ANTHROPOLOGY

ADD

- ANTH 4070 ETHNOBOTANY 4.0
  ANTH 4070/6070: Ethnobotany: The Study of Plants and People Prerequisites: ANTH 2010, 2020, or 2030 Credits: 4 Course Description: Ethnobotany is the study of the use of plants by humans. Ethnobotany incorporates several related disciplines, including Anthropology, Archaeology, Economics, Biology, Geography, History, Psychology, Chemistry, Linguistics, and many others. This course provides an overview of the field of ethnobotany and its methods. It is not specifically a survey of the uses of plants by different cultural groups, but students will receive such knowledge via empirically derived case studies throughout class. Instead, the course is designed to be thematic and methodological. What kinds of questions do ethnobotanists ask? How do they collect data? How do they analyze data? How do they interpret data? What are the applications of ethnobotany outside of an academic setting? Such a pragmatic approach will enhance the class’s utility and encourage students to not only ask questions about the world but try to answer them. Target student groups: Anthropology majors and others interested in how people utilize and understand plants cross-culturally

- ANTH 6070 ETHNOBOTANY 4.0
  ANTH 4070/6070: Ethnobotany: The Study of Plants and People Prerequisites: ANTH 2010, 2020, or 2030 Credits: 4 Course Description: Ethnobotany is the study of the use of plants by humans. Ethnobotany incorporates several related disciplines, including Anthropology, Archaeology, Economics, Biology, Geography, History, Psychology, Chemistry, Linguistics, and many others. This course provides an overview of the field of ethnobotany and its methods. It is not specifically a survey of the uses of plants by different cultural groups, but students will receive such knowledge via empirically derived case studies throughout class. Instead, the course is designed to be thematic and methodological. What kinds of questions do ethnobotanists ask? How do they collect data? How do they analyze data? How do they interpret data? What are the applications of ethnobotany outside of an academic setting? Such a pragmatic approach will enhance the class’s utility and encourage students to not only ask questions about the world but try to answer them. Target student groups: Anthropology majors and others interested in how people utilize and understand plants cross-culturally
## APPLIED LINGUISTICS

### ADD

- **AL 2290 INTRO SPECIAL TOPICS 3.0**  
  AL 2290 Introductory Special Topics in Applied Linguistics. This course provides an exploration at an introductory level of a specific topic in applied linguistics that is not currently included in the curriculum. May be repeated if topic differs.

- **ESL 8000 SPECIAL TOPICS IN ESL 0.0-6.0**  
  Special Topics in English as a Second Language. Prerequisite: Consent of instructor. This course is intended for international students in exchange programs.

### CHANGE

- **AL 4980 LANG PARTNER FIELD EXPERIENCE (Change title; description; prerequisite)**  
  Title: Internship. Description: Internship. Prerequisite: AL 3021 or ForL 3021 with grade of C or higher, Junior or Senior standing, and a declared Applied Linguistics major or minor. This course provides an opportunity to observe and interact with professionals engaged in day-to-day activities in a corporate or non-profit setting. Students will gain occupational skills through hands-on experience and apply linguistics theory, pedagogy, and/or analysis methods to relevant problems in written assignments. AL 3051 TEFL I and AL 4161 TEFL II are recommended before an internship that involves teaching English. May be repeated once to fulfill residency or total degree hour requirements, but not to fulfill major requirements.

## ART & DESIGN

### CHANGE

- **AH 4610 20TH C PAINTING & SCULPTURE (Change title; description; prerequisite)**  
  Title: 20th Century Art of Europe & US. Description: Twentieth-Century European and American Modernism. Emphasizes analysis of social, economic, and political forces as they influence art in diverse media. Prerequisite: AH 1750 with grade of C or higher, or AH 2000 with a grade of C or higher, or consent of instructor. 3.000 Credit hours. Prerequisite: AH 1750 with grade of C or higher, or AH 2000 with a grade of C or higher, or consent of instructor.
• AH 4700 CONTEMP ART/THEORY & CRITICISM (Change prerequisite) AH 1750 with grade of C or higher, or AH 2000 with a grade of C or higher, or consent of instructor.

• GRD 3000 INTRODUCTION TO GRAPHIC DESIGN (Change prerequisite) Art 1010 and 1020 with grades of C or higher.

• GRD 3150 INTRODUCTION TO TYPOGRAPHY (Change prerequisite) Art 1010 and 1020 with grades of C or higher.

BIOLOGY

ADD

• BIOL 4670 PRACTICAL BIOCHEMISTRY 3.0
  Principles and Techniques of Practical Biochemistry. Prerequisite: One semester of biochemistry (Chem 4600/6600) with grade of B or higher, or equivalents. [Same as Chem 4670]. A comprehensive and integrated review of principles and modern techniques found in day-to-day biochemical research laboratories. Topics include, but are not limited to: general principles of biochemical investigations, molecular biology and basic techniques, molecular cloning and gene analysis, protein structure, purification and characterization, biomolecular interactions, basic enzyme analysis, spectroscopic techniques, mass spectrometric techniques, centrifugation, electrophoretic, chromatographic, radioisotope and electrochemical techniques.

• BIOL 6670 PRACTICAL BIOCHEMISTRY 3.0
  Principles and Techniques of Practical Biochemistry. Prerequisite: One semester of biochemistry (Chem 4600/6600) with grade of B or higher, or equivalents. [Same as Chem 4670]. A comprehensive and integrated review of principles and modern techniques found in day-to-day biochemical research laboratories. Topics include, but are not limited to: general principles of biochemical investigations, molecular biology and basic techniques, molecular cloning and gene analysis, protein structure, purification and characterization, biomolecular interactions, basic enzyme analysis, spectroscopic techniques, mass spectrometric techniques, centrifugation, electrophoretic, chromatographic, radioisotope and electrochemical techniques.

• BIOL 8040 RESEARCH DESIGN AND ANALYSIS 3.0
  Research Design and Analysis in Neuroscience. This course will train doctoral students in the design of neuroscience experiments and the statistical methodologies appropriate for analyzing these data. Topics include experimental design, parametric and non-
parametric statistical analyses, as well as applied problem sets using neurobiobehavioral data. Multivariate regression analysis, ANCOVA and probability theory will also be covered.

- **BIOL 8390 INTRO TO MODELING 3.0**
  Prerequisites: Instructor consent (a C or above in pre-calculus is beneficial). [Same as Neur 8390]. This is a discussion-based class based on reading assignments and in-class presentations. It prepares non-mathematically literate students for future collaboration with mathematical and computational modelers, without teaching mathematical technicalities. Students from more mathematical backgrounds will learn how to communicate technical ideas to non-mathematicians through collaborative group work. There are no formal examinations for this course.

**CHANGE**

- **BIOL 4960 BIOLOGY CAREERS SEMINAR (Change prerequisite)** Biol 2108K or Biol 2800 with grade of C or higher.

- **BIOL 8310 CONCEPTS: CELL BIOL, PHYSIOLOGY (Change title; description)** Title: Concepts in Concepts in Cell Biology and Immunology. Description: Concepts in Concepts in Cell Biology and Immunology. Prerequisite: consent of the instructor. Two lecture hours a week. Lectures and discussions dealing with contemporary topics in cell biology and immunology.

- **BIOL 8710 CONCEPTS: MOLECULAR GENETICS (Change title; description)** Title: Concepts: Mole Gen, Path and Immun. Description: Concepts in Molecular Genetics, Pathogenesis and Immunity. Prerequisite: consent of instructor. Two lecture hours a week. Lectures and discussions dealing with contemporary topics in molecular genetics, pathogenesis and immunity.

- **BIOL 8960 TOPICS: CELL PHYSIOLOGY & BIOCHEM (Change title; description)** Title: Topics: Cell Biology & Immunol. Description: Topics in Cell Biology and Immunology. May be repeated if topics vary.

**CHEMISTRY**

**ADD**

- **CHEM 4460 MODERN SYNTHETIC METHODS 3.0**
Modern Synthetic Methods and Their Applications in Biomedical Sciences. Prerequisites minimum grades of B in both Chem 4400/6400 and Chem 4430/6430 or consent of instructor. This course will introduce the most widely used modern synthetic chemistry methods (developed in recent 10 years) and their applications in biomedical sciences to higher level undergraduates (chemistry major) and entry-level graduate students. The main purpose of this course is to build a bridge between classic Advanced Organic Chemistry knowledge and contemporary research of synthetic chemistry, bioorganic chemistry, medicinal chemistry and chemical biology.

- CHEM 4670 P AND T OF BIOCHEMISTRY 3.0
  Principles and Techniques of Practical Biochemistry. Prerequisite: One semester of biochemistry (Chem 4600/6600) with grade of B or higher, or equivalent. Cross listed with Biol 4670. A comprehensive and integrated review of principles and modern techniques found in day-to-day biochemical research laboratories. Topics include, but are not limited to: general principles of biochemical investigations, molecular biology and basic techniques, molecular cloning and gene analysis, protein structure, purification and characterization, biomolecular interactions, basic enzyme analysis, spectroscopic techniques, mass spectrometric techniques, centrifugation, electrophoretic, chromatographic, radioisotope and electrochemical techniques.

- CHEM 6460 MODERN SYNTHETIC METHODS 3.0
  Modern Synthetic Methods and Their Applications in Biomedical Sciences. Prerequisites minimum grades of B in both Chem 4400/6400 and Chem 4430/6430 or consent of instructor. This course will introduce the most widely used modern synthetic chemistry methods (developed in recent 10 years) and their applications in biomedical sciences to higher level undergraduates (chemistry major) and entry-level graduate students. The main purpose of this course is to build a bridge between classic Advanced Organic Chemistry knowledge and contemporary research of synthetic chemistry, bioorganic chemistry, medicinal chemistry and chemical biology.

- CHEM 6670 P AND T OF BIOCHEMISTRY 3.0
  Principles and Techniques of Practical Biochemistry. Prerequisite: One semester of biochemistry (Chem 4600/6600) with grade of B or higher, or equivalent. This course is cross listed with Biol 4670/6670. A comprehensive and integrated review of principles and modern techniques found in day-to-day biochemical research laboratories. Topics include, but are not limited to: general principles of biochemical investigations, molecular biology and basic techniques, molecular cloning and gene analysis, protein structure, purification and characterization, biomolecular interactions, basic enzyme analysis, spectroscopic techniques, mass spectrometric techniques, centrifugation, electrophoretic, chromatographic, radioisotope and electrochemical techniques.
CHANGE

- **CHEM 1211K PRINCIPLES OF CHEMISTRY I** (Change prerequisite; description)
  Prerequisite: Must successfully pass the Chemistry Placement Test with a score of 14 or higher. Description: Principles of Chemistry I. Prerequisite: One year of high school chemistry or the equivalent and authorization by department. Math 1113 as a prerequisite or corequisite is strongly advised. Three lecture and three laboratory hours a week. First course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors. Topics to be covered include composition of matter, stoichiometry, periodic relations, and nomenclature. Laboratory exercises supplement the lecture material.

COMMUNICATIONS

ADD

- **JOUR 3900 DIGITAL PUB & PROD 3.0**
  Digital Publishing and Production. Jour 3010 and Jour 3060 with a grade of C or higher and an institutional GPA of 2.5 or higher. This is a skills-based, project-oriented course. Working in teams, students will conceive, plan and execute multimedia news projects for online delivery. Emphasis is on developing professional journalistic and public relations practices applicable to multi-platform delivery systems.

- **JOUR 3040 COMMUNICATING ENVIOR ISSUES 3.0**
  Communicating Environmental Issues. Cross-listed with Spch 3040. Prerequisites: Jour 1000 with a grade of C or higher and an institutional GPA of 2.5 or higher. Critical and cultural approaches to analyzing environmental discourses and producing problem-solving environmental messages. Global environmental issues are studied via: advocacy campaigns, journalism green marketing, industry rhetoric, science and risk communication, media representations, and environmental and animal ethics.

- **JOUR 4002 STATE GOVERNMENT REPORTING 2.0**
  Lawmaking and Lobbying (State Government) Reporting. Prerequisites: Jour 3900 with a grade of C or better and an institutional GPA of 2.5 or higher. Journalism majors only. Reporting and producing stories about local government entities, e.g. city council, board of education, county commission, etc. Emphasis will be on the “watchdog” role of journalists, access to records and Freedom of Information Act requests and how coverage of local government can be produced to engage the consumers of journalism about urban issues.
• **JOUR 4005 LOCAL GOVERNMENT REPORTING 2.0**
  Local Government Reporting. Prerequisites: Jour 3900 with a grade of C or higher and an institutional GPA of 2.5 or higher. Journalism majors only. Reporting and producing stories about local government entities, e.g. city council, board of education, county commission, etc. Emphasis will be on the “watchdog” role of journalists, access to records and Freedom of Information Act requests and how coverage of local government can be produced to engage the consumers of journalism about urban issues.

• **SPCH 3040 COMMUNICATING ENVIRO ISSUES 3.0**
  Communicating Environmental Issues. Cross-listed with Jour 3040. Prerequisites: Spch 1000 with a grade of C or higher and an institutional GPA of 2.5 or higher. Critical and cultural approaches to analyzing environmental discourses and producing problem-solving environmental messages. Global environmental issues are studied via: advocacy campaigns, journalism, green marketing, industry rhetoric, science and risk communication, media representations, and environmental and animal ethics.

**CHANGE**

• **SPCH 3010 ADVANCED PUBLIC SPEAKING (Change prerequisite; description)**
  Prerequisite: Spch 1000 and Spch 1500 with a grade of C or higher or consent of instructor. Description: Advanced Public Speaking. Prerequisite: Spch 1000 and Spch 1500 with a grade of C or higher or consent of instructor. Development of the proper techniques of persuasion, demonstration, and the preparation and delivery of business and professional speeches.

• **SPCH 3050 SPEECH COMMUN RESEARCH METHODS (Change prerequisites; description)**
  Prerequisites: Spch 1000 with a grade of C or higher. Description: Speech Communication Research Methods. Prerequisite Spch 1000 with a grade of C or higher. Introduction to speech communication research methods, including data collection, analysis and interpretation. Specific methods will include observation, focus groups, interviews, experiments, surveys, and content analysis. An introduction to statistics and statistical tests is included as well.

• **SPCH 3250 PERSUASION-CTW (Change prerequisite; description)**
  Prerequisites: Spch 1000 and Spch 2710 with a grade of C or higher. Description: Persuasion-CTW. Prerequisite Spch 1000 and Spch 2710 with a grade of C or higher. Examine humanistic and/or social scientific perspectives about persuasion. Critical thinking is emphasized through the exploration of topics that include the psychology of persuasion, propaganda, and the formulation of public opinion. Serves as one of the two Critical Thinking Through Writing (CTW) courses required of all speech majors.
COMPUTER SCIENCE

CHANGE

- CSC 4841 COMPUTER ANIMATION (Change prerequisites; description; credit hours)
  Prerequisites: There is no prerequisite for this course. Description: Computer Animation. The basics of three-dimensional computer animation including 3D modeling, lighting, texture mapping, key framing, character animation, rigid and soft body dynamics, particles, cloth, hair, fluid, etc. Credit Hours: 4.0

- CSC 6841 COMPUTER ANIMATION (Change prerequisites; description; credit hours)
  Prerequisites: There is no prerequisite for this course. Description: Computer Animation. The basics of three-dimensional computer animation including 3D modeling, lighting, texture mapping, key framing, character animation, rigid and soft body dynamics, particles, cloth, hair, fluid, etc. Credit Hours: 4.0

ENGLISH

ADD

- ENGL 3125 DIGITAL MEDIA STUDIES 3.0
  Digital Media Studies Foundations for understanding contemporary computational media and network culture through case studies, project work, and critical readings.

- ENGL 8173 18 & 19 C RHETORIC 3.0
  Eighteenth and Nineteenth Century Rhetoric

- ENGL 8174 20 & 21 C RHETORIC 3.0
  Twentieth and Twenty-first Century Rhetoric Contemporary scholarship from foundational Twentieth-Century rhetorical theories to current diverse perspectives that inform Rhetoric and Composition Studies.

CHANGE

- ENGL 8120 WRITING FOR ACADEMIC PUBLIC (Change title; description) Title: Writing for Acad Publication. Description: Proseminar: Writing for Academic Publication Study of academic writing and publication opportunities; focus on submitting conference abstracts, book reviews, and journal articles for publication; prospectus
writing for M.A. and Ph.D. theses and dissertations. Students will have the opportunity to develop and expand their research in the field in which they choose to write a thesis or dissertation.

- **ENGL 8121 ELECTRONIC WRIT AND PUBLISHING** (Change title; description) Title: Rhet of Digital Media. Description: Rhetoric of Digital Media. This course will introduce current theories and practices for design and production with digital media with the goal of developing rhetorically savvy composers and critics. Covers current digital media theory, digital literacy, and theories of visual, aural, haptic, spatial, and other analysis important for digital rhetoric and composition.

- **ENGL 8123 DIGITAL RHETORIC** (Change title; description) Title: Digital Media Production. Description: Digital Media Production This course will be production-intensive and focus on current practices in web design and other digital media design for different applications such as scholarly projects, digital pedagogy, online teaching and digital editing.

- **ENGL 8170 HISTORICAL FOUNDATIONS OF RHET** (Change title; description) Title: Classical Rhetoric: Greek. Description: Classical Rhetoric: Greek Historical foundations examining the theories, practices, and teaching of rhetoric from Archaic Greece through the Hellenistic Age; including nonwestern rhetoric and contemporary receptions of history.

- **ENGL 8171 RHETORIC: CICERO TO AUGUSTINE** (Change title; description) Title: Classical Rhetoric: Roman. Description: Classical Rhetoric: Roman Historical foundations examining the theories, practices, and teaching of rhetoric from the Roman Republic to the fall of the Roman Empire; including nonwestern rhetoric and contemporary receptions of history.

- **ENGL 8172 ENLIGHTENMENT RHETORIC** (Change title; description) Title: Medieval and Renaissance Rhet. Description: Medieval and Renaissance Rhetoric Historical foundations of rhetorical theory and practices from Augustine to Madame de Scudery, covering the Middle Ages through the Renaissance in Great Britain, Europe, the Middle-East, and Asia, with emphasis on major figures, technological advances, and feminist rhetoric.

- **ENGL 8175 MEDIEVAL RHETORIC** (Change title; description) Title: Topics in Rhet & comp. Description: Topics in Rhetoric and Composition Focused study of a problem, question, issue, genre, or specialized subject not covered in other courses. May be repeated as topic varies.
- **ENGL 8180 COMPOSITION THEORY** (Change description) Description: Composition Theory An introduction to the field of Composition Studies, including bibliographical resources and competing theoretical debates; the relationships of literature, rhetoric, and literacy theory to composition studies; the application of composition theory to pedagogy; and major social, political, and curricular contexts for writing.

- **ENGL 8195 COMPOSITION PEDAGOGY** (Change description) Description: Composition Pedagogy An introduction to methods and contemporary practices for teaching writing in classroom and writing center settings; practical applications focusing on strategies for course development and assignment design, response, assessment, and reflective classroom practices.

### GEOSCIENCES

- **GEOG 4538 URBAN HEALTH GIS 4.0**
  The course is an upper-level undergraduate course to graduate level course developed to introduce students to measurement and analysis associated with spatial patterns of diseases. This course is proposed to address contemporary diseases of public health importance and present the quantitative skills that can be used in understanding how spatial patterns arise and what they imply for intervention. Objectives of the courses: (1) examine patterns of disease in place and time; (2) apply geospatial technologies and methods in public health; (3) examine diffusion of disease; and (4) conduct spatial epidemiological studies of selected infectious and noninfectious diseases. By the end of the course, students will gain hands-on experience with a variety of methods and GIS tools useful for the spatial analysis of medical data.

- **GEOS 6538 URBAN HEALTH GIS 4.0**
  The course is an upper-level undergraduate course to graduate level course developed to introduce students to measurement and analysis associated with spatial patterns of diseases. This course is proposed to address contemporary diseases of public health importance and present the quantitative skills that can be used in understanding how spatial patterns arise and what they imply for intervention. Objectives of the courses: (1) examine patterns of disease in place and time; (2) apply geospatial technologies and methods in public health; (3) examine diffusion of disease; and (4) conduct spatial epidemiological studies of selected infectious and noninfectious diseases. By the end of the course, students will gain hands-on experience with a variety of methods and GIS tools useful for the spatial analysis of medical data.
- **GEOS 8400 URBAN HEALTH GIS 4.0**
  The course is an upper-level undergraduate course to graduate level course developed to introduce students to measurement and analysis associated with spatial patterns of diseases. This course is proposed to address contemporary diseases of public health importance and present the quantitative skills that can be used in understanding how spatial patterns arise and what they imply for intervention. Objectives of the courses: (1) examine patterns of disease in place and time; (2) apply geospatial technologies and methods in public health; (3) examine diffusion of disease; and (4) conduct spatial epidemiological studies of selected infectious and noninfectious diseases. By the end of the course, students will gain hands-on experience with a variety of methods and GIS tools useful for the spatial analysis of medical data.

- **GEOS 4030 X-RAY METHODS AND TECHNIQUES 4.0**
  This course describes the theory and use of X-ray diffraction and X-ray Fluorescence methods for the Geosciences primarily although the theory is applicable to other natural sciences. Topics covered include: generation of X-rays, Diffraction, identification of minerals and crystalline materials, theory and use of X-ray fluorescence in major and trace elemental measurements. Laboratory provides hands-on experience with sample preparation, data gathering and synthesis. By the end of this course, it is the instructor’s hope that all students will be able to conduct independent, unsupervised analytical research using GSU’s X-ray labs and equipment. The 6000 level course will feature term project and oral presentation.

- **GEOS 6030 X-RAY METHODS AND TECHNIQUES 4.0**
  This course describes the theory and use of X-ray diffraction and X-ray Fluorescence methods for the Geosciences primarily although the theory is applicable to other natural sciences. Topics covered include: generation of X-rays, Diffraction, identification of minerals and crystalline materials, theory and use of X-ray fluorescence in major and trace elemental measurements. Laboratory provides hands-on experience with sample preparation, data gathering and synthesis. By the end of this course, it is the instructor’s hope that all students will be able to conduct independent, unsupervised analytical research using GSU’s X-ray labs and equipment. The 6000 level course will feature term project and oral presentation.

**HISTORY**

- **HIST 3240 SPROT & LEISURE IN AMERICA 4.0**
The history of sport and leisure in the United States from the Colonial Era to the present, covering sport, tourism, and entertainment

- **HIST 3400 HISTORY OF SEX 4.0**
  Sex has a history. Topics may vary, but include the theory and history of sexuality, the science of sexual difference, the social and cultural ramifications of “sexual revolution”, the historical dimensions of population management and “family planning”, as well as sex as identity, metaphor, and ideology.

- **HIST 3650 INTERNATIONAL HISTORY-AFRICA 4.0**
  This interdisciplinary course explores the long and extensive international history of Africa, focusing on its relations with other civilizations and regions of the world, from medieval times to the present. The weekly inter-related and inter-woven topics will include Medieval African Kingdoms and the Trans-Saharan Trade; the Indian Ocean Trade; European colonialism; Africa, the World Wars and the Cold War; African relations with the US, Western Europe and the former USSR; China and India in Africa; the UN and other global IGOs/NGOs in Africa; Africa and the global economy; globalization and Africa; and Africa and the African Diaspora in the Americas.

- **HIST 4450 HISTORY OF CRIME IN AMERICA 4.0**
  History of Crime in America. An examination of crime from the colonial period to the present. Specific topics include piracy in the eighteenth-century Atlantic world, outlaws in the U.S. West after the Civil War, the Mafia during the twentieth century. Emphasis on the relation between crime, capitalism, the state, and race.

**MATHEMATICS AND STATISTICS**

**ADD**

- **MATH 8500 SYSTEMS BIOLOGY 3.0**
  Title: Systems Biology Prerequisite: Grade of C or higher in MATH 6010 or MATH 6275. Cross-listed with Biol 8500 and Neur 8500. This course provides an introduction to systems biology from mathematical modeling point of view. It will introduce biology students to mathematical modeling, and mathematical students to systems biology. Biological topics will include gene systems, protein systems, metabolic systems and signaling systems. Mathematical tools will include basic modeling concepts, approximation, static networks, linear vs. nonlinear systems and how to linearize nonlinear systems, and parameter estimation and optimization. Specific case studies will include integrative analysis of genome, protein, and metabolite data, systems biology in medicine and drug development, and synthetic biology.
• **MATH 8505 ADVANCED MATHEMATICAL BIOLOGY 3.0**
  Title: Math 8505. Prerequisite: Grade of C or higher in MATH 6010 (BIOL 6930) or MATH 6275 or MATH 8510, or with permission from the instructor. Cross-listed with Neur 8395 and Biol 8505. This graduate level course extends mathematical methods and models of biological systems, covered in Math 4010/6010 (BIOL 6930) “Mathematical Biology”. The main focus will be on multidimensional and spatial models of biological systems. The topics will include the dispersal of biological populations and age structure on population growth; rates of spread of invading organisms and population persistence; branching random walks and chain reactions; stochastic and Markov models of biological systems; cellular automata models with deterministic and stochastic rules, related to the infectious disease transmission and control; the Game of Life, and pattern formation in biological networks of different nature.

• **STAT 8550 APPLIED DATA ANALYSIS 3.0**
  Title: Applied functional data analysis. Prerequisite: Math 4752 or Math 6752. Credits: 3 credits. Description: Functional data arises in many scientific areas. With an increasing number of cases, the collected data are curves or functions. This course introduces basic concepts and methods of functional data analysis. Topics include: functional data representation, smoothing methods, exploration of functional data, registration of functional data, functional principal component analysis, canonical correlation and discriminant analysis, functional linear models.

**MIDDLE EAST INSTITUTE**

**CHANGE**

• **ARBC 3100 SPOKEN ARABIC DIALECT (Change credit hours) Credit Hours: 4.0**

**MUSIC**

**ADD**

• **MUS 8680 SEM IN INSTR CONDUCTING 2.0**
  Seminar in Instrumental Conducting. Prerequisite: MUS 6490 with a grade of B or higher, or equivalent, or consent of instructor. Examination of the theoretical, practical, and artistic aspects of conducting and rehearsing instrumental ensembles.

**NEUROSCIENCE**

**ADD**
• NEUR 4360 MATHEMATICAL BIOLOGY 3.0  
NEUR 3. 000 Credit Hours. Prerequisite: Grade of C or higher in MATH 2212 or MATH 2202. This course provides an introduction to the use of continuous and discrete differential equations in the biological sciences. Biological topics will include single species and interacting population dynamics, modeling infectious and dynamic diseases, regulation of cell function, molecular interactions and receptor-ligand binding, biological oscillators, and an introduction to biological pattern formation. There will also be discussions of current topics of interest such as Tumor Growth and Angiogenesis, HIV and AIDS, and Control of the Mitotic Clock. Mathematical tools such as phase portraits, bifurcation diagrams, perturbation theory, and parameter estimation techniques that are necessary to analyze and interpret biological models will also be covered.

• NEUR 4370 APPLIED DYNAMICAL SYSTEMS 3.0  
NEUR 4370: Applied Dynamical Systems. Prerequisite: Math 3260 and Math 3435. An introduction to discrete and continuous dynamical systems. Topics include: phase space; linear and nonlinear systems; structural stability; classification of equilibrium states, invariant manifolds; Poincar maps, fixed points and period orbits; stability boundaries; local bifurcations; homoclinic orbits; routes to chaos in dissipative systems; applications from physics, biology, population dynamics, economics. 3.000 Credit Hours

• NEUR 8385 SYSTMES BIOLOGY 3.0  
NEUR 8385/Math 8500/Biol 8xxx. Prerequisite: Grade of C or higher in MATH 6010 or MATH 6275. This course provides an introduction to systems biology from mathematical modeling point of view. It will introduce biology students to mathematical modeling, and mathematical students to systems biology. Biological topics will include gene systems, protein systems, metabolic systems and signaling systems. Mathematical tools will include basic modeling concepts, approximation, static networks, linear vs. nonlinear systems and how to linearize nonlinear systems, and parameter estimation and optimization. Specific case studies will include integrative analysis of genome, protein, and metabolite data, systems biology in medicine and drug development, and synthetic biology.

• NEUR 8395 ADVANCED MATHEMATICAL BIOLOGY 3.0  
NEUR 8395/MATH 8505. This graduate level course extends mathematical methods and models of biological systems, covered in Math 4010/6010 (BIO 6930) “Mathematical Biology”. The main focus will be on multidimensional and spatial models of biological systems. The topics will include the dispersal of biological populations and age structure on population growth; rates of spread of invading organisms and population persistence; branching random walks and chain reactions; stochastic and Markov models of biological systems; cellular automata models with deterministic and stochastic rules, related to the
infectious disease transmission and control; the Game of Life, and pattern formation in biological networks of different nature.

**PHILOSOPHY**

**ADD**

- **PHIL 4870 FEMINIST PHILOSOPHY 3.0**
  Feminist Philosophy. Prerequisite: One 2000 or 3000-level philosophy course, or consent of instructor. Classical and contemporary issues concerning women, such as discrimination on the basis of gender, class, race, or sexuality, whether gender is natural or constructed, and historical roots of feminist and anti-feminist perspectives.

- **PHIL 6870 FEMINIST PHILOSOPHY 3.0**
  Feminist Philosophy. Prerequisite: One 2000 or 3000-level philosophy course, or consent of instructor. Classical and contemporary issues concerning women, such as discrimination on the basis of gender, class, race, or sexuality, whether gender is natural or constructed, and historical roots of feminist and anti-feminist perspectives.

- **PHIL 8075 SEMINAR 19TH CENTURY PHIL 3.0**
  Seminar in 19th Century Philosophy. Detailed examination of a major figure, theme, or text from the long 19th century (roughly 1789-1914). May be repeated but only if content varies. A maximum of six credit hours may be applied toward the major.

- **PHIL 8085 SEMINAR: HISTORY OF PHIL 3.0**
  Seminar in the History of Philosophy. Detailed examination of a major figure, theme, or text from the history of philosophy. May be repeated once if topic varies. A maximum of six credit hours may be applied toward the degree.

**CHANGE**

- **PHIL 2010 INTRODUCTION TO PHILOSOPHY (Change description)**
  Description: Introduction to Philosophy. We will explore some fascinating questions about human existence and discuss various answers offered by philosophers—questions such as: Does God exist? How should I live my life? What is justice? What is human nature? Do we have free will? What is the meaning of life? Students are not required to take Philosophy 1010 (Critical Thinking) before taking Philosophy 2010.

- **PHIL 3010 HIST-W-PHIL I- ANCIENT & MEDIEVAL (Change title; description)**
  Title: History-Westrn Phil I: Ancient. Description: History of Western Philosophy I: Ancient.
Development of European philosophy from the early Greeks to the Romans. Typically included are Socrates, Plato, and Aristotle.

- PHIL 3020 HISTORY-WESTERN PHIL II: MODERN (Change title, description) Title: History-Western Phil II: Modern. Description: History of Western Philosophy II: Modern. Development of European philosophy from the Renaissance to the Enlightenment. Typically included are Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant.

DROP

- PHIL 4610 HINDUISM
- PHIL 4615 BUDDHISM
- PHIL 4620 CONFUCIANISM AND TAOISM
- PHIL 4625 ZEN AND SHINTO
- PHIL 4650 RELIGION AND ETHICS
- PHIL 4860 PHIL PERSPECTIVES ON WOMEN
- PHIL 6610 HINDUISM
- PHIL 6615 BUDDHISM
- PHIL 6620 CONFUCIANISM AND TAOISM
- PHIL 6625 ZEN AND SHINTO
- PHIL 6860 PHIL PERSPECTIVES ON WOMEN

PHYSICS & ASTROMONY

CHANGE

- PHYS 1111K INTRODUCTORY PHYSICS I (Change prerequisites; description) Prerequisites: Math 1112 or Math 1113 with grade of C or higher. Description: Introductory Physics I. Prerequisite: Math 1112 or Math 1113 with grade of C or higher. Three lecture and two laboratory hours a week. This introductory course will include material from mechanics, thermodynamics, and waves. Elementary algebra and trigonometry will be used. Phys 1111K and Phys 1112K meet the science requirement for the B.A., the B.B.A., and the B.S. in Education degrees, and the physics requirement for students in the biological and life sciences. Designed primarily as a terminal sequence. Most natural science majors should enroll in Phys 2211K and Phys 2212K.

- PHYS 1112K INTRODUCTORY PHYSICS II (Change prerequisites; description) Prerequisites: Phys 1111K or Phys 2211K with grade of C or higher. Description:
Introductory Physics II. Prerequisite: Phys 1111K or Phys 2211K with grade of C or higher. Three lecture and two laboratory hours a week. This introductory course will include material from electromagnetism, light, and modern physics. Elementary algebra and trigonometry will be used. Phys 1111K and Phys 1112K meet the science requirement for the B.A., the B.B.A., and the B.S. in Education degrees, and the physics requirement for students in the biological and life sciences. Most natural science majors should enroll in Phys 2211K and Phys 2212K.

**POLITICAL SCIENCE**

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<tr>
<td>• POLS 8145 LAW, COURTS AND POLICY 3.0</td>
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<td>Law, Courts &amp; Policy will examine the role courts play in the creation, interpretation and implementation of public policy.</td>
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<td>• POLS 8225 COMPARATIVE POLITICAL BEHAVIOR 3.0</td>
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<td>Comparative Political Behavior Analysis of classic and cutting-edge theories of political behavior from American Politics and Comparative Politics. Prerequisite: None</td>
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<td>• POLS 8830 ADVANCED QUANTITATIVE METHODS 3.0</td>
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<td>This course covers a variety of topics in advanced quantitative methods with primary focus on Maximum Likelihood Estimation. The topics will be covered at both a theoretical and applied level to provide students a conceptual understanding of the techniques as well as to implement them in applied research.</td>
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<tr>
<td>• POLS 8840 QUALITATIVE RESEARCH METHODS 3.0</td>
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<td>Advanced course on qualitative methods and research design in political science. Topics include concept formation and case selection; process-tracing and within-case analysis; simple set-theory and logic for cross-unit analysis; and coverage of field methods such as subject interviewing, archival research, and field experiments. Interpretive methods are also featured.</td>
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**PSYCHOLOGY**

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<td>• PSYC 4125 LEARNING LAB 1.0</td>
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<td>Students will experience laboratory activities related to the psychological study of learning. Topics and activities will include classical conditioning, operant conditioning,</td>
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habituation and dishabituation, sensitization, relational learning, memory, and brain-behavior relations. Psychology majors, particularly those who plan to attend graduate school, are encouraged to register.

- **PSYC 8520 COG, AFF, & SOC ASPECTS OF BHV 3.0**
  Cognitive, Affective, and Social Aspects of Behavior. Overview of theory and research related cognitive, affective, and social aspects of behavior.

- **PSYC 8531 SPECIAL TOPICS IN EVOLUTION 1.0-3.0**
  Special Topics in Evolution. Focused and systematic examination of theoretical and empirical issues associated with particular topics from the evolution of behavior, sociality, and cognition. These include topics such as the evolution of cooperation, conflict, social justice, interpersonal relationships, mating systems and sexual relationships, brain and cognition, communication, language and culture.

**CHANGE**

- **PSYC 3530 ADV RSRCH DESIGN/DATA ANA-CTW (Change description)**
  Description: PSYC 3530 provides psychology majors with experience in research design, data analysis, and scientific communication needed for higher-level understanding in 4000-level courses and the reading and writing of formal scientific reports. Topics include experimental and quasi-experimental design, statistical techniques for comparing multiple groups, and the structure and style of scientific writing in psychology. PSYC 3530 serves as one of the two Critical Thinking Through Writing (CTW) courses required of all psychology majors. As such, course assignments focus on effective analysis and evaluation of concepts, formulation and presentation of persuasive arguments, and describing ideas clearly and thoughtfully in writing. Students who are unable to pass Psyc 3530 with a grade of C or better in two attempts shall not be permitted to repeat the course or to enroll in any departmental courses for which Psyc 3530 is a prerequisite.

- **PSYC 4000 LAB EXP IN PSYCH-CTW (Change description)**
  Description: PSYC 4000 provides psychology majors with experience in research design, data analysis, and scientific communication needed for the development and writing of senior-year theses and graduate study. Topics include designing an original research project on a psychological topic, analyzing data, and presenting the findings in an APA-style research report. PSYC 4000 serves as one of the two Critical Thinking Through Writing (CTW) courses required of all psychology majors.
• PSYC 9240 CLINICAL SUPERVISION (Change credit hours; description) Credit hours: 1.0-3.0. Description: Clinical Supervision, Consultation and Evaluation. Overview of theory and research related supervision, consultation, and evaluation and the role of psychologists in these areas.

RELIGIOUS STUDIES

ADD

• JST 6500 JEWISH STUDIES INTERNSHIP 3.0
  Faculty-supervised internship. Placement to be determined in consultation with student. Possibilities include a synagogue, school, museum, theater, anti-defamation organization, civil/human rights organization, charitable fund, nursing home, film or book festival, community center, or periodical.

• RELS 4480 MODERN ISLAM TRADITION & TRAN 3.0
  The purpose of this course is to understand the Islamic tradition in the contemporary world through a study of its history, society, institutions, as well as its various relationships to non-Muslim societies and cultures. The task is to try to gain familiarity with the multiple manifestations and transformations of Islam from the pre-modern to the modern periods, with an emphasis on the changes brought about by the rise of European hegemony and colonial modernity. As a survey, the course will review broad socio-historical patterns in order to give students the ability to better assess a range of contemporary issues related to Islam as well as provide a basis through which further investigations can be made.

• RELS 6480 MODERN ISLAM TRADITION & TRAN 3.0
  The purpose of this course is to understand the Islamic tradition in the contemporary world through a study of its history, society, institutions, as well as its various relationships to non-Muslim societies and cultures. The task is to try to gain familiarity with the multiple manifestations and transformations of Islam from the pre-modern to the modern periods, with an emphasis on the changes brought about by the rise of European hegemony and colonial modernity. As a survey, the course will review broad socio-historical patterns in order to give students the ability to better assess a range of contemporary issues related to Islam as well as provide a basis through which further investigations can be made.

SOCIOLOGY

ADD
• SOCI 3130 SOCIOLOGY OF FOOD 3.0
Soci 3130: Sociology of Food The biological requirement for food has tricked many into overlooking its sociological relevance. Food is intimately connected to vital sociological issues of power and identity; after all, “you are what you eat.” When you eat, how you eat, why you eat, and with whom speak volumes on our personalities, our social interactions, our social differentiations and stratifications, and our ethnic, gender, sexual, economic, political, religious, geographic, family, and life-stage identities. This course is designed as an introduction to the emerging field of the sociology of food. In it we will examine the cultural meanings of food production, distribution, preparation, and consumption. Topics will include food and the construction of identity, dining and manners, food choices, food movements (vegetarianism, organic farming, slow food, etc.), work in the food industry, food controversies (irradiation, genetically engineered food, E. coli, fair trade, etc.), family and sexual relationships, eating disorders, fast food, globalizing markets, and others. The requirements for the course include daily reaction papers, three papers, and a final exam. There are no prerequisites for this course.

CHANGE

• SOCI 9000 TEACHING SOCIOLOGY (Change description) Description: This seminar focuses on pedagogical issues and techniques of teaching sociology at the college and university levels. Prerequisite: (1) Membership and good standing in Sociology graduate program. (2) For Doctoral-level students, a Master’s degree in sociology or 18 credit hours in graduate Sociology coursework. (3) For Masters-level students, completion of MA-level Sociology coursework. (4) Permission of instructor.

WOMENS STUDIES INSTITUTE

ADD

• WST 8300 FEMINIST MEDIA STUDIES 3.0
Feminist Media Studies. (Same as COMM 8000). A seminar providing a transdisciplinary, transnational exploration of the various feminist theoretical and methodological approaches to the field of media studies, with attention to its historical, cultural, social, political and economic dimensions.

CHANGE

Changed the prerequisite and description of the following courses to include: WSt 2010 with a grade of C or better to all 3000- and 4000-level courses.
WST 3010, WST 3030, WST 3120, WST 3130, WST 3140, WST 3150, WST 3356, WST 3960, WST 3980, WST 3990, WST 3995, WST 4020, WST 4040, WST 4050, WST 4060, WST 4070, WST 4116, WST 4130, WST 4150, WST 4210, WST 4240, WST 4310, WST 4340, WST 4360, WST 4370, WST 4440, WST 4470, WST 4510, WST 4520, WST 4590, WST 4620, WST 4650, WST 4740, WST 4750, WST 4760, WST 4772, WST 4780, WST 4790, WST 4810, WST 4820, WST 4830, WST 4840, WST 4842, WST 4844, WST 4845, WST 4870, WST 4880, WST 4910, WST 4911, WST 4912, WST 4920, WST 4950, WST 4995

WST 4360 PHIL PERSPECTIVES ON WOMEN (Change title; description) Title Feminist Philosophy. Description: Feminist Philosophy. Prerequisite: WSt 2010 with a grade of C or higher. (Same as PHIL 4870). Classical and contemporary issues concerning women, such as discrimination on the basis of gender, class, race, or sexuality, whether gender is natural or constructed, and historical roots of feminist and anti-feminist perspectives.

WST 6860 PHIL PERSPECTIVES ON WOMEN (Change title; description) Title Feminist Philosophy. Description: Feminist Philosophy. Prerequisite: WSt 2010 with a grade of C or higher. (Same as PHIL 6870). Classical and contemporary issues concerning women, such as discrimination on the basis of gender, class, race, or sexuality, whether gender is natural or constructed, and historical roots of feminist and anti-feminist perspectives.