course designed to provide students with the skills and conceptual understanding to succeed in a college level statistics or quantitative literacy course. Topics include reading and interpreting quantitative information from a variety of real-world sources, and communicating quantitative results both in writing and orally using appropriate language, symbolism, data, and graphs. Successful completion removes math deficiency for enrolling in MATH 1143 or MATH 1153.

MATH 1143 MATH CONCEPTS
An introduction to mathematical ideas and their applications. Topics are chosen from set theory, logic, probability and statistics, number theory, financial mathematics and graph theory. F, S, SU

MATH 1153 MATH APPLICATIONS
A survey of applied mathematics. Topics are chosen from financial mathematics, game theory, probability, statistics, counting principles and combinatorics, optimization and linear programming, units and dimensional analysis. F, S

MATH 1513 COLLEGE ALGEBRA
A fundamental course including solutions of equations and inequalities, systems of equations, algebra of functions, polynomial functions, rational functions, exponential and logarithmic functions, matrices, and conic sections. Prerequisite: MATH-0133, Department approval, or placement by examination. F, S, SU
MATH 1613 COLLEGE TRIGONOMETRY
The basic course stressing trigonometric functions, periodicity, identities, and solution of triangles. Prerequisite: MATH 1513, departmental approval, or placement by examination. F, S, SU

MATH 1834 CALCULUS I
The first of a three-course sequence in analytical geometry and calculus. Limits, Continuity, differentiation, integration, applications. Prerequisites: MATH 1513 and MATH 1613 or equivalent, or placement by examination. F, S

MATH 2001-3 INDIVIDUAL STUDY IN MATHEMATICS
(TOPIC)
Independent study of a specific topic in mathematics for undergraduate students. Credit one to three semester hours. D

MATH 2823 APPLIED CALCULUS
A survey of calculus and its applications to business, life, and social sciences. Limits, beginning techniques of differentiation and integration, exponential and logarithmic functions, maxima, minima and partial differentiation. Prerequisite: MATH 1513. F, S, SU

MATH 2834 CALCULUS II
A continuation of Calculus I, Analytical Geometry and Calculus. Applications and techniques of integration, sequences, and series, conics, parametric equations, polar coordinates, and vectors. Prerequisite: MATH 1834. F, S

MATH 3113 FOUNDATIONS IN MATHEMATICS
An introduction to basic concepts upon which mathematics is founded. Logic, set theory, proof-writing techniques, equivalence relations, mappings. Prerequisite: MATH 2834 or departmental approval. F

MATH 3413 STATISTICAL METHODS
Beginning techniques for students with modest mathematical background. Emphasis on applications to the biological and physical sciences, business, and education. Prerequisite: MATH 1513. F, S, SU

MATH 3433 STATISTICS I
An introductory probability and statistics course. The binomial, hypergeometric, Poisson, normal, t-, and Chi-square distributions are studied. Other topics include hypothesis testing, linear regression, and analysis of variance. Some work with the statistical software packages. Applications are emphasized. Prerequisite: MATH 1513. S

MATH 3435 MATHEMATICAL STATISTICS
Classical probability theory, discrete and continuous random variables and their probability distributions, properties of expectation, moment generating functions, sampling distributions and the central limit theorem are some of the topics. Prerequisite: MATH 1513, S

MATH 3473 INTRODUCTION TO PROBABILITY
Basic concepts of discrete probability are discussed, such as counting techniques, independence, conditional probability, Bayes’ Rule, random variables, random walks, and Markov chains. Prerequisite: MATH 2834. SO

MATH 3533 TECHNOLOGY AND PROGRAMMING IN MATHEMATICS
This course will be an introduction to computers and calculators for students of mathematics. Topics will be selected from: uses of the internet for the study of mathematics, graphing calculators, computer software, and programming for solving mathematical problems. Prerequisite: MATH 1834. F

MATH 3553 NUMERICAL ANALYSIS
Derivation, evaluation, and application of numerical methods of applied mathematics. Computer programming solutions to roots of equations, difference and differential equations, numerical integration, and linear algebra problems. Prerequisite: MATH 2834 and any scientific programming language. D

MATH 3653 LINEAR ALGEBRA
An introductory course in vector spaces, matrices, determinants, characteristic roots, and applications. Prerequisite: MATH 2834 or departmental approval. S

MATH 3673 ELEMENTARY NUMBER THEORY
A study including primes and composites, number theoretic functions, Diophantine equations, congruence classes, and mathematical induction. Prerequisite: MATH 2834 or departmental approval. SE

MATH 3713 COLLEGE GEOMETRY
An axiomatic development of the essentials of Euclidean geometry and an introduction to non-Euclidean geometry. Content includes the foundations of Euclidean geometry (points, lines, angles, triangles, quadrilaterals, circles), parallelism in Euclidean geometry, transformations and isometries, and parallelism in non-Euclidean geometry (with the focus on hyperbolic geometry). Prerequisite: MATH 2834 or departmental approval. S

MATH 3834 CALCULUS III
Continuation of Calculus II. Vector-valued functions, partial differentiation, multiple integration, line integrals, surface integrals, Green’s Theorem, the Divergence Theorem, and Stokes’ Theorem. Prerequisite: MATH 2834 or equivalent. F, S

MATH 4001-4 INDIVIDUAL STUDY IN MATHEMATICS
(TOPIC)
Independent study of specific topic in mathematics for undergraduate students. Credit one to four semester hours. D

MATH 4011-4 INDIVIDUAL STUDY IN MATHEMATICS
(TOPIC)
Group study of specified topic in mathematics for undergraduate students. Credit one to four semester hours. D

MATH 4013 SEMINAR IN MATHEMATICS
The following courses are generally offered under this course number:

Analytic Geometry
Emphasizes the essential elements of analytic geometry with special attention to those topics that are needed in a college level calculus sequence. Content includes polynomial, rational, and transcendental functions. Polar and parametric equations, space coordinates and surfaces, lines and planes in space, applications to business, social and physical sciences, and curve fitting. Prerequisite: MATH 2834. D

Linear Algebra for Secondary Teachers
An introductory course on matrix algebra with applications to solutions of systems of linear equations, linear programming, vector spaces, determinants, linear transformations and applications. Prerequisite: MATH 2834. D

Modern Algebra for Secondary Teachers
Fundamental concepts of sets, mappings, binary operations, mathematical induction, divisibility and congruence mod n. Basic algebraic structures: groups, subgroups, cyclic groups, normal subgroups, homomorphism, and isomorphism. Introduction to rings, integral domains, and fields. Supportive problem sets and
Mathematics was originally developed and used by ancient civilizations such as the Babylonians, Egyptians, and Greeks, to solve practical problems like land measurement, construction, and astronomy. The Greeks, particularly Euclid, laid the foundations of geometry, which has been studied and expanded upon by generations of mathematicians. Euclid's work, "Elements," is one of the most influential textbooks in the history of mathematics.

The development of algebra, another fundamental branch of mathematics, was a significant milestone in the history of mathematics. Algebra allows mathematicians to solve equations and represent quantities using symbols and notations. This branch has evolved over time, with contributions from mathematicians around the world, leading to the development of advanced algebraic structures such as groups, rings, and fields.

In the 19th century, the concept of non-Euclidean geometry emerged, challenging the traditional view of geometry as a discipline that only deals with flat surfaces. Mathematicians like Nikolai Lobachevsky, János Bolyai, and Bernhard Riemann explored the properties of spaces that are curved, leading to the development of non-Euclidean geometries.

The 20th century saw the emergence of abstract algebra, which studies algebraic structures such as groups, rings, and fields in a more general setting. This branch of mathematics is essential in various fields, including cryptography, coding theory, and computer science.

Mathematics is a field that continues to evolve, with new concepts and theories being developed to address complex problems in science, technology, and society. Mathematicians are still working on problems that were considered unsolvable a century ago, and new mathematical tools are being developed to tackle the challenges of the future.

In the context of the University of Oklahoma, the Department of Mathematics offers a wide range of courses to prepare students for careers in mathematics and related fields. The curriculum is designed to provide students with a solid foundation in mathematical concepts and techniques, as well as an understanding of the history and development of mathematics.

The courses offered by the Department of Mathematics include Algebra for Elementary Teachers (MATH 1433), Introduction to Mathematical Logic (MATH 4133), Complex Variables (MATH 4873), and Advanced Calculus I (MATH 4853). These courses provide students with the opportunity to explore various aspects of mathematics, from algebraic structures to advanced calculus.

In addition to these courses, the Department of Mathematics also offers courses in music therapy, such as Aural Skills I (MUSIC 1213) and Introduction to Music I (MUSIC 1013). These courses are designed to provide students with a comprehensive understanding of music theory and history, as well as practical skills in music notation and analysis.

Overall, the Department of Mathematics at the University of Oklahoma provides students with a well-rounded education in mathematics and music, preparing them for a variety of careers in fields such as education, research, and industry.

*Source: University of Oklahoma Department of Mathematics and Music Department*
MUSIC 1313 MUSIC THEORY II
Continuation of MUSIC 1214 Elementary Theory. Emphasis on chords, inversions, secondary sevenths, and modulations. S

MUSIC 1321 AURAL SKILLS II
Continuation of MUSIC 1221 consisting of aural skills including intervals, ear training, sight singing, and harmonic and melodic dictation. Emphasis on singing chord members, secondary functions, and modulation. S

MUSIC 1411 BRASS CLASS
Class instruction in one brass instrument and survey of the brass family. May be repeated for a total of three hours’ credit. F, S

MUSIC 1511 WOODWIND CLASS
Class instruction in two woodwind instruments and survey of the woodwind family. May be repeated for a total of three hours’ credit. F, S

MUSIC 1611 PERCUSSION CLASS
Class instruction in one percussion instrument and survey of the percussion family. May be repeated for a total of three hours’ credit. F, S

MUSIC 1711 STRING CLASS
Class instruction in one orchestral stringed instrument and survey of the orchestral string family. May be repeated for a total of three hours credit. F, S

MUSIC 1911 BEGINNING GUITAR CLASS
Beginning class instruction on the classical guitar. F, S

MUSIC 2081 FIELD STUDIES I
Experiential learning of the skills in observation, assessment, treatment design, documentation, and presentation with the focus on music therapy in medical and physical rehabilitation settings. One to two hours of clinical experience and a one-hour seminar are required each week. D

MUSIC 2101 VOICE CLASS
Class instruction in voice. May not be repeated for additional credit. F, S

MUSIC 2181 FIELD STUDIES II
Experiential learning of skills in observation, assessment, treatment design, documentation, and presentation with the focus on music therapy in mental health. One to two hours of clinical experience and a one-hour seminar are required each week. D

MUSIC 2222 RECREATIONAL MUSIC
The use of various music experiences in the therapeutic and educational process, including experiences in piano, guitar, body movement, educational rhythms, and directing group activities. D

MUSIC 2681 VOCAL ENSEMBLE
Experience in performing in small vocal ensembles. D

MUSIC 2811 CLASS PIANO I
Class instruction in piano for students with no previous keyboard experience. Emphasis on practical keyboard facility, sight reading, and harmonizing folk melodies and songs. F, S

MUSIC 2821 CLASS PIANO II
Class instruction in piano for students with beginning private piano instruction or those who have completed MUSIC 2811. F, S

MUSIC 2831 CLASS PIANO III
Class instruction in piano for moderately advanced beginners or those who have completed MUSIC 2821. F, S

MUSIC 2841 CLASS PIANO IV
Class instruction in piano for moderately advanced students placed in this class by audition. D

MUSIC 2861 ACCOMPANYING
Training and experience in keyboard accompaniments for solos and ensembles. F, S

MUSIC 2901 PIANO ENSEMBLE AND ACCOMPANYING
Performance and review of piano literature written for more than one player. Continues experiences begun in MUSIC 2861. D

MUSIC 2911 INTERMEDIATE GUITAR
Class instruction in classical guitar for students who have completed MUSIC 1911. D

MUSIC 2951 MODERN LANGUAGE DICTION
The study of Italian, German and French diction for singers. F

MUSIC 2981 PRINCIPLES OF CONDUCTING
Rudiments of conducting and elements of interpretation and score reading. (One-hour lab) F

MUSIC 3081 FIELD STUDIES III
Experiential learning of skills in observation, assessment, treatment design, documentation, and presentation with the focus on music therapy in special education. One to two hours of clinical experience and a one-hour seminar are required each week. D

MUSIC 3101 INSTRUMENTAL CONDUCTING
Continuation of MUSIC 2981 emphasizing conducting skills for instrumental ensembles. (One-hour lab) S

MUSIC 3113 MUSIC THERAPY II: MUSIC THERAPY IN MENTAL HEALTH AND ILLNESS
Music therapy theory, research, and clinical practice in psychiatry. D

MUSIC 3123 MUSIC THERAPY IV: THE PSYCHOLOGY OF MUSIC
Study of physiological, cognitive, and affective response to music, music preference and ability, acoustics, and research. D

MUSIC 3151 CHORAL CONDUCTING
Continuation of MUSIC 2981 emphasizing conducting skills for choral ensembles. (One-hour lab) S

MUSIC 3171 INTRODUCTION TO MOVEMENT
Develop knowledge and skills of movement via leading structural and creative/improvisatory experiences, communicating via movement, and both music and non-music goals for movement activities.

MUSIC 3181 MUSIC THERAPY COMPETENCIES AND PROFESSIONAL ETHICS
Discussion of music therapy professional competencies, standards of clinical practices (including topics of insurance reimbursement and job/internship searching), and ethics dilemmas that should be resolved in compliance with Code of Ethics by AMTA and CBMT.

MUSIC 3202 MUSIC METHODS FOR ELEMENTARY TEACHERS
Training in music for the non-musician teacher who will teach in a self-contained elementary classroom or who will support the work of a general music specialist. Activities include singing, listening, rhythmic and creative activities, and experience in playing instruments used in the K-6 classroom. F, S, SU
MUSIC 3231 BAND INSTRUMENT REPAIR
Practical course in instrument repair. D

MUSIC 3253 MUSIC THEORY III
The study of chromatic theory. Emphasis is given to altered chords, chords of the augmented sixth, enharmonic spellings, and various non-harmonic tones.

MUSIC 3261 AURAL SKILLS III
Continuation of MUSIC 1321 consisting of aural skills including intervals, ear training, sight singing, and harmonic and melodic dictation. Emphasis on chromaticism and modes. F

MUSIC 3303 MUSIC THEORY IV
Continuation of MUSIC 3253 with opportunity for creative experience in writing these styles. S

MUSIC 3311 AURAL SKILLS IV
Continuation of MUSIC 3261 consisting of aural skills including intervals, ear training, sight singing, and harmonic and melodic dictation. Emphasis on chromaticism and modes. S

MUSIC 3331 JAZZ IMPROVISATION
Application of the elements of basic harmony and theory to jazz improvisation. S

MUSIC 3353 HISTORY OF MUSIC I
Study of the historical eras from antiquity through the eighteenth century A.D., with emphasis on analytical study of the musical forms and styles of these periods. F

MUSIC 3403 HISTORY OF MUSIC II
Continuation of MUSIC 3353 with emphasis on the eras from 1800 to the present. S

MUSIC 3452 HISTORY OF OPERA
History of the development of opera from 1600 to the present. D

MUSIC 4041 PERCUSSION ENSEMBLE
Performance of music written for percussion ensemble with emphasis on “total” percussion. Two rehearsals each week. Enrollment by permission of the instructor. F, S

MUSIC 4051 ORCHESTRA
One full orchestra and two string rehearsals each week. Enrollment by permission of the instructor. F, S

MUSIC 4061 SMALL INSTRUMENTAL ENSEMBLES
Performance of chamber music for small instrumental ensembles. Two rehearsals each week. Enrollment by permission of the instructor. D

MUSIC 4071 JAZZ ENSEMBLE
Performance of the literature of jazz. Two or three rehearsals a week, depending on ensemble assignment. Enrollment by audition and permission of instructor. F, S, SU

MUSIC 4081 BAND
The performance of band literature in an ensemble situation. F, S, SU

MUSIC 4102 FORMS AND ANALYSIS
A course which provides the basic tools for the analysis of music from any period style. Emphasis of study is upon forms developed by common practice in western music from 1700 to the present. Prerequisite: MUSIC 1314. D

MUSIC 4112 ORFF AND KODALY TECHNIQUES IN ELEMENTARY
A survey of method and materials developed by Carl Orff, Zoltan Kodaly, and their interpreters for the elementary general music classroom. Emphasis is on rhythmic activities and music literacy. D

MUSIC 4122 BASIC ORFF I
Beginning, detailed study of the music education system developed by Carl Orff. D

MUSIC 4132 BASIC ORFF II
Continuation of MUSIC 4122. D

MUSIC 4141 CHORUS
Choral ensemble performance. Students are placed in the five choirs by auditions held during the first scheduled class meetings. F, S, SU

MUSIC 4151 ORFF PRACTICUM
Supervised application in an elementary classroom of the general music procedures studied in MUSIC 4122 and MUSIC 4132. D

MUSIC 4202 COMPOSITION
Practical experience in musical composition in various forms and styles. Prerequisite: MUSIC 3303. D

MUSIC 4213 MUSIC THERAPY III: MUSIC THERAPY IN SPECIAL EDUCATION
Survey of common physiological and psychological characteristics of special education recipients, music therapy assessment and treatment that correspond with the Individual Education Plan (IEPs) or other care plans, as well as crucial legal considerations in the special education setting. D
MUSIC 4222 INSTRUMENTAL PEDAGOGY
Physical and psychological problems associated with teaching wind, percussion, and stringed instruments. FO

MUSIC 4232 ARRANGING
A practical course in the technique of arranging for instrumental and vocal groups. Prerequisite: MUSIC 3303. S

MUSIC 4242-4 MUSIC THERAPY V-CLINICAL TRAINING
A six-month supervised internship. Credit: two to four semester hours; may be repeated for not more than a total of eight semester hours. Prerequisite: Completion of all undergraduate course work. D

MUSIC 4251 OPERA WORKSHOP
Practical experience in all phases of opera and musical theater production. F

MUSIC-4261 INTRO TO MUSIC TECHNOLOGY
Introduction to computer applications for MIDI sequencing, music notation, and digital audio.

MUSIC 4302 ELEMENTARY AND SECONDARY GENERAL MUSIC
A course for music majors which emphasizes materials and methods for teaching elementary and secondary music in general education. A portion of the course is devoted to discussion of various philosophies of music education and standardized testing in music. F

MUSIC 4311 FIELD STUDIES IV
Experiential learning of skills in observation, assessment, treatment design, documentation, and presentation with the focus on music therapy in special education. One to two hours of clinical experience and a one-hour seminar are required each week. D

MUSIC 4352 PIANO PEDAGOGY
Teaching methods and materials for all levels of piano instruction, from grade school through high school. Discussion of private and class techniques. FO

MUSIC 4362 MUSIC HISTORY SURVEY
A survey course of all stylistic eras of Western music from antiquity to the present. D

MUSIC 4372 MUSIC THEORY PRACTICUM
A review of the undergraduate music theory curriculum and an introduction of analytical techniques. D

MUSIC 4402 BAND METHODS
A study of techniques for teaching public school instrumental music. Emphasis is on methods and materials, marching band shows, and various problems of administration. FO

MUSIC 4452 VOCAL METHODS
A study of music teaching techniques for junior and senior high school music programs, including large choral groups, small ensembles, the changing voice, vocal solos, the voice class, programming, and public relations. FE

MUSIC 4463 TECHNOLOGY IN MUSIC EDUCATION
An introduction to computer applications for MIDI sequencing, music notation, and digital audio. This course will also focus on technology for music education students to use in their classroom. F, S

MUSIC 4502 CHORAL LITERATURE
A review of music written for choral ensembles. Emphasis is on compositions appropriate for use in public school music programs. SO

MUSIC 4552 PIANO LITERATURE
A historical survey of the literature for the piano. SE

MUSIC 4602 INSTRUMENTAL LITERATURE
A review of music written for instrumental ensembles. Emphasis is on instructional material suitable for beginning, intermediate, and advanced students in the public schools. The class will review music for both private and group instruction. SE

MUSIC 4732 CHURCH MUSIC
A study of music as practiced by the various religious organizations in the U.S. which commonly employ professional musicians. Emphasis is on music literature and procedures used in formal worship. D

MUSIC 4812 ADVANCED MUSIC ANALYSIS
A course which provides the basic tools for the analysis of music from any style period. Emphasis of study is upon forms developed by common practice in western music from 1700 to the present. Prerequisites: MUSIC 3303 and MUSIC 3311. F

MUSIC 4900 RECITAL ATTENDANCE
A non-credit course required each semester for music majors and minors. The course provides listening and performance opportunities in formal and informal concert settings. F, S

MUSIC 4901 RECITAL ATTENDANCE
A non-credit course required each semester for music majors and minors. The course provides listening and performance opportunities in formal and informal concert settings. F, S

MUSIC 4950 SENIOR RECITAL
Non-credit course required for senior music education majors. The public or private performance of an approved concert in the principal applied music area. F, S, SU

MUSIC 4951 SENIOR RECITAL
A one-hour supervised internship. Credit: two to four semester hours; may be repeated for not more than a total of eight semester hours. Prerequisite: Completion of all undergraduate course work. D

MUSIC 4952 SENIOR RECITAL
A one-hour supervised internship. Credit: two to four semester hours; may be repeated for not more than a total of eight semester hours. Prerequisite: Completion of all undergraduate course work. D

DEPARTMENT OF SOCIAL SCIENCES

American Indian Studies

CATC 1111 INTRODUCTION TO AMERICAN INDIAN STUDIES
A survey course intended to orient student to American Indian Culture and history. F, S

CATC 1204 CHEYENNE LANGUAGE I
Introduces students to the Cheyenne Language, its orthography, syntax, grammar, and pronunciation. Develops written and oral skills. F
CATC 1214 CHEYENNE LANGUAGE II
Continues the study of the Cheyenne Language, further examining its syntax, grammar, and pronunciation and developing written and oral skills. Prerequisite: CATC 1204.  S

CATC 1254 ARAPAHO LANGUAGE I
Introduces students to the Arapaho Language, its orthography, syntax, grammar, and pronunciation. Develops written and oral skills. F

CATC 1264 ARAPAHO LANGUAGE II
Continues the study of the Arapaho Language, further examining its syntax, grammar, and pronunciation and developing written and oral skills. Prerequisite: CATC 1254. S

CATC 1402 CHEYENNE AND ARAPAHO CONSTITUTION
A selected study of the Cheyenne and Arapaho Constitution. D

CATC 1413 AMERICAN INDIAN BELIEF SYSTEMS
A selected study of American Indian belief systems from both historical and contemporary perspectives. D

CATC 1553 LITERATURE OF THE AMERICAN INDIAN
A study of oral traditions, fiction and non-fiction, beginning with creation accounts to the present with emphasis on the diversity of American Indian cultures and traditions. Emphasis is placed on writers from Oklahoma and the Southwest. D

CATC 1563 MUSIC OF THE AMERICAN INDIAN
A selected study of American Indian music. D

CATC 2001-4 INDIVIDUAL STUDY
Individual study of specified topic for undergraduate students. Credit one to four semester hours. D

CATC 2011-4 SEMINAR TOPIC
Group study of specified topic for undergraduate students. Credit one to four semester hours. D

CATC 2143 ART HISTORY OF THE PLAINS INDIAN
A study of American Indian art. D

CATC 2203 AMERICAN INDIANS TODAY
A study of contemporary American Indian life and culture. D

CATC 2062 INTERNSHIP: TRIBAL ADMINISTRATION
A designated period of practical experience devoted to serving an apprenticeship in tribal administration under the supervision of selected administrators. Prerequisite: Consent of instructor and approval of CATC administrative staff. D

CATC 2103 BUDGET OPERATIONS
This course will provide students with the budget’s role in tribal government and key aspects of the budget process, including budget formulation, budget execution, revisions, supplemental funding, and emergency spending. Students will learn to establish goals and assess tribal needs, getting community input, and determine how to prepare an annual budget based on availability of funds. D

CATC 2123 INTRODUCTION TO TRIBAL ADMINISTRATION
This course is designed to provide students with an understanding of the day-to-day administration and overall program operations of tribal programs. Students will learn, discuss, and critique the daily business of government operations and insure goals and objectives are met by the tribe. D

CATC 2133 TRIBAL GOVERNMENT I
This course provides an overview of tribal governments and their relationship with the federal government, as well as current day-to-day tribal government functions. Students will learn and discuss the functions and structures of government, tribal constitution laws, tribal enrollment, tribal court systems, tribal election ordinances, the legislative systems, law making functions, and executive functions in tribal governments. D

CATC 2233 TRIBAL GOVERNMENT II
Continuation of CATC 2133 to include further discussion of government, tribal constitution laws, tribal enrollment, tribal court systems, tribal election ordinances, the legislative systems law making functions, and executive functions in tribal governments. Prerequisite: CATC 2133. D

CATC 2313 SELF-DETERMINATION CONTRACTS AND EDUCATION ASSISTANCE ACT
This course is designed to provide a basic understanding and knowledge on the contract administration process and procedures of the Indian Self-Determination and Education Assistant Act. Emphasis is on preparing a contract and grant application and its internal and external administrative procedures. Students will prepare, review, and discuss application content and process, statement of work and budget preparation. D

CATC 2413 SELF-DETERMINATION CONTRACTS ADMINISTRATION I
This course is designed to provide a basic understanding and knowledge on the contract administration process and procedures. Emphasis is on preparing a contract and grant application and its internal and external administrative procedures that governs Self-Determination Contract Administration. Students will prepare, review, and discuss application content and process, statement of work and budget preparation. D

CATC 2513 SELF-DETERMINATION CONTRACTS ADMINISTRATION II
This course is a continuation of CATC 2413 and is designed to be a “hands on” exercise in contract administration. Students will learn regulations to internal and external administrative procedures that govern Self-Determination Contract Administration. Students will prepare, review, and critique non-procurement contracts, documents, monitoring plan, program evaluations, and closeout of contracts. Prerequisite: CATC 2413. D

CATC 2523 OFFICE OF MANAGEMENT AND BUDGET CIRCULARS
This course is designed to provide the common rules for administration of grants and cooperative agreements, cost principles, and audit requirements of federal programs. Students will review, discuss, and learn the impact of each circular on Tribal Administration and management. D

CATC 2603 CHEYENNE AND ARAPAHO HISTORY
In depth study of Cheyenne and Arapaho people and their journey on the road of life. D

Criminal Justice

CRMJS 1113 INTRO TO CRIMINAL JUSTICE
An overview of the agencies and processes involved in the administration of justice to those accused and convicted of violating the criminal law. Agency problems and due process issues related to law enforcement, prosecution, adjudication, sentencing and confinement of offenders are discussed. F
CRMJS 1223 INTRODUCTION TO LAW ENFORCEMENT
A description and analysis of law enforcement history and current practice. The complex role of American police agents at all levels of government, models of police service, critical issues affecting law enforcement and practice, and the progress toward professionalism are emphasized. D

CRMJS 2503 CRIMINAL JUSTICE ADMINISTRATION
A study of the organization and management of Criminal Justice agencies. D

CRMJS 3163 SOCIOLOGY OF DEVIANT AND CRIMINAL BEHAVIOR
A general study of causes, effects and the nature of deviant behavior; special attention is given to criminal behavior as a type of deviance. Prerequisite: CRMJS 1113. F

CRMJS 3243 COMPARATIVE CRIMINAL JUSTICE SYSTEMS
A trans-national study of criminal justice systems focusing on law enforcement, adjudication, and corrections for comparison with U.S. system. Prerequisite: CRMJS 1113. S

CRMJS 3353 THE CRIMINAL MIND
This course will explore the mind of those who commit criminal acts and attempt to understand their motives, backgrounds, and psyches. Additional topics discussed in the course will include the mind of the murderer, the stalker, the terrorist, the sex offender, the rapist, and the cyber stalker. Prerequisite: CRMJS 1113. D

CRMJS 3803 PRIVATIZATION OF CRIMINAL JUSTICE
A study of the historical and contemporary involvement of citizens and business and industry (i.e., non-government) in law enforcement, investigation, security, surveillance, detention, corrections, and treatment. Prerequisite: CRMJS 1113. D

CRMJS 4012 SEMINAR IN CRIMINAL JUSTICE
Intensive study on selected topic in criminal justice. May be repeated with change of subject. Prerequisite: CRMJS 1113.

CRMJS 4013 SEMINAR IN CRIMINAL JUSTICE
Intensive study on selected topic in Criminal Justice. Prerequisite: CRMJS 1113. D

CRMJS 4103 JUVENILE JUSTICE
The study of delinquency and agencies of delinquency control; juvenile courts, probation, institutions and community organizations. Prerequisite: CRMJS 1113. S

CRMJS 4143 CRITICAL ISSUES IN CRIMINAL JUSTICE
Analysis of selected critical issues facing the criminal justice system. Prerequisite: CRMJS 1113. D

CRMJS 4153 U.S. CORRECTIONS
A study of corrective social responses to adult criminal behavior; focuses largely on the process of institutionalization, along with alternative treatment strategies. Prerequisite: CRMJS 1113. F

CRMJS 4333 VICTIMOLOGY
A sociological analysis of victimization, the social response to victimization, and the victim movement. Prerequisite: CRMJS 1113. D

CRMJS 4903 DIRECTED READINGS IN CRIMINAL JUSTICE
Scope of project determined by instructor. May be repeated for a total of six hours. Prerequisite: CRMJS 1113. Permission required.

Economics

ECONO 2263 INTRODUCTION TO MACROECONOMICS
Study of the economy as a whole. Topics include national income accounting, the determination of the levels of income, output, employment, and price; money and banking; stabilization policies; international economics. F, S

ECONO 2363 INTRODUCTION TO MICROECONOMICS
Fundamental microeconomic principles involving behavior of consumers, business firms, and resource owners as they relate to the allocation of resources; individual price and output determination. F, S

ECONO 2463 BUSINESS STATISTICS
Study of the relationship of data collection, analysis, and decision-making; emphasis on data collection, tabular and graphical methods, numerical methods, probability, discrete and continuous probability distributions, sampling methods and distributions, interval estimation, hypothesis testing, statistical inference, and linear regression and analysis. F, S, SU

ECONO 3863 MONEY AND BANKING
The study of the role of money, financial markets, and monetary policy in the overall economy; monetary theory. Prerequisites: ECONO 2263. D

ECONO 4003 INDEPENDENT STUDY IN ECONOMICS (TOPIC)
Individual study of selected topics under the supervision of an economics faculty member. Permission required. D

ECONO 4013 SEMINAR IN ECONOMICS (TOPIC)
Group study of specified topics in economics. Permission required. D

ECONO 4563 MANAGERIAL ECONOMICS
An application of economic analysis and theory to the decision-making process which faces the manager. Topics covered include consumer and business firm behavior; demand theory; production; cost analysis; market structure; pricing. Prerequisite: ECONO 2363. D

ECONO 4963 INTERNATIONAL ECONOMICS
Fundamentals of trade theory and international finance. Survey of important current economic problems of an international nature. Prerequisites: ECONO 2263. D

Geography

GEOG 1103 WORLD CULTURAL GEOGRAPHY
Study of world’s cultural regions. Cultural development is surveyed for such topics as populations, technologic-economic systems, and socio-cultural beliefs and practices. F, S

GEOG 4083 ENVIRONMENTAL STUDIES
This course examines impact of humans on the environment. Specifically it attempts to compare the relative stress humans impose upon the environment within various socio-economic structures. D
History

HIST 1033 WORLD HISTORY
An introduction to the history of world civilizations with an emphasis on the development of ideas, institutions, and religions as well as an examination of the impact particular individuals and movements have had in history. F, S, SU

HIST 1043 UNITED STATES HISTORY TO 1877
A survey of American history, beginning with the European background and continuing through the reconstruction era. F, S, SU

HIST 1053 UNITED STATES HISTORY SINCE 1877
A survey of American history from the end of reconstruction to the present. F, S, SU

HIST 2603 WRITING HISTORY
The method and practice of writing history. F

HIST 3043 EARLY MODERN EUROPE
History of European states from the late medieval period to the outbreak of the French Revolution. D

HIST 3063 HISTORY OF IRELAND
A history of Ireland with an emphasis on the period since the 17th century. D

HIST 3083 NATIONALISM AND ETHNICITY
An examination of the theories of national and ethnic community, and the violent application of such theories in 19th and 20th century Europe. D

HIST 3103 MEDIEVAL ENGLAND
Intensive examination of English history from the Anglo-Saxon era through the reign of King John with an emphasis on the detailed study of chronicles, laws, and other primary sources. F

HIST 3113 TUDOR ENGLAND
A study of selected topics from the history of 16th century England.

HIST 3173 HISTORY OF IDEAS
This course uses a seminar method to examine some of the influential texts and ideas of the modern age. Beginning with great humanist texts and working through writings of Marx, Freud, and others, students will use a Socratic method to examine primary sources. D

HIST 3193 THE EUROPEAN UNION
This course adopts a lively, interactive approach to study of the European Union, its institutions, member states, historical and legal background, and current issues. Students participate in debates, presentations, and a “Model EU”. D

HIST 3203 HISTORY OF GERMANY: 9 A.D. – 1898
The history of the German people and states from ancient tribal society, through the Holy Roman Empire, the reformation of Martin Luther, to modern nationalism, Hitler’s Reich, and the divided Germany of the Cold War. F

HIST 3303 HISTORY OF IMPERIAL RUSSIA
Social, political, economic, and cultural developments from Muscovy to Bolshevik Revolution of 1917; emphasizing principal Muscovite regimes, Russian expansion, revolutionary movements, and World War I. D

HIST 3403 MODERN FRANCE
Surveys developments of modern France from the collapse of the ancient regime through the French revolution, the Napoleonic empire, the rise of the bourgeoisie, the Third Republic, the First and Second World Wars, the Fifth Republic, and contemporary French society as part of the European economic community. D

HIST 3503 EARLY CHRISTIAN THOUGHT
A historical introduction to early Christian writings and the development of Christian doctrine during Christianity’s first centuries. Permission required. D

HIST 3603 20TH CENTURY WORLD HISTORY
A history of the 20th century and the early years of the new millennium. The emphasis will be on traditionally non-western nations and regions such as China, Japan, India, Russia, and Africa. The role of the United States and Europe in this period will also be examined. D

HIST 4011-4 SEMINAR IN HISTORY
Intensive study on selected topic in history. Credit from one to four hours. May be repeated with change of subject for total of 12 hours. D

HIST 4023 COLONIAL AMERICA: 1492-1765
A study of the European Colonies north of Mexico from earliest European exploration to the victory of the British in the Wars for North American Empire. D

HIST 4033 REVOLUTIONARY AMERICA: 1765-1808
Study of the revolutionary process in the British colonies and the Revolutionary War, the creation of the 1st American Republic under the Articles of Confederation and a 2nd under the Constitution, the revolution 1800 and the stabilization of the republic in the presidency of Thomas Jefferson. D

HIST 4043 NEW NATION AND AGE OF JACKSON: 1808-1850
America from the Age of Good Feeling through the Age of Jackson including the War of 1812, the second Great Awakening, the rise of social reform movements, the rise and decline of the second party system and developing tensions between nationalism and sectionalism. D

HIST 4053 CIVIL WAR AND RECONSTRUCTION: 1850-1877
A study of the transformation of America from rural society “isolated” from world affairs into highly industrialized power. Social change will be stressed. D

HIST 4063 GILDED AGE/PROGRESSIVE ERA
Study of the transformation of America from rural society “isolated” from world affairs into highly industrialized power. Social change will be stressed. D

HIST 4073 20TH CENTURY AMERICA: 1915-1950
The 1920’s, Depression and New Deal, WWII, Cold War, Korea, and McCarthyism. D

HIST 4083 AMERICA SINCE 1970
Study of the Kennedy and Johnson years, Civil Rights, Vietnam, Counterculture, Nixon Watergate, “me generation”, Ronald Reagan’s America, and the contemporary scene. D

HIST 4093 HISTORICAL RESEARCH AND WRITING
The process of historical research, including methods of locating materials, criticizing sources, analyzing and organizing notes, and writing results and presenting findings. Prerequisite: HIST 2603. F

HIST 4103 AMERICAN INDIANS
Emphasis is on Native American cultures and societies in the United States and federal Indian policy from 1830 to the present. F
HIST 4123 AMERICA IN THE 1950s AND 1960s
The study of the “liberal decade” including the Kennedy’s, Johnson, King, and Nixon, Civil Rights, Vietnam, 1968, and the Counter culture. D

HIST 4133 WOMEN IN AMERICAN HISTORY
The changing role of women in American society from colonial times to the present. Emphasis on cultural values and attitudes, the suffrage movement, feminism and antifeminism in the 20th century as well as the contemporary economic, legal, political, social, and intellectual issues facing women today. D

HIST 4203 OLD SOUTH
Study of antebellum South. Emphasis on role which South and Southerners played in national affairs and development of southern cultural characteristics. S, D

HIST 4213 NEW SOUTH
Survey of postbellum South with emphasis on economic, political, and social forces which have changed culture of this region. D

HIST 4313 AMERICAN WEST
Study of the Trans-Mississippi West with emphasis on the impact of the frontier on American life, environmental issues, and the 20th Century West. D

HIST 4353 HISTORY OF OKLAHOMA
Oklahoma history from its beginning to present, including Indian background, formation into territories, achievement of statehood, and general cultural, economic, and political development. S, SU

HIST 4803 PUBLIC HISTORY INTERNSHIP
Readings, essays, and an internship in a public history setting. Permission required. D

HIST 4901-4 DIRECTED READINGS IN HISTORY (TOPIC)
Scope of project determined by instructor. Credit from one to four hours. May be repeated for a total of six hours. Permission required. D

Political Science

POLSC 1103 AMERICAN GOVERNMENT AND POLITICS
Survey of origin, structure, and functions of national government with emphasis on Constitution and the American political process. F, S, SU

POLSC 2303 COMPARATIVE POLITICS
Introduction to the systematic study of comparative government and politics. Analytical topics include political change, political communication, political culture, and political socialization. Prerequisite: POLSC 1103. F

POLSC 2623 CRIMINAL LAW AND PROCEDURE
An introduction to the elements of the criminal law and procedural rights of defendants. Prerequisite: POLSC 1103. F

POLSC 2803 THE JUDICIAL PROCESS
Introduction to the legal system with emphasis on organization and jurisdiction of federal and state courts, judicial process, and basic principles of American jurisprudence. Prerequisite: POLSC 1103. S

POLSC 3003 FEDERAL CONSTITUTION
Decisions through which the Supreme Court has developed judicial review and defined the scope of federal power. Prerequisite: POLSC 1103. F

POLSC 3033 POLITICAL PARTIES
Survey of the origin and development of the parties of the United States including an analysis of contemporary policies and issues. Prerequisite: POLSC 1103. S

POLSC 3113 POLITICAL THEORY
Examines classic and current views on the nature of authority, liberty, and justice. Prerequisite: POLSC 1103. F

POLSC 3163 PRINCIPLES OF INTERNATIONAL RELATIONS
Basic survey of international relations, including a consideration of the basis of national power and the fundamentals of international politics, law, and organization. Prerequisite: POLSC 1103. D

POLSC 3323 LEGISLATIVE-EXECUTIVE RELATIONS
The study of the organization and functioning of Congress and the Executive. Prerequisite: POLSC 1103. F

POLSC 3343 WOMEN & POLITICS
A study of women’s pursuit of equality in the U.S. and the international community; their successes as well as the obstacles they have confronted; and the political organizations created to achieve their goals. Prerequisite: POLSC 1103. D

POLSC 3353 MODEL UNITED NATIONS I
Inform students about the United Nations system; consideration of the political, social, economic, and environmental issues, as well as disarmament and other issues within the international community. Participation in the Midwest Model United Nations is required. Prerequisite: POLSC 1103. SE

POLSC 3363 PUBLIC ADMINISTRATION THEORY AND PRACTICE
Introduction to principles and problems of public administration, organization, planning, supervision, budgeting, and administration responsibility. Prerequisite: POLSC 1103. D

POLSC 3373 MODEL UNITED NATIONS II

POLSC 4013 SEMINAR IN POLITICAL SCIENCE (TOPIC)
Intensive study on selected topic in Political Science. May be repeated with change of subject for a total of 12 hours. Prerequisite: POLSC 1103. D

POLSC 4233 URBAN POLITICS AND ELECTION SYSTEMS
A study of the governance systems of cities and towns within the governing state context; and the processes of municipal and state policy implementation. Prerequisite: POLSC 1103. D

POLSC 4253 INTERNATIONAL LAW
An analysis of international organizations, international courts, issues of sovereignty, diplomatic relations, treaties, human rights, economic policies, and when the use of force is justified. The course will review cases from the United States Supreme Court, the International Court of Justice and other courts throughout the world. Prerequisite: POLSC 1103. D

POLSC 4303 INTERNATIONAL ORGANIZATIONS
Development and operation of international organizations from League of Nations to present, with emphasis on UN but including regional and nongovernmental organizations. Prerequisite: POLSC 1103. D
POLSC 4403 PUBLIC POLICY FORMATION
A survey of the development and administration of public policy. 
Prerequisite: POLSC 1103. D

POLSC 4613 CIVIL RIGHTS AND LIBERTIES
Limitations placed on federal and state governments by the Constitution. Emphasizes First Amendment freedoms and the Fourteenth Amendment. 
Prerequisite: POLSC 1103. S

POLSC 4903 DIRECTIONS IN POLITICAL SCIENCE (TOPIC)
Scope of project determined by instructor. May be repeated for a total of six hours. Prerequisite: POLSC 1103. Permission required. D

POLSC 4933 GOVERNMENT INTERNSHIP
Qualified students will be assigned to cooperating governmental offices during appropriate academic periods to observe and to apply previous coursework. Prerequisite: POLSC 1103. Permission required. D

SOCIAL SCIENCES

SOCSC 3853 STATISTICS FOR THE SOCIAL SCIENCES
Introduction to statistical methods in the social sciences. Emphasis on analyzing and presenting data utilized by social scientists; survey of descriptive techniques. F, S

SOCSC 3863 FUNDAMENTALS OF RESEARCH
Use of scientific method in social science research. F, S, SU

SOCSC 4133 TEACHERS COURSE IN THE SOCIAL SCIENCES
Resources, methods and problems in teaching the social sciences in secondary schools. Required for certification in this field. F

SOCIOLOGY

SOCIO 1003 INTRODUCTION TO SOCIOLOGY
A general education course covering the fundamental concepts of sociology; foundations of group life; social change, processes, and problems. F, S, SU

SOCIO 3043 RACIAL AND CULTURAL MINORITIES
An interdisciplinary examination of the causes and consequences of prejudice and discrimination. Prerequisite: SOCIO 1003. D

SOCIO 3163 SOCIOLOGY OF DEVIANT AND CRIMINAL BEHAVIOR
A general study of the causes, effects and the nature of deviant behavior; special attention is given to criminal behavior as a type of deviance. Prerequisite: SOCIO 1003. F

SOCIO 4013 SEMINAR IN SOCIOLOGY
Intensive study on selected topic in Sociology. Prerequisite: SOCIO 1003. D

SOCIO 4033 ADVANCED ANALYSIS OF SOCIAL PROBLEMS
Contemporary U.S.A. and international social problems are examined through use of contemporary sociological theories. (The course is designed to give an in-depth understanding of a structural approach to a changing social milieu.) Prerequisite: SOCIO 1003. D