

College of Arts and Sciences

Biology (BIOL)

- **BIOL 1305 and 1113: Ecology and Environmental Problems**
 - An introduction to ecological principles and the analysis of environmental problems.
- **BIOL 3309 and 3109: Principles of Ecology**
 - An examination of ecological systems emphasizing populations, communities, and ecosystems.
- **BIOL 3301: Field Ecology**
 - Teaches students how to design, conduct, analyze and report on the results of field studies in aquatic and terrestrial environments.
- **BIOL 4310: Community Ecology**
 - An investigation of theoretical and experimental approaches to understanding the composition, diversity, and structure of plant, animal, and microbial communities.
- **BIOL 5309: Advanced Ecology**
 - A detailed examination of the structural and functional relationships underlying the organization of populations, communities, and ecosystems.
- **BIOL 5310: Advanced Community Ecology**
 - An investigation of both theoretical and experimental approaches to understanding the composition, diversity, and structure of plant, animal, and microbial communities.

English (ENGL)

- **ENGL 3386: Literature and Science**
 - An exploration of the relations between science and technology and literature and discourse.
- **ENGL 5372: Technical Reports**
 - Theory and practice of reports and proposals.
- **ENGL 5390: Writing for Publication**
 - Designed to teach students in graduate programs how to write clear and effective articles for professional journals in their field.
- **Field Methods (in development)**
 - No course description available.

Environmental Toxicology (ENTX)

- **ENTX 6312: Biological Threats in the Environment**
 - Detailed examination of characteristics, surveillance, and control of naturally occurring zoonoses and diseases exploitable as biological weapon agents.
- **ENTX 6365: Fundamentals of Aquatic Ecotoxicology**
 - Covers effects of water pollution on aquatic organisms and human health. Subjects include fate and transport in aqueous systems, acute toxicity and toxicity tests and effects of pollutants on aquatic systems from molecular to global levels.

- **ENTX 6445: Chemical Sources and Fates in Environmental Systems**
 - Environmental phenomena and physical properties of chemicals are used to understand processes governing chemical fate in the environment from global to micro scales.

Economics (ECO)

- **ECO 3336: Environmental Economics**
 - Applies economic models to current local and global environmental issues with an emphasis on evaluating policies.
- **ECO 5317: Natural Resource and Environmental Economics**
 - Covers theory and policy in natural resource and environmental economics. Optimal rules for renewable and nonrenewable patterns of use, public policy.

Atmospheric Science (ATMO)

- **ATMO 1100. Atmospheric Science Lab**
 - Discussion and practical experience in weather analysis, methods of instrumentation, and observational meteorology.
- **ATMO 1300: Introduction to Atmospheric Science**
 - An investigation of atmospheric properties and physical processes that determine current weather events and long-term climate conditions.
- **ATMO 2301: Weather, Climate, and Human Activities**
 - Observation and analysis of the impacts of weather and climate on human activity.
- **ATMO 2316: Severe and Hazardous Weather**
 - Basic meteorology of severe or hazardous weather, focusing on the events affecting the US, especially the Great Plains and adjacent regions in Texas.
- **ATMO 3301: General Meteorology**
 - A basic student of atmospheric processes and the principles that control them.
- **ATMO 5302: Weather, Climate, and Applications**
 - Basic principles of atmospheric science, with particular emphasis on applications, including severe weather, air pollution, and global climate change.

Geography (GEOG)

- **GEOG 1401: Physical Geography**
 - Study of the atmospheric and terrestrial systems that shape our natural environment, especially the global patterns of climate, land forms, and vegetation.
- **GEOG 3301 (5301): Remote Sensing of the Environment**
 - Introduction to remote sensing techniques, including air photo interpretation and digital satellite image processing. Emphasis on the use of remote sensing imagery in geographic information systems.
- **GEOG 3310: Environmental Change**
 - Investigates changes in climate, hydrology, soils, biota and landforms since the start of the Ice Age, and the effects of the environmental changes on humans.
- **GEOL 3323: Environmental Geology**

- Study of geological processes that effect human activities, emphasizing natural hazards, water resources, waste disposal, energy, mineral resources, and land use and planning.
- **GEOL 3328: Geology of Energy Resources**
 - Origin, distribution, and exploitation of geological resources of energy, with emphasis on hydrocarbons, coal, and nuclear energy.
- **GEOG 3353: Man, Resources, and Environment**
 - Study of the interrelated problems of population growth, efficient use of natural resources, and human disruption of the earth's environment.
- **GEOG 4301: Geomorphology in Environmental Management**
 - Evaluation and analysis of earth-forming processes and terrain features in relation to human activities.
- **GEOG 4321: Biogeography**
 - Study of plants and animals in their spatial context, functional interaction, and as related to human impacts.

Political Science (POLS)

- **POLS 5395: Practicum in Survey Research**
 - Introduces students to the operation and management of a survey research lab.

Public Administration (PUAD)

- **PUAD 3300: Environmental Politics and Policy**
 - No course description available.
- **PUAD 3300: Sustainability: Energy, Environment, and Society**
 - No course description available.
- **PUAD 3300: Energy Politics and Law**
 - No course description available.
- **PUAD 5320: Program Evaluation and Quantitative Analysis**
 - Introduction to techniques of analyzing public policies, including descriptive and inferential statistics and computer applications.
- **PUAD 5321: Advanced Quantitative Methods in Public Policy and Administration**
 - Quantitative methods and approaches for analyzing public policy questions and data, including inferential statistics and the use of computer-based statistical programs.
- **PUAD 5333: Environmental Policy and Administration**
 - Analysis of the formulation, implementation, and the evaluation of environmental and natural resources policy, emphasizing theoretical foundations, political context, and principles of administering environmental policies.
- **PUAD 5335: Management of Non-profit Organizations**
 - Study of the third sector and administration of non-profits, including laws, boards, personnel, volunteers, finances, grant writing, fundraising, marketing, and planning.
- **PUAD 5348: Environmental Policy and Administration**
 - Special studies on subjects in public administration. Topics will vary from semester to semester.

- **PUAD 5348: Urban Planning and Sustainability Policy**
 - Special studies on subjects in public administration. Topics will vary from semester to semester.
- **PUAD 5348: Climate Science and Policy**
 - Special studies on subjects in public administration. Topics will vary from semester to semester.
- **PUAD 5348: Climate Data and Analysis**
 - Special studies on subjects in public administration. Topics will vary from semester to semester.
- **PUAD 5348: Climate and Weather Hazards**
 - Special studies on subjects in public administration. Topics will vary from semester to semester.

College of Agriculture and Natural Resources Management

Agricultural and Applied Economics (AAEC)

- **AAEC 4309: Sustaining Global Ecology, Natural Resources, and Economy**
 - Challenges to global markets and environment across diverse systems and histories.
- **AAEC 4313: Natural Resource Economics**
 - Economics of natural resource use and allocation including land economics, economics of water development, and environmental economics.

Plant and Soil Sciences (PSS)

- **PSS 4337: Environmental Soil Science**
 - Physical, chemical, and biological properties and processes of soil as they relate to environmental quality.
- **PSS 5351/6331: Environmental Instrumentation and Measurements**
 - Setting up and programming a data logger to collect environmental measurements related to soil, atmosphere, and plant conditions using a variety of sensors.

Natural Resources Management (NRM)

- **NRM 1300: Environmental Science as a Social Pursuit**
 - Application of scientific methods to global and environmental issues. Explores the impact of culture and science on core natural resources such as food and clean air.
- **NRM 1401: Introduction to Natural Resources Management**
 - Observe, describe, and understand phenomena in the natural world. Examines the roles of natural and social science in understanding interactions among humans and natural resources.
- **NRM 3307: Principles of Conservation Science**
 - A survey of the theory and practices of conservation biology. Emphasis is placed on methods used to maintain plant and animal biodiversity.

- **NRM 4301: Urban Ecology and Human Dimensions**
 - Ecological approach to nongame wildlife population management within urban environments for nuisance species and species of conservation concern. Case studies, public policies, socioeconomic factors and other issues regarding human dimensions of ecology and wildlife management are examined.
- **NRM 4320: Natural Resource Policy**
 - Emphasis on the human dimension of natural resources management. Historical, agency, and private organization roles in policy and conflict.
- **NRM 5320: Natural Resource Biopolitics**
 - Policy, planning, and conflict resolution from a natural resource management perspective. Historical, agency, and private organization roles in natural resource management are evaluated.
- **NRM 5337: Fish and Wildlife Population Modeling**
 - The development and use of models to analyze and simulate ecological process in fish and wildlife populations and communities.
- **NRM 5347: Advanced Conservation Science**
 - A survey of the theory and practice of conservation biology for advanced students.
- **NRM 6000-002: Integrated Wildlife-Climate Response Modeling**
 - Ecological approach of combining quantitative techniques in climate and ecological sciences.

College of Business Administration

Energy Commerce (ENCO)

- **ENCO 3301: Energy Industry Fundamentals**
 - History and overview of the energy industry providing basics of oil and gas exploration, production, electricity generation and transmission and emerging alternative technologies.
- **ENCO 4362: U.S. Energy Policy and Regulation**
 - Focuses on U.S. government policy and regulation and impact on the energy business.

College of Engineering

Civil Engineering (CE)

- **CE 3309/3171: Environmental Engineering**
 - Water and wastewater characteristics and system design for water and wastewater treatment. Introduction of techniques of solid hazardous waste management and air pollution control.
- **CE 3321: Introduction to Geotechnical Engineering**
 - Physical properties of soils; theories of soil strength, consolidation, and settlement; soil stabilization; slope stability analysis; selected design projects.
- **CE 3354: Engineering Hydrology**

- Analysis and design methods related to the occurrence and distribution of surface and groundwater; precipitation, infiltration, runoff, and frequency analysis.
- **CE 4333: Special Problems in Water Resource**
 - Individual studies in water resources.
- **CE 4363: Groundwater Hydrology**
 - Groundwater flow; well hydraulics, development, and management of groundwater resources; water quality; mathematical modeling with available software.
- **CE 5185: Microbial Applications in Environmental Engineering Lab**
 - Determine concentrations of coliforms, nutrients, and organic pollutants in water. Analyze water quality.
- **CE 5321: Advanced Soil Engineering**
 - Introduction to physio-chemical properties of soil; soil classification; permeability; principle of effective stress; stress deformation; stress paths and strength characteristics; partly saturate soils; advanced consolidation theory; secondary consolidation; field instrumentation.
- **CE 5333: Advance Work in Water Resourced**
 - Individual studies in advanced water resources.
- **CE 5361: Surface Water Hydrology**
 - Advanced study of the hydrology cycle: hydrologic abstractions, surface-runoff mechanics, hydrographs, baseflow separation, data analysis, reservoir and channel routing, and an introduction to rainfall-runoff modeling.
- **CE 5363: Groundwater Hydrology**
 - Groundwater flow, well hydraulics, development, and management of groundwater resources; water quality, mathematical modeling with available software.
- **CE 5364: Groundwater Transport Phenomena**
 - Study of sources and fates of contamination in groundwater. Mathematical modeling of reactive and nonreactive pollutant movement.
- **CE 5366: Water Resources Management**
 - Models and other technical elements of water resources systems in context of the political, social, and other environments in which they exist.

Environmental Engineering (ENVE)

- **ENVE 4107: Advanced Physical and Chemical Municipal Water Treatment Lab**
 - Characterization of water using alkalinity, pH, BOI, and solids concentrations.
- **ENVE 4385/4185: Microbial Applications in Environmental Engineering Lab**
 - Presents information regarding bacterial cell structure and microbial genetics, metabolism and the role of microbes in the design of treatment processes and water/wastewater reuse issues.
- **ENVE 4315: Environmental Chemistry for Pollution Management**
 - Introduces the fundamental knowledge of reaction kinetics and chemical equilibriums relevant to water quality in natural and engineered processes.