

Environmental Science (EVRN)

Courses

EVRN 115 Natural History of Kansas (3 Hours)

Natural History of Kansas describes physical and biological processes that have led to the present Kansas landscape. Physical science topics include geology, climate patterns and soil formation. Biological science topics include ecology and a survey of the plants and animals of Kansas. The course will consider how the physical and biological environment relates to past and present human resource uses.

EVRN 124 Oceanus: Essentials of Oceanography (3 Hours)

This course for beginning students focuses on the marine environment as a unique feature of the planet Earth and investigates areas of intense scientific and public concern: the pervasiveness of the ocean and its effect on the earth's weather, its stunning physical size and diversity of contained life forms, its contributions to the physical and historical development of man, its impact on geopolitical and economic matters, and the impact of oceanic pollutants and the potential exploitation of marine resources.

EVRN 130 Environmental Science (3 Hours) †

Environmental Science seeks to describe problems and solutions associated with human use of natural resources. Students will study the major physical and biological processes that govern the complex interactions in natural ecosystems. Major course topics include human population growth, resource use and pollution. Practical solutions aimed at sustainability will be identified and examined. This is an introductory, nonscience-major survey course. This course may offer Honors sections; check the current credit class schedule for details.

EVRN 132 Environmental Science Laboratory* (2 Hours) †

Prerequisites or corequisites: EVRN 130.

In this lab, students will explore ecological principles that are necessary for understanding and solving environmental problems. Students will sample the local environment, conduct lab experiments, analyze data, and attend field trips. Field trips may include visits to a local prairie ecosystem, stream ecosystem, forest ecosystem, sustainably designed architecture, and/or a wastewater treatment plant. EVRN 132 students must be currently enrolled in EVRN 130 or have successfully completed EVRN 130 within the last three years. This course may offer Honors sections; check the current credit class schedule for details.

EVRN 134 Principles of Sustainability (3 Hours)

Principles of Sustainability introduces students to the social, economic and environmental dimensions of sustainability and sustainable development. The course will critically examine the use of sustainable principles to guide decision making and problem solving in personal, campus, community and global contexts. Students will engage in a variety of individual, group, campus and community activities and collaborate with campus and community offices and agencies in order to identify, assess and address local sustainability needs. Students will be required to present their projects at a public sustainability forum.

EVRN 155 Bioethics* (3 Hours)

Prerequisites : BIOL 121 or Department approval.

This course introduces students to the scientific, ethical and legal issues relevant to the discipline of biology and those raised by the rapid development of new biological technologies. Students will examine the major theories of ethics, including deontology, utilitarianism, and select others. Topics include: beginning of life issues such as contraception, abortion, and nontraditional methods of human reproduction; end of life issues such as advance healthcare directives and physician-assisted suicide; and other issues such as experimentation on human and animal subjects and human environmental impacts. EVRN 155 and PHIL 155 are the same courses; only enroll in one.

EVRN 250 Bioethics in Science and Research* (3 Hours)

Prerequisites : BIOL 121 or BIOL 125 or BIOL 127 or BIOL 132 or BIOL 135 or BIOL 140 or BIOL 144 or EVRN 115 or EVRN 124 or EVRN 130 or EVRN 134 or EVRN 255 .

This course introduces students to the scientific, ethical, and legal issues relevant to the sciences and research including those raised by the rapid development of new technologies. This course will examine the bioethical and legal dimensions of current controversies across a range of scientific fields. Topics will include, genetic engineering and genetically modified organisms, stem cell and cloning research, human and animal subject research, human impacts on the environment, patenting life, the use of AI and other technologies in science and medicine, research misconduct, conflicts of interest, informed consent, and data management. Students will employ scientific, legal, and philosophical tools to critically evaluate complex bioethical issues, and will be challenged to think critically about the role of scientists in society as well as the impacts of science on both humanity and the natural world.

EVRN 255 Freshwater Ecology (4 Hours)

Freshwater Ecology describes the interaction between freshwater organisms and their environment. Structure and function of streams, lakes, wetlands, and groundwater systems will be explored. Students will learn life histories and identification skills for aquatic organisms including plankton, fish, mollusks, insects and plants. The influence of abiotic factors such as temperature, oxygen, and nutrients will be examined. Field and classroom experiments will be used to apply concepts learned. Students will study local water quality issues and aquatic management strategies to improve ecosystem health.



EVRN 275 Nature, Law, and Environmental Protection* (3 Hours)

Prerequisites : EVRN 130.

This is a course in environmental regulation which examines the basic structure of the legal system and examines the role of law in protecting natural resources and the environment. Students will explore historical perspectives about natural resources and environmental protection, examine the sources and limitations of legal authority, distinguish procedural and substantive legal requirements, and learn how these and additional legal mechanisms operate under common law, constitutional, statutory, and regulatory frameworks. Students will learn how to conduct legal research, analyze and write case briefs, and use legal analysis and research tools to draft a legal research paper. Key provisions of the major federal environmental laws will be examined including the National Environmental Policy Act (NEPA); the Clean Water Act (CWA); The Clean Air Act (CAA); the Resource, Conservation, and Recovery Act (RCRA); the Toxic Substances Control Act (TSCA); the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); the Comprehensive Liability and Control Act (CERCLA); the Endangered Species Act (ESA); and emerging climate change regulatory actions and initiatives pursuant to existing federal laws.