

Environmental Studies Program

Why study environmental studies?

The Environmental Studies Program at the University of Kansas, established in 1971, is one of the oldest environmental studies programs in the country. The KU Environmental Studies Program provides a rigorous degree that balances learning in the physical and social sciences along with the arts and humanities. Learning Pathways (<https://esp.ku.edu/learning-pathways/>), thematic areas of study that match student interest to the environmental expertise of our faculty, are a key aspect of our unique program.

The program provides students with the tools they need to investigate environmental phenomena, including soil sampling and freshwater ecology to policy-making and social science. Environmental Studies students learn how to put together what other disciplines take apart.

Our pedagogy is focused on engaged learning. Learning Pathways (<https://esp.ku.edu/learning-pathways/>) concentrations provide options for a deeper dive within our major, with recommended courses, faculty, and experiences. In addition to a vibrant classroom curriculum (<https://esp.ku.edu/degrees/>), Environmental Studies students are encouraged to participate in the many exciting experiential learning opportunities that KU offers, including undergraduate research (<https://esp.ku.edu/undergraduate-research/>), co-curricular projects (<http://esp.ku.edu/projects/>), and internships (<http://esp.ku.edu/internships/>).

Environmental Studies equips students to get involved in the intellectual life of the university and to connect to environmental projects in the surrounding community. These experiences enhance the success of students along their path to graduation and rewarding careers.

Undergraduate Programs

This interdisciplinary major gives students a fundamental knowledge of the human environment, the dimensions of human impact on the environment, and holistic approaches to solving problems resulting from this impact. The human environment includes all facets of human activity affecting the environment, such as philosophical and ethical issues, environmental resource use and misuse, population biology, and the chemistry of the atmosphere.

Electives

The goals of the program are

1. To provide a holistic view of the environment, one in which the synergistic nature of perturbations, natural and anthropogenic, can be understood and
2. To provide the technical and evaluative skills for active participation in an environmental career.

The environment is the central theme around which a liberal arts education is focused.

Students may declare an interest in environmental studies or a major in environmental studies by filling out the appropriate forms. CLAS Interest Code and Major Declaration forms are available from College Undergraduate Academic Services (<https://collegeundergrad.ku.edu/>), 109 Strong Hall, or in the environmental studies office. Students are

strongly encouraged to declare an environmental studies major as soon as possible.

Electives provide the opportunity to specialize, and these can be chosen by consulting the various pathways in the major (<https://esp.ku.edu/learning-pathways/>), which contain a list of faculty members associated with the pathway who are available to help decide on electives and environmental careers. An elective approval form must be submitted to 109 Strong Hall before a student is allowed to graduate. Forms may be obtained from the environmental studies office. Except for study abroad, a maximum of 8 hours of non-classroom course work may be counted toward electives (e.g., internship or research).

Exceptions and Substitutions

All substitutions must be approved by a student's environmental studies faculty advisor. A student must submit a requirement substitution form to the environmental studies faculty advisor. Forms can be obtained from the environmental studies office.

Internships

Internships allow majors to develop new skills and test their abilities and educational backgrounds. Students can assess their career objectives in professional settings. Internships are done in city, county, state, and federal agencies and in environmental organizations and private companies or agencies. Students are encouraged to participate at the end of the sophomore or junior year. Completion of an internship by the end of the junior year provides an opportunity to make career changes and final elective selections before the senior year. It is not possible to participate in an internship after graduation. The applicant must have a grade-point average of 2.5 or above, must have completed 12 hours of required environmental studies courses, and must have a suitable internship opportunity. A maximum of 3 hours may be applied to the 12 hours of required electives.

Professional Science Masters

The Professional Science Masters professional graduate degree is designed for graduates of bachelor's programs in physical/natural sciences, environmental studies, civil/environmental engineering or related fields who are currently employed or wanting to be employed in private firms, public agencies, and not-for-profit organizations that address a range of environmental issues. Key foci in the science curriculum of this program are environmental impact assessment; soils, water, and ecosystems science; geospatial analysis; environmental health and policy; and an understanding of environmental law and policy and the regulatory environment.

The P.S.M. degree is a unique professional degree grounded in natural science, technology, engineering, mathematics and/or computational sciences and designed to prepare students for direct entry into a variety of career options in industry, business, government, or non-profit organizations. P.S.M. programs prepare graduates for high-level careers in science that have a strong emphasis on such skill areas as management, policy, entrepreneurship, communication and project management. P.S.M. programs consist of 2 years of academic training in an emerging or interdisciplinary area, along with a professional component that may include internships and "cross-training" in workplace skills.

Graduate Certificate in Environmental Assessment

The Certificate in Environmental Assessment is designed for graduates of bachelor's programs in physical/natural sciences, environmental studies, civil/environmental engineering or related fields who are currently employed in private firms, public agencies, and not-for-profit organizations that address a range of environmental issues. Key foci in the science curriculum of this program are environmental impact assessment; soils, water, and ecosystems science; geospatial analysis; environmental health and policy; and an understanding of environmental law and policy and the regulatory environment.

Graduate Certificate in Environmental Justice

The Certificate in Environmental Justice is designed for graduates of bachelor's programs in environmental studies or related fields who want to address issues such as social, economic, and political marginalization of minorities and low income populations. Key foci in the curriculum of this program are environmental law, governance, policy and planning, sustainability, development, and political ecology.

For admissions and application information for the P.S.M. and the Graduate Certificates in Environmental Assessment and Environmental Justice, go to the **KU Edwards Campus website** (<https://edwardscampus.ku.edu/overview-masters-environmental-assessment/>).

Students who are interested in enrolling in graduate level coursework in the Environmental Studies Program without formal admission to a graduate program at KU are encouraged to apply for graduate non-degree seeking student status. See the department's admission (<https://esp.ku.edu/admissions/>) webpage for further details.

Courses

EVNR 103. Environment and History. 3 Credits.

Nature is our oldest home and newest challenge. This course surveys the environmental history of the earth from the extinction of the dinosaurs to the present with a focus on the changing ecological role of humans. It analyzes cases of ecological stability, compares cultural attitudes toward nature, and asks why this ancient relationship seems so troubled. (Same as HIST 103.)

EVNR 140. Global Environment I: The Discovery of Environmental Change. 3 Credits. GE3N SWT NLEC

This interdisciplinary course and laboratory sections survey the foundations of environmental understanding and the process of scientific discovery from perspectives that combine the principles and methodologies of the humanities, physical, life and social sciences. Key topics include the history of environmental systems and life on earth, the discovery of biotic evolution, ecological change, and climate change. Laboratory sections apply the principles and methodologies of the humanities, physical, life and social sciences to earth systems and the development of environmental understanding using historical and present-day examples. (Same as GEOG 140.)

EVNR 142. Global Environment II: The Ecology of Human Civilization. 3 Credits. GE3S

This interdisciplinary course and its laboratory sections survey the history of humanity's relationship with the natural world over the long term from perspectives that combine the principles and methodologies of the humanities, physical, life and social sciences. Key topics include

the evolution of Homo sapiens and cultural systems; the development of hunter, gatherer, fisher, agricultural, and pastoral lifeways; the ecology of colonialism and industrial civilization, and the emergence of ideological and ethical perspectives on the relationship between nature and culture. Laboratory sections apply the principles and methodologies of the humanities, physical, life and social sciences to the humanity's engagement with the global environment using historical and present-day examples. (Same as GEOG 142.)

EVNR 144. Global Environment I: Discovery of Environmental Change, Honors. 3 Credits. LFE GE3N NLEC

This interdisciplinary course surveys the foundations of environmental understanding and the process of scientific discovery from perspectives that combine the principles and methodologies of the humanities, physical, life and social sciences. Key topics include the history of environmental systems and life on earth, the discovery of biotic evolution, ecological change, and climate change. Laboratory sections apply the principles and methodologies of the humanities, physical, life and social sciences to earth systems and the development of environmental understanding using historical and present-day examples. (Same as GEOG 144.) Open only to students admitted to the University Honors Program or by permission of instructor.

EVNR 145. Global Environment II: The Ecology of Human Civilization, Honors. 3 Credits. GE3S

This interdisciplinary course and its laboratory sections survey the history of humanity's relationship with the natural world over the long term from perspectives that combine the principles and methodologies of the humanities, physical, life and social sciences. Key topics will include the evolution of Homo sapiens and cultural systems; the development of hunter, gatherer, fisher, agricultural, and pastoral lifeways; the ecology of colonialism and industrial civilization, and the emergence of ideological and ethical perspectives on the relationship between nature and culture. Laboratory sections apply the principles and methodologies of the humanities, physical, life and social sciences to the humanity's engagement with the global environment using historical and present-day examples. (Same as GEOG 145.) Open only to students admitted to the University Honors Program or by permission of instructor.

EVNR 148. Scientific Principles of Environmental Studies. 3 Credits. GE3N SWT NLEC

This course provides the scientific knowledge necessary to understand the changing relationships between humans and the natural environment, with an emphasis on the assessment of current environmental problems and critical evaluation of potential solutions. Major topics include fundamental scientific concepts and principles, interactions among the biological and physical components of the environment, implications of a growing human population, water resources, the atmosphere, climate, and energy sources. (Same as GEOG 148.)

EVNR 160. Environmental Solutions. 1 Credits. LFE SWT NLAB

These labs are designed to explore the physical, social, and cultural dimensions of environmental systems. Students will engage in hands-on activities and field experiences about a range of current and historical environmental issues affecting both the United States and other parts of the world. This course will broaden your understanding of important foundational concepts and skills including basic scientific principles and processes that govern the functioning of environmental systems, ways to apply this understanding to case studies and field experiences, and how to use these perspectives to eventually make informed, just decisions about climate change, the future flourishing of humans and non-humans. This course is offered at the 100 and 300 level with additional assignments at the 300 level. Not open to students with credit in EVNR 360/361. (Same as GEOG 160.) Prerequisite: This course requires

previous or concurrent enrollment in EVRN 140/144 (or cross-listed and transfer equivalents).

EVRN 170. Introduction to Kansas Landscapes. 1 Credits.

A course focused on the land and environment of Kansas. Field trips provide students with direct experience of the diverse landscapes in our area. Coursework also emphasizes the dynamic nature of the current landscape and the natural and cultural processes that have shaped it.

EVRN 171. Understanding Kansas Landscapes. 1 Credits.

An introduction to the research methods used by scholars in diverse fields, applied to environmental issues introduced in EVRN 170.

Prerequisite: EVRN 170.

EVRN 172. Kansas Landscape Projects. 1 Credits.

Students participate in the design and execution of a simple research project focused on a local environmental topic. Prerequisite: EVRN 170, and EVRN 171.

EVRN 176. First Year Seminar: _____. 3 Credits. USC

A limited-enrollment, seminar course for first-time freshmen, addressing current issues in Environmental Studies. Course is designed to meet the US Culture of the KU Core 34. First-Year Seminar topics are coordinated and approved by the Undergraduate Education Office within Academic Affairs.

EVRN 177. First Year Seminar: _____. 3 Credits. GE11 GLBC

A limited-enrollment, seminar course for first-time freshmen, addressing current issues in Environmental Studies. Course is designed to meet the critical thinking learning outcome of the KU Core. First-Year Seminar topics are coordinated and approved by the Office of Academic Programs and Experiential Learning. Prerequisite: Open to Freshmen only (less than 30 hours).

EVRN 200. Study Abroad Topics In: _____. 1-5 Credits.

This course is designed for the study of special topics in Environmental Studies. Coursework must be arranged through the Office of Study Abroad. May be repeated for credit if content varies.

EVRN 300. Geographic Adventures in Climate Change. 3 Credits. GE11 GLBC

This course considers how climate change is altering particular things such as coffee and chocolate production, the electricity grid and nuclear energy, wild salmon and sharks, rare earth minerals and ice shelves, and many other aspects of life on earth. This course looks at how environmental processes and human systems interact at different spatial scales. This geographic framework is applied to a range of topics to assess climate change impacts as well as approaches to longstanding and emerging problems. Students will identify human systems (cultural, political, economic, justice, technology, etc.) and physical systems (biosphere, atmosphere, lithosphere, cryosphere, ecosystems, etc.). They will assess how human and environmental systems interact and the various spatial scales of these interactions. Students will analyze how climate change is interacting with these systems, their interactions, and spatial implications. Students will demonstrate critical thinking to create possible responses to specific contexts where human-environment interactions are altered by climate change and evaluate the impact of those responses. Student learning outcomes emphasize the demonstration of geographic systems thinking and critical analysis towards solution options. (Same as GEOG 300.)

EVRN 304. Environmental Conservation. 3 Credits. GE3N NLEC

A survey of current methods of describing and modeling the function, structure, and productivity of natural and anthropogenically modified earth resource systems, along with a discussion of contemporary views of what constitutes a natural landscape. Fundamental natural science principles about the interplay among lithospheric, atmospheric, hydrospheric, and

biospheric components of earth systems are emphasized. Uses of natural resources, including fossil fuels, minerals, and water, are described with attention to the earth's total energy budget. Human activities that affect preservation, conservation, and multiple uses of earth regions receive attention. Systems under stress through population and other contemporary forces serve as examples. (Same as GEOG 304.)

EVRN 306. Global Environmental Literature. 3 Credits. AE42 GLBC

An examination of a variety of literary and other representations of human and non-human environments and environmentalism. Particular attention will be paid to how race, gender, class, sexuality, and geography produce and are produced by those representations. (Same as ENGL 306 and GIST 306.) Prerequisite: Sophomore standing or consent of the instructor. Recommended: Prior completion of one 200-level English course.

EVRN 307. Writing and Ecology. 3 Credits.

This course explores writing as a practice to encounter, engage with, and explore the larger ecologies of which we are a part. Our writing and reading practices will help us connect to our shared ecosystem as a source of knowledge and inspiration. More specifically, the class will focus on writing that counters extractive and exploitative values and relationships with land and peoples. Assigned readings will range in genre, including nonfiction, poetry, speculative fiction, and science writing. While our reading list and collective investigations will be collaborative, students will carve out their own research paths and explorations in this project-based class. This course is offered at the 300 and 500 level with additional assignments at the 500 level. Not open to students with credit in EVRN 507.

EVRN 320. Environmental Policy Analysis. 3 Credits.

An historical and analytical study of the formulation, implementation, and consequences of environmental policy in the United States. Attention will be directed at relevant interest groups, issues specific to both rural and urban populations, relationships between national policies and international organizations concerned with environmental problems. Prerequisite: EVRN 140/GEOG 140 or EVRN 142/GEOG 142; or EVRN 144/GEOG 144 or EVRN 145/GEOG 145; or EVRN 148/GEOG 148; or concurrent enrollment.

EVRN 332. Environmental Law. 3 Credits.

An introduction to how the American legal process improves, transforms, and damages the natural environment. Emphasizes and compares shifting responsibilities of legal forces and institutions: judges and litigants, legislators and statutes, agencies and administrations, and citizens and regulated entities. Prerequisite: EVRN 140/GEOG 140 or EVRN 142/GEOG 142; or EVRN 144/GEOG 144 or EVRN 145/GEOG 145; or EVRN 148/GEOG 148; or concurrent enrollment.

EVRN 336. Ethics, Ideas and Nature. 3 Credits. AE51

This course examines the ethical frameworks developed for thinking about, using, and protecting the natural world. Examples of topics include indigenous approaches to nature, the history of ecological ideas, environmental movements, the role of the state in managing resources, utilitarianism and progressivism, environmental lawmaking, wilderness advocacy, nature and theology, the rights of nature, and environmental justice. Students are introduced to the theories of duty ethics, justice ethics, utilitarianism, and rights ethics, and required to apply ethical decision making to contemporary and historical environmental issues. Multiple perspectives on the history of human interactions with nature demonstrate the importance of reflecting upon the value systems inherent in human-centered environmental ethics and nature-centered environmental ethics. (Same as HIST 336.)

EVRN 338. Permaculture Design. 6 Credits.

Students learn how a local, sustainable design system known as permaculture design creates an ecologically sound and economically viable way of living. The course consists of lecture, field, and practicum sessions. Lecture topics include food security, permaculture ethics, ecological principles, system design, sustainable soils, food production, food forests, earth works, and construction of human habitats.

EVRN 342. Anti-Environmentalism and Climate Change Denial in America. 3 Credits.

This class seeks to understand the rise of anti-environmentalism and climate change denial as they evolved over time in the latter half of the twentieth century and the first two decades for the twenty first century in America. Taking a historical approach, it will examine the environmental opposition from both a chronological and a thematic perspective. It will touch on such developments as New Left anti-environmentalism in the late 1960s, the origins of anti-environmentalism during the so-called "environmental decade" of the 1970s, the "Republican Reversal" of the 1980s, and the rise of the "merchants of doubt" who played an instrumental role driving the opposition to climate change.

EVRN 347. Environmental History of North America. 3 Credits.

A survey of changes in the landscape and in people's perceptions of the natural world from 1500 to present. Topics include agroecology, water and energy, the impact of capitalism, industrialism, urbanization, and such technologies as the automobile and the origins of conservation. (Same as HIST 347.)

EVRN 350. Global Environmental Justice. 3 Credits.

Drawing on interdisciplinary fields of study, this course surveys a wide range of situated environmental injustices and environmental justice movements associated with toxic dumping, oil extraction and mining, climate change, deforestation, agri-business, and tourism. As students gain an understanding of the connections and differences among specific situations, and between environmental justice and other forms of environmentalism, they engage with salient theoretical and practical questions. The content of the course will also be shaped by the interests of students. For example, each student will present on an environmental justice movement of her/his own choosing, on the connections between it and other movements we have been studying, and on the ways this movement can help us understand some of the key practical and theoretical questions raised by environmental justice struggle. This course is offered at the 300 and 600 level with additional assignments at the 600 level. Not open to students with credit in EVRN 650. Prerequisite: EVRN 140 or EVRN 142 or EVRN 144 or EVRN 145 or EVRN 336; or permission of instructor.

EVRN 351. Environmental Economics. 3 Credits.

This course provides an overview of the theory and empirical practice of economic analysis as it applies to environmental issues. Topics include externalities (a type of market failure), the valuation of nonmarket goods, the practice of benefit-cost analysis, and the efficiency and cost effectiveness of pollution control policies. Most importantly, the course permits students to perform economic field research, using state-of-the-art techniques in a manner accessible to undergraduate students. Formerly known as ECON 550. Not open to students with credit in ECON 550. (Same as ECON 350.) Prerequisite: ECON 104 or ECON 105 or ECON 142 or ECON 143.

EVRN 354. Queer Ecologies. 3 Credits.

This interdisciplinary course explores "queering" as a means to refuse binary thinking and consider expansive arts, humanities, and science practices that have evolved from queer and trans* studies, feminist science studies, environmental justice, decolonial thinking, and disability studies. In so doing, we will explore how gender, sexuality, race, and species shape understandings of the environment. Through readings,

discussion, field work, and creative projects, our work together will orient towards new thinking about the challenges of planetary and climate change. This project-based course welcomes students to explore the themes of the class within and across their own fields of interest, experience, practice, and study. This course is offered at the 300 and 500 level with additional assignments at the 500 level. Not open to student with credit in EVRN 554. (Same as WGSS 354.)

EVRN 360. Environmental Solutions. 1 Credits. LFE

These labs are designed to explore the physical, social, and cultural dimensions of environmental systems. Students will engage in hands-on activities and field experiences about a range of current and historical environmental issues affecting both the United States and other parts of the world. This course will broaden your understanding of important foundational concepts and skills including basic scientific principles and processes that govern the functioning of environmental systems, ways to apply this understanding to case studies and field experiences, and how to use these perspectives to eventually make informed, just decisions about climate change, the future flourishing of humans and non-humans. This course is offered at the 100 and 300 level with additional assignments at the 300 level. Not open to students with credit in EVRN 160. Prerequisite: This course requires previous or concurrent enrollment in EVRN 140/144 (or cross-listed and transfer equivalents).

EVRN 361. Environmental Solutions, Honors. 1 Credits. LFE

These labs are designed to explore the physical, social, and cultural dimensions of environmental systems. Students will engage in hands-on activities and field experiences about a range of current and historical environmental issues affecting both the United States and other parts of the world. This course will broaden your understanding of important foundational concepts and skills including basic scientific principles and processes that govern the functioning of environmental systems, ways to apply this understanding to case studies and field experiences, and how to use these perspectives to eventually make informed, just decisions about climate change, the future flourishing of humans and non-humans. This course is offered at the 100 and 300 level with additional assignments at the 300 level. Not open to students with credit in EVRN 160. Prerequisite: This course requires previous or concurrent enrollment in EVRN 140/144 (or cross-listed and transfer equivalents).

EVRN 363. Introduction to Environmental Hydrology and Water Resources. 3 Credits.

Water is vital to life on earth. In this course we cover components of the water or "hydrologic" cycle, how management has altered them, and how they are predicted to change with the changing climate. We discuss the evolution of water policy, its implications for managements and the economic impact of human perturbation on water. We study the physical processes that govern the water cycle, learn how they are measured, and estimate hydrologic fluxes. (Same as GEOG 336.) Prerequisite: GEOG 104 or GEOL 101.

EVRN 371. Environmental Geopolitics. 3 Credits.

This course examines how human relationships with the biophysical world are politicized. Examines key contributions to debates surrounding environmental security, resource conflicts, and related issues, as well as geopolitical assumptions on which these debates build. (Same as GEOG 371 and GIST 371.)

EVRN 372. Religion and the Environment in the United States. 3 Credits. AE41

This class examines the variety of ways religious and environmental attitudes intersect in US culture, and how religious traditions can be (and have been) used both to alienate people from the environment and to foster an ethic of environmental responsibility. The course will focus on appreciating the diversity within and across religious traditions when it

comes to attitudes on the environment, and understanding the different contexts and assumptions that lead to such diversity. Amidst all this diversity, similarities will also be noted in how people from all different backgrounds are drawing on the resources of their religious traditions to promote more sustainable ways of being. (Same as REL 372.)

EVNR 374. Vulnerability and Adaptation. 3 Credits.

The course objective is to understand and analyze human adaptation to environmental change by focusing on disasters and climate change. Each semester, the course rotates topics ranging from oil spills, hurricanes, sea-level rise to infectious disease. It provides undergraduate students with research experience and service learning, and offers opportunities for certificates through the Center for Undergraduate Research and the Center for Civic and Service Responsibility at KU. Students learn theories relevant to the case study, work in groups to generate research themes, conduct literature search and review, learn research methods, and write and present their work.

EVNR 375. Radical Environmentalism in the United States. 3 Credits.

This course will focus on the historical context of radical environmentalism in late-twentieth-century America, including an examination of organizations such as Earth First!, but it will also focus more broadly on American ideas in the 1900s that contributed to the rise of a dissident environmental consciousness. It will focus primarily, though not solely, on the period after World War II, and it will examine time periods such as the Cold War, the countercultural 1960s, and so-called "environmental decade of the 1970s," and the Reagan 80s and beyond. It will touch upon many themes, such as the relationship between science, technology, and ethics; the controversies over population growth and economic growth; the morality or immorality of economically and politically destructive environmental actions; the philosophical underpinnings of radical animal rights organizations; and the place of people of color and the poor within the radical environmentalist tradition.

EVNR 377. Resilient and Resistant Futures: Global Perspectives in Climate Change Literature. 3 Credits. AE42 GLBC

Climate change presents a contemporary crisis that literature, broadly defined, increasingly grapples with, and so much so, that scholars now refer to "cli-fi," or literature that examines the impacts of human-caused climate change during the Anthropocene. These impacts will be experienced disproportionately, and the social inequalities that will continue to ensue raise questions about justice and responsibility. In this class, we will examine novels, films, short stories, and non-fiction essays that offer global perspectives on the climate crisis. The texts use narrative techniques to shape our conceptions of global warming and just or unjust futures. We will address debates surrounding ethical human-non-human interactions and will reflect on the social and geopolitical conflicts that are heightened by climate change.

EVNR 384. Environment, Power, and Justice. 3 Credits.

This course is focused on the relationships between human beings and the planet (the environment, resources, places). We explore the major insights of sociology (primarily how to understand power and inequity) and apply them to our relationship with climate change, environmental justice, water, land, soil, food, viruses, animals, each other, and the future. Using the concept of the sociological imagination that connected one's biography with one's historical and class context as a starting point, this course expands C. Wright Mills' foundational insight to incorporate both the background knowledge of environmental relationships between society and the planet. This course also builds a research skillset to understand, debate, and develop them at the same time. Skill-building assignments develop research skills related to library searching, research question formation, assessing and using valid sources, sociological

observation, interviewing, and data analysis. Combined with a diverse set of readings, we explore the social, cultural, political, legal, and ethical debates that shape the contemporary and unfolding environmental issues. Topics may include environmental justice, environmental social movements, science communication, sustainability, biodiversity, environmental ethics, policy, land use change, and greenwashing. (Same as SOC 384.) Prerequisite: Junior or Senior standing.

EVNR 385. Environmental Social Problems. 3 Credits.

This course introduces key concepts in environmental sociology. The core goal of environmental sociology is to understand the relationship between society and the planet. Environmental sociology explores the relationships between social systems and the ecosphere, including interdisciplinary work that explores interactions within and between institutions, social groups, and natural and built environments. Environmental Sociology also includes study of the origins and impacts of technology, the social causes of environmental change, the environmental causes of social change, and the consequences of social inequalities and power relationships for socio-environmental dynamics. As human beings we live in the natural world and use its resources including the air, soil and water, yet we often separate ourselves from nature. Environmental sociology opens a dialogue between people and nature that will be explored through readings, discussion and assignments related to important environmental issues in Kansas and beyond, including climate change, energy production and consumption, material inequality, environmental justice, transportation, food and agriculture, and ethical frameworks. In particular this course uses sociological theory and sociological environmental research to illuminate the identification, evolution, and potential solution pathways to environmental social problems. (Same as SOC 385.)

EVNR 386. Sociology of Global Food. 3 Credits.

The Sociology of Global Food offers a critical examination of the global food system since the Industrial Revolution. Topics include the industrialization of agriculture, sustainable agriculture, and the role of food and agriculture in organizing society. This course discusses the emergence of current debates around food and agriculture including food activism, technological developments, human/environment relationships, and labor issues. There is a lab component to this course. (Same as SOC 386.) Prerequisite: Junior standing.

EVNR 390. Disaster and Culture. 3 Credits.

This class explores representations of environmental disasters within various forms of cultural expression. Cultural beliefs and practices not only influence the ways environmental disasters are understood and responded to, but also shape the social dynamics that determine a population's vulnerability and resilience to hazards. Thus, while an earthquake may trigger a disaster, its impact largely will be influenced by social factors that pre-date the actual seismic event. The course will apply cultural materials (e.g., film, science writing, literature, policy statements, etc.) that emerge from specific case studies to analyze the social causes and effects of disaster, while drawing on an interdisciplinary set of tools and perspectives (from sociology, literary studies, science, economics, etc.) that animates inquiry.

EVNR 400. Study Abroad Topics in: _____. 1-5 Credits.

This course is designed for the study of special topics in Environmental Studies. Coursework must be arranged through the Office of Study Abroad. May be repeated for credit if content varies.

EVNR 410. Environmental Applications of Geographic Information Systems. 3 Credits.

An introduction to the use, display, and analysis of spatial data. Students will acquire a foundational skill-set in geographic information systems and remote sensing using industry-standard GIS software and will apply these

skills using environmental data and case studies. Prerequisite: EVRN 148 or GEOG 148; EVRN 103 or HIST 103, GEOG 150 or EVRN 347 or HIST 347.

EVRN 412. Ecology: Fundamentals and Applications. 3 Credits.

An introduction to the principles of ecology, with an emphasis on environmental applications. Major topics include physiological and functional ecology, population and community dynamics, biogeography, and ecosystems ecology. Intended for students seeking B.A. or B.G.S. degrees. Prerequisite: EVRN 140 or EVRN 144 or EVRN 148 or consent of the instructor.

EVRN 414. Principles of Ecology. 3 Credits.

Study of the principles underlying species population density changes, community structure and dynamics, biogeochemical cycles, and energy flow and nutrient cycling in ecosystems. (Same as BIOL 414.) Prerequisite: BIOL 152 or BIOL 153, or consent of the instructor.

EVRN 420. Topics in Environmental Studies: _____. 1-6 Credits. LFE

Courses on special topics in Environmental Science and/or Policy. These courses may be lecture, discussions, or readings. Students may enroll in more than one interest group but may enroll in a given interest group only once.

EVRN 430. Sculpture Intercepting the Waste Stream. 3 Credits.

An introductory course using engaged learning to exploring the genre of ecological art practice (eco-art.) Class focuses on the waste stream particularly as it affects the Kansas River. Through remediation events, students build works of art from trash, in turn auctioned for environmental efforts. Creative attention is focused on ecological imbalance. (Same as SCUL 430.) Prerequisite: Visual Art major or minor, or instructor permission.

EVRN 440. Soil Science for Environmental Assessment. 3 Credits.

This course provides students with a solid understanding of soils in the environment, particularly as it relates to environmental assessment and soil health. Topics include soil geomorphology, soil physics/chemistry/biology, management of soils, and soil contaminants. Laboratory and field-based experiences are built into this course time. This course is offered at the 400 and 700 levels with additional assignments at the 700 level. Not open to students with credit in EVRN 740. Prerequisite: CHEM 130 or CHEM 170 or CHEM 190 recommended or consent of the instructor.

EVRN 445. Introduction to Environmental Health. 3 Credits.

This course is designed to provide a foundation for understanding how the natural and built environment affect human health in industrialized and developing countries by examining the impact of physical, chemical, and biological factors external to humans. Students will gain an understanding of the interaction of individuals and communities with the environment, the potential impact on health of environmental agents, and specific applications of concepts of environmental health. (Same as HSCI 445.)

EVRN 450. Epidemics, Pandemics, and Pestilence. 3 Credits.

This course examines origins, responses, and consequences of major epidemics and pandemics that have affected humanity over time. Spanning from antiquity to present day, this global survey investigates environmental and biological origins of disease, the role of commerce, urbanization, and transportation in the spread of disease, and responses to controlling disease and pandemics. Key diseases and epidemics covered include plague, smallpox, malaria, cholera, influenza, typhus, typhoid, leprosy, and tuberculosis. (Same as HSCI 450.)

EVRN 451. Ecosystems Stewardship. 3 Credits.

This course sits at the crossroads between the discipline of ecology and the practice of stewardship, specifically the Indigenous Knowledge that is born from these landscapes over millennia in a place. Students will interact with research that establishes scientific foundations as a method to engage environmental problems in the anthropocene. The concept of stewardship is a core tenet of this course, students will engage with many approaches of stewardship, centering primarily on humans as a part of, not apart from, the environment. This course is offered at the 400 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 451 or EVRN 751, GEOG 451 or GEOG 759, BIOL 451 or BIOL 759. (Same as BIOL 451 and GEOG 451.)

EVRN 453. Community Resilience. 3 Credits.

This applied research course approaches resilience from a community and regional perspective. Defined broadly and proactively, resilience integrates and mutually-strengthens natural and human systems to capitalize on nature's regenerative potential. Resilient communities can stand against nature in times of crisis, adapt to changing conditions, and are more efficient, livable, prosperous, and sustainable. Students will identify resilience approaches through directed readings, case study research, and presentations by subject matter experts. Teams will then survey and prioritize the challenges and opportunities facing real-world communities, apply and expand a resilience framework to grade the communities, and develop a screening-level resilience plan for community use. In doing so, students will: 1) Understand and apply resilience concepts and theories; 2) Identify and prioritize natural and human-made threats and challenges facing Great Plains and Midwestern U.S. communities over short- and long-term horizons; 3) Assess community capital stocks and resilience properties; 4) Compile research on resilient communities and develop tools and strategies; 5) Engage key community stakeholders; and 6) Develop and apply a vulnerability assessment and resilience framework for real-world application. This course is offered at the 400 and 700 level with additional assignments at the 700 level. Not open to freshmen or sophomores, or students with credit in EVRN 753.

EVRN 455. Care Practices: Ecology, Community, and Self. 3 Credits.

This interdisciplinary course explores practices of care for the ecologies and communities of which we are a part—as well as liberatory modes of self-care. We will explore our local ecologies through field trips and community-engaged learning and connect what we learn to larger environmental issues, including species extinction, climate change, and the uneven distribution of harms across people and place. We consider expansive practices that have evolved from social and environmental justice movements, LGBTQ+ movements, decolonial studies, and disability justice movements. This project-based course welcomes students to explore the themes of the class within and across their own fields of interest, experience, practice, and study. This course is offered at the 400 and 600 level with additional assignments at the 600 level. Not open to student with credit in EVRN 655.

EVRN 460. Field Ecology. 3 Credits. LFE

An introduction to research methods for environmental science. The course includes fieldwork in diverse ecosystems (lakes, streams, forests, prairies). It emphasizes the development of skills in data analysis and interpretation that are essential to a full understanding of environmental issues. Enrollment limited to environmental studies majors, or by instructor permission. Prerequisite: Junior or Senior standing (Senior preferred) with 60+ credit hours.

EVRN 462. Art and Ecology: Inhabiting the Ecosphere. 3 Credits.

An introductory course exploring the genre of ecological art practice (eco-art) through a series of engaged learning projects that focus on habitat, the waste stream and natural resources, local ecologies and

interventionist creative strategies that focus attention on ecological imbalance. (Same as SCUL 462.) Prerequisite: Visual Art major or minor, or instructor permission.

EVRN 490. Environmental Studies Internship. 1-4 Credits. AE61 CAP

Supervised practical experience in a specific environmental area of interest. The instructor will schedule regular meetings to evaluate progress and provide assistance. A written summary of the internship experience and an evaluation will be prepared by the student and internship supervisor. The summary and evaluation will be based on an initial description of the scope, expectations, and educational goals of the internship, as agreed upon by the student, supervisor and instructor. At least 45 hours of internship work during the semester is required for each credit hour enrolled. Prerequisite: Sophomore standing and consent of the instructor. Restricted to declared Environmental Studies majors.

EVRN 491. Capstone Internship. 3 Credits. CAP

Supervised practical experience in an environmental area relevant to the student's career goals. The internship must include opportunity to apply knowledge and skills from diverse disciplines, and require a minimum of 150 hours of work during the semester. At the start of the semester the student will work with the internship supervisor and instructor to prepare a written description of the expectations and educational goals of the internship. Course assignments will be individualized, designed to be relevant to the internship and the student's learning goals. The instructor will schedule regular meetings to evaluate progress. At the end, the student will prepare a written reflection on their experience and the supervisor will be asked to provide an evaluation of the student's internship performance. Prerequisite: Junior standing and consent of program director. Restricted to declared Environmental Studies majors.

EVRN 498. Kansas Road Trip. 1 Credits.

Kansas Road Trip (Part 1 of the Kansas Abroad Program) will allow students to explore the state as an environmental studies "living laboratory." This course provides an immersive and hands-on look at the state's reliance on environmental resources, creative and entrepreneurial solutions, and space for students to develop research skills related to Kansas' environmental future. The trip will include visit with key decision makers and innovators and explore unique environmental features. With an emphasis on urban and rural relationships and the story of how soil and water lead to wealth in Kansas, the Kansas Abroad program offers students a chance to explore and encounter differences within the state and leverage those experiences into knowledge. Students will build skills in interviewing, listening and developing research questions on the future of Kansas, and the role people in shaping it. Prerequisite: EVRN 140 and 142 or equivalents and a full academic year as an EVRN major.

EVRN 499. Kansas Environmental Futures. 2 Credits.

Kansas Environmental Futures (Part 2 of the Kansas Abroad Program) asks: What will the future of Kansas' environment look like? To that end, this course (following the completion of the two-week road trip) offers a research-based experience where students select a specific environmental theme to research for the semester. The project concludes with a written document and public presentation. Students will develop research and interviewing skills, expertise in an interdisciplinary environmental topic, public presentation skills, and demonstrate capstone-level integration of diverse kinds of evidence into a coherent argument related to their topic. With an emphasis on urban and rural relationships and the story of how soil and water lead to wealth in Kansas, the Kansas Abroad program offers students a chance to explore and encounter differences within the state and leverage those experiences into knowledge. Students will build skills in interviewing, listening and

developing research questions on the future of Kansas, and the role of people in shaping it. Prerequisite: EVRN 498.

EVRN 507. Writing and Ecology. 3 Credits.

This course explores writing as a practice to encounter, engage with, and explore the larger ecologies of which we are a part. Our writing and reading practices will help us connect to our shared ecosystem as a source of knowledge and inspiration. More specifically, the class will focus on writing that counters extractive and exploitative values and relationships with land and peoples. Assigned readings will range in genre, including nonfiction, poetry, speculative fiction, and science writing. While our reading list and collective investigations will be collaborative, students will carve out their own research paths and explorations in this project-based class. This course is offered at the 300 and 500 level with additional assignments at the 500 level. Not open to students with credit in EVRN 307. Prerequisite: Any course in Environmental Studies or Graduate Standing.

EVRN 510. Advanced Environmental Applications in Geospatial Techniques. 3 Credits.

This course focuses on applying advanced geospatial mapping and analysis techniques to "real-world" environmental issues. Course content may include lecture/lab time on advanced geospatial topics; a major class project, small-group projects, or individual projects; or half-semester internships with state agencies or campus entities that will culminate in an individual project. The specific nature of projects will be driven largely by student interest and ability, as well as agency/center needs. Prerequisite: EVRN 410 or equivalent course; or permission of the instructor.

EVRN 528. Environmental Justice and Public Policy. 3 Credits.

This course provides an overview of environmental justice, both as a social movement and as a public policy initiative. Environmental justice examines the distribution of environmental externalities across different socio-economic and racial groups. We will discuss several different public policy areas that have been impacted by the environmental justice movement: hazardous waste facility siting, urban redevelopment and Brownfields, transportation policy, and Native American sovereignty. We will also touch upon international environmental policy in an environmental justice context. Throughout the course we will evaluate empirical issues in studying environmental justice. Prerequisite: POLS 206 or a statistics class or consent of instructor.

EVRN 536. Environmental Remote Sensing. 3 Credits.

Covers fundamentals of remote sensing, including electromagnetic radiation principles and data collection and processing, followed by an introduction to the various remote sensing techniques and their application in understanding and managing environmental systems. Exercises are provided for students to be actively involved in evaluating, critically analyzing and interpreting images and data to determine implications for practice. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 736. Prerequisite: Junior or Senior standing.

EVRN 537. Water Resource Sustainability. 3 Credits.

Provides a framework for learning about our water future and ways we might define and achieve sustainability in water use and management. Concerns of ethics, culture, economics, politics, and environmental health will be discussed within the contexts of issues such as the global water crisis, water footprints, water pollution, human water systems, water security, and sustainable water technologies. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 737. Prerequisite: Junior/senior standing.

EVRN 542. Ethnobotany. 3 Credits.

Course will involve lectures and discussion of Ethnobotany - the mutual relationship between plants and traditional people. Research from both

the field of anthropology and botany will be incorporated in this course to study the cultural significance of plant materials. The course has 7 main areas of focus: 1) Methods in Ethnobotanical Study; 2) Traditional Botanical Knowledge - knowledge systems, ethnolinguistics; 3) Edible and Medicinal Plants of North America (focus on North American Indians); 4) Traditional Phytochemistry - how traditional people made use of chemical substances; 5) Understanding Traditional Plant Use and Management; 6) Applied Ethnobotany; 7) Ethnobotany in Sustainable Development (focus on medicinal plant exploration by pharmaceutical companies in Latin America). (Same as ANTH 582 and ISP 542.) Prerequisite: EVRN 142, EVRN 145, EVRN 148, ANTH 150/151, ANTH 160/162/360 or permission of instructor.

EVRN 543. Natural Hazards and Environmental Risks. 3 Credits.

This course investigates the geophysical processes of the earth-atmospheric system that can create disastrous impacts on human life, society, and economics. Hazards, including earthquakes, tsunamis, floods, hurricanes, mass movements, wildfires, and many others, are examined by analyzing spatial and temporal dynamics as well as any precursory indicators that may be present. Attention is also given to management and mitigation strategies. Case studies are utilized to examine interaction between society and natural hazards. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 743. Prerequisite: Junior/senior standing.

EVRN 545. Advanced Environmental Health. 3 Credits.

This course will build upon principles acquired in the introductory course by presenting advanced concepts on environmental health as novel factors that may constitute a risk to humans. The course provides an advanced understanding of concepts and issues of environmental health, including environmental toxicology and risk assessment, and an in-depth study of urban and rural environmental health issues and agents of environmental health impairment. Students will develop a research project or investigation of an environmental health topic. (Same as HSCI 545.) Prerequisite: HSCI 445 or EVRN 445 or consent of instructor.

EVRN 554. Queer Ecologies. 3 Credits.

This interdisciplinary course explores "queering" as a means to refuse binary thinking and consider expansive arts, humanities, and science practices that have evolved from queer and trans* studies, feminist science studies, environmental justice, decolonial thinking, and disability studies. In so doing, we will explore how gender, sexuality, race, and species shape understandings of the environment. Through readings, discussion, field work, and creative projects, our work together will orient towards new thinking about the challenges of planetary and climate change. This project-based course welcomes students to explore the themes of the class within and across their own fields of interest, experience, practice, and study. This course is offered at the 300 and 500 level with additional assignments at the 500 level. Not open to students with credit in EVRN 354. (Same as WGSS 554.) Prerequisite: Any course in Environmental Studies or Graduate Standing.

EVRN 555. Energy and Environment. 3 Credits.

This interdisciplinary course provides students with a broad understanding of the current energy system, including its challenges, with focus on changing global energy needs, current energy sources, developing and emerging renewable energy sources, and their economic, environmental, and societal implications. Analysis of energy fundamentals, fossil fuel exploration and use, nuclear energy, renewable energy sources, and subsequent environmental impacts. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 755. Prerequisite: Junior/senior standing.

EVRN 563. U.S. Environmental Thought in the 20th Century. 3 Credits.

Explores both leading and dissident ideas that Americans have had about the natural world since 1900. Broad chronological periods are explored in some depth, including the Progressive Era, New Deal, Cold War, the Sixties, and the Reagan Eighties. The course uses articles and books, as well as visual and aural forms of communication. Commercial speech, as well as scholarly and literary works, are considered. (Same as HIST 563.) Prerequisite: EVRN 148 or HIST 129, or by permission of instructor.

EVRN 577. The Andean World. 3 Credits.

The Andean environment is defined by its mountains, but includes all of the earth's major biomes: from tropical rainforest to the world's oldest and driest desert. These diverse landscapes have nurtured one of the most ancient and durable, yet diverse sets of Indigenous cultural lifeways. Most of the Andes was governed by a single power during the Inca and Spanish colonial eras, but the region is now divided between seven independent states with their own regional traditions. The Andean World has long been recognized as a laboratory for understanding the relations between nature and culture, and the tensions between tradition and revolutionary change. This course will examine the history of this region from a long-term perspective, from its indigenous roots to contemporary struggles over globalization and extractivism. (Same as HIST 577, ISP 577 and LAC 577.) Prerequisite: Prior 300+ level course in related discipline (ANTH, EEB, EVRN, HIST, LAC, SPAN, etc.) or permission of instructor.

EVRN 611. Water Quality, Land Use, and Watershed Ecosystems. 3 Credits.

Water quality issues are integrated with land use planning and the development of watershed management strategies. Interrelationships among the hydrologic cycle, atmospheric deposition, nutrient transformations and pesticide use are examined in regards to stream, lake, and groundwater quality. Prerequisite: CHEM 110 or CHEM 130 and BIOL 414, or consent of instructor.

EVRN 615. Capstone Project. 3 Credits. AE61 CAP

The capstone project provides students with a broad-based, interdisciplinary educational experience and allows them to integrate and synthesize the knowledge they have gained in their environmental studies major. It rejoins the cohort that has separately pursued the BA/BGS and BS tracks and places them in situations in which they address real world environmental issues with a team approach and produce professionally meaningful analytical reports. Prerequisite: Junior or Senior standing (Senior preferred). Restricted to declared Environmental Studies majors.

EVRN 624. Independent Study. 1-9 Credits. AE61 CAP

A research course, in any of the fields of environmental studies, consisting of either experimental research, original policy analysis, or the preparation of an extensive paper based on library investigation. Project topic to be agreed upon in advance with supervising faculty member. Prerequisite: Consent of instructor.

EVRN 625. Honors Research in Environmental Studies. 3 Credits. AE61 CAP

A course giving eligible majors the opportunity to earn Departmental Honors by engaging in an intensive program of study leading to an original piece of research. Prerequisite: Senior standing, approval of the Environmental Studies Program, the Honors Project Director, and an overall 3.25 cumulative grade point average during the semester of enrollment. Restricted to declared Environmental Studies majors.

EVRN 628. The Politics of Public Health. 3 Credits.

This course examines the social, institutional and political context of public health policy in the United States. We will examine factors that shape the nation's public health, explore the role of government in reducing risk

and promoting well being, and analyze the major institutions responsible for monitoring, protecting and promoting general public health. Themes include the social determinants of health, health disparities, emerging infectious diseases, food safety, transportation, and environmental health. Prerequisite: POLS 110 and POLS 206 are recommended.

EVRN 630. Sculpture Intercepting the Waste Stream. 3 Credits.

An introductory course using engaged learning to exploring the genre of ecological art practice (eco-art.) Class focuses on the waste stream particularly as it affects the Kansas River. Through remediation events, students build works of art from trash, in turn auctioned for environmental efforts. Creative attention is focused on ecological imbalance. (Same as SCUL 630.) Prerequisite: Graduate standing or permission of instructor.

EVRN 640. Natural Resource Management from an Indigenous Perspective. 3 Credits.

The purpose of this course is to provide students with a solid understanding of how crucial the management of natural resources is, with emphasis on Indigenous communities. Indigenous communities are often ignored in such courses even though these peoples have distinctive views of how resources should be managed. This course allows students to focus on case studies and philosophical principles that compare management techniques derived from European based science with those derived from the cultural traditions and beliefs of Indigenous peoples and communities. Prerequisite: EVRN 140 and EVRN 142; or EVRN 144 and EVRN 145.

EVRN 645. Native and Western Views of Nature. 3 Credits.

This course emphasizes comparison of the attitudes and perspectives towards the natural world that have been developed by different cultural traditions. The primary example with which most of us are familiar is the contemporary Western attitude which emerges from traditions derived from Western European philosophy, i.e. the assumption that humans are autonomous from, and in control of, the natural world. A different approach is presented by Traditional Ecological Knowledge (TEK) of Indigenous peoples of the world, which are based on close observation of nature and natural phenomena; combined with a concept of community membership, which differs from that of Western political and social thought. Prerequisite: EVRN 140 and EVRN 142; or EVRN 144 and EVRN 145.

EVRN 650. Global Environmental Justice. 3 Credits.

Drawing on interdisciplinary fields of study, this course surveys a wide range of situated environmental injustices and environmental justice movements associated with toxic dumping, oil extraction and mining, climate change, deforestation, agri-business, and tourism. As students gain an understanding of the connections and differences among specific situations, and between environmental justice and other forms of environmentalism, they engage with salient theoretical and practical questions. The content of the course will also be shaped by the interests of students. For example, each student will present on an environmental justice movement of her/his own choosing, on the connections between it and other movements we have been studying, and on the ways this movement can help us understand some of the key practical and theoretical questions raised by environmental justice struggle. This course is offered at the 300 and 600 level with additional assignments at the 600 level. Not open to students with credit in EVRN 350. Prerequisite: EVRN 140 or EVRN 142 or EVRN 144 or EVRN 145 or EVRN 336; or permission of instructor.

EVRN 655. Care Practices: Ecology, Community, and Self. 3 Credits.

This interdisciplinary course explores practices of care for the ecologies and communities of which we are a part—as well as liberatory modes of self-care. We will explore our local ecologies through field trips and

community-engaged learning and connect what we learn to larger environmental issues, including species extinction, climate change, and the uneven distribution of harms across people and place. We consider expansive practices that have evolved from social and environmental justice movements, LGBTQ+ movements, decolonial studies, and disability justice movements. This project-based course welcomes students to explore the themes of the class within and across their own fields of interest, experience, practice, and study. This course is offered at the 400 and 600 level with additional assignments at the 600 level. Not open to students with credit in EVRN 455. Prerequisite: Any course in Environmental Studies or Graduate Standing.

EVRN 660. Summer Field Ecology. 3 Credits.

An introduction to research methods for environmental science. Similar to EVRN 460, formatted for summer term. The course includes fieldwork in diverse ecosystems (lakes, streams, forests, prairies). Assignments and group work emphasize analysis and interpretation of field data. (Same as BIOL 660.) Prerequisite: Junior, Senior, or graduate standing with 60 + Credit hours.

EVRN 662. Art and Ecology: Inhabiting the Ecosphere. 3 Credits.

An introductory course exploring the genre of ecological art practice (eco-art) through a series of engaged learning projects that focus on habitat, the waste stream and natural resources, local ecologies and interventionist creative strategies that focus attention on ecological imbalance. (Same as SCUL 630.) Prerequisite: Graduate standing or permission of instructor.

EVRN 673. Environmental Justice. 3 Credits.

An examination of the impact of environmental justice and security in Indigenous communities throughout the world with a focus on tactics and strategies that incorporate Indigenous perspectives in responses and mitigation schemes. A survey of mining, dumping, and storage of toxic and radioactive waste activities as related to Indigenous peoples. Case study analyses of economic, military and mining interests contrasted with perspectives emerging from cultural traditions and beliefs of Indigenous peoples and communities. (Same as ISP 673.) Prerequisite: Permission of instructor.

EVRN 700. The Anthropocene: Interdisciplinary Perspectives on Environmental Change. 3 Credits.

Have human activities become so pervasive that we have initiated a unique human epoch of earth history? This introductory, interdisciplinary graduate seminar will explore this question while examining the ways that different disciplines approach the understanding of environmental change, its impact on natural and human systems, and how these understandings have changed over time.

EVRN 701. Climate Change, Ecological Change and Social Change. 3 Credits.

This interdisciplinary graduate seminar examines the history of climate change from natural and physical science, social science, and humanities perspectives. The class explores the ways that different disciplines approach understanding climate change and its impact on natural and human systems and how these understandings have changed over time. The course is team-taught. Students will write a research paper on a climate change topic of their choice that reflects the historical and interdisciplinary approaches of the seminar. Prerequisite: Consent of instructor.

EVRN 720. Topics in Environmental Studies: _____. 1-6 Credits.

Courses on special topics in Environmental Studies. These courses may be lecture, seminars, or readings. Students may enroll in more than one interest group but may enroll in a given interest group only once.

EVRN 721. Environmental Regulation and Policy. 3 Credits.

This course provides a survey of the environmental regulations, environmental problems, and environmental solutions that must be dealt with by environmental scientists in agencies and industry. Considers both theoretical and practical/applied aspects of environmental practices.

EVRN 730. Environmental Toxicology. 3 Credits.

Examines the effects of toxic chemicals on individuals, populations, communities and ecosystems. Topics include major classes of pollutants, movement, distribution and fate of pollutants in the environment, mechanisms of action, toxicity testing, and environmental assessment.

EVRN 735. Scientific Communication. 3 Credits.

Principles of English communication skills for the professional scientist. The course begins by exploring the role of narrative in all forms of scientific communication; it then applies the use of narrative tools to scientific writing, message honing and speaking. The course covers written and verbal communication of primary research. Students must have an independent research project on which to focus their communication assignments. (Same as BIOL 735.)

EVRN 736. Environmental Remote Sensing. 3 Credits.

Covers fundamentals of remote sensing, including electromagnetic radiation principles and data collection and processing, followed by an introduction to the various remote sensing techniques and their application in understanding and managing environmental systems. Exercises are provided for students to be actively involved in evaluating, critically analyzing and interpreting images and data to determine implications for practice. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 536. Prerequisite: Graduate standing.

EVRN 737. Water Resource Sustainability. 3 Credits.

Provides a framework for learning about our water future and ways we might define and achieve sustainability in water use and management. Concerns of ethics, culture, economics, politics, and environmental health will be discussed within the contexts of issues such as the global water crisis, water footprints, water pollution, human water systems, water security, and sustainable water technologies. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 537. Prerequisite: Graduate standing.

EVRN 740. Soil Science for Environmental Assessment. 3 Credits.

This course provides students with a solid understanding of soils in the environment, particularly as it relates to environmental assessment and soil health. Topics include soil geomorphology, soil physics/chemistry/biology, management of soils, and soil contaminants. Laboratory and field-based experiences are built into this course time. This course is offered at the 400 and 700 levels with additional assignments at the 700 level. Not open to students with credit in EVRN 440. Prerequisite: CHEM 130 or CHEM 190 recommended or consent of the instructor.

EVRN 743. Natural Hazards and Environmental Risks. 3 Credits.

This course investigates the geophysical processes of the earth-atmospheric system that can create disastrous impacts on human life, society, and economics. Hazards, including earthquakes, tsunamis, floods, hurricanes, mass movements, wildfires, and many others, are examined by analyzing spatial and temporal dynamics as well as any precursory indicators that may be present. Attention is also given to management and mitigation strategies. Case studies are utilized to examine interaction between society and natural hazards. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 543. Prerequisite: Graduate standing.

EVRN 745. Environmental Data Analysis and Statistics. 3 Credits.

Survey of common statistical methods for analyzing environmental data. Includes techniques for environmental monitoring, impact assessment, and site reclamation, as well as methods for handling censored data, time series, and spatial analysis. Sampling design, data interpretation, and presentation of statistical results will be emphasized. Prior coursework or practical experience in statistics is expected. Prerequisite: Permission of instructor.

EVRN 747. Fluvial Geomorphology. 3 Credits.

This course develops an understanding of the research processes as applied to river systems by means of qualitative and quantitative research methods and approaches to solve problems. Applications of fluvial principles to river management and stream restoration are examined, as well as interactions between land use and geomorphic processes. Prerequisite: Graduate standing.

EVRN 748. Wetland Delineation. 3 Credits.

This course provides training in the technical guidelines for the wetland delineation process as specified by the United States Army Corp of Engineers (USACE). This process includes a site investigation to determine field indicators of hydrophytic vegetation, wetland hydrology, and hydric soils for wetland determination and delineation, and the compilation of data and site mapping to create a wetland delineation technical report. Students must find an accessible wetland area near their location for the site visits that are required for this course. Prerequisite: Graduate standing or consent of the instructor.

EVRN 750. Environmental Air Quality Assessment. 3 Credits.

Addresses scientific, regulatory, and technical aspects of air quality monitoring, including pollutant formation and dispersion, pollution control, national emissions standards, and methods for monitoring pollutants and air quality. Prerequisite: CHEM 130 or CHEM 190 recommended or consent of the instructor.

EVRN 751. Ecosystems Stewardship. 3 Credits.

This course sits at the crossroads between the discipline of ecology and the practice of stewardship, specifically the Indigenous Knowledge that is born from these landscapes over millennia in a place. Students will interact with research that establishes scientific foundations as a method to engage environmental problems in the anthropocene. The concept of stewardship is a core tenet of this course, students will engage with many approaches of stewardship, centering primarily on humans as a part of, not apart from, the environment. This course is offered at the 400 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVRN 451 or EVRN 751, GEOG 451 or GEOG 759, BIOL 451 or BIOL 759. (Same as BIOL 759 and GEOG 759.)

EVRN 753. Community Resilience. 3 Credits.

This applied research course approaches resilience from a community and regional perspective. Defined broadly and proactively, resilience integrates and mutually-strengthens natural and human systems to capitalize on nature's regenerative potential. Resilient communities can stand against nature in times of crisis, adapt to changing conditions, and are more efficient, livable, prosperous, and sustainable. Students will identify resilience approaches through directed readings, case study research, and presentations by subject matter experts. Teams will then survey and prioritize the challenges and opportunities facing real-world communities, apply and expand a resilience framework to grade the communities, and develop a screening-level resilience plan for community use. In doing so, students will: 1) Understand and apply resilience concepts and theories; 2) Identify and prioritize natural and human-made threats and challenges facing Great Plains and Midwestern U.S. communities over short- and long-term horizons; 3) Assess community

capital stocks and resilience properties; 4) Compile research on resilient communities and develop tools and strategies; 5) Engage key community stakeholders; and 6) Develop and apply a vulnerability assessment and resilience framework for real-world application. This course is offered at the 400 and 700 level with additional assignments at the 700 level. Not open to freshmen or sophomores, or students with credit in EVRN 453.

EVNR 755. Energy and Environment. 3 Credits.

This interdisciplinary course provides students with a broad understanding of the current energy system, including its challenges, with focus on changing global energy needs, current energy sources, developing and emerging renewable energy sources, and their economic, environmental, and societal implications. Analysis of energy fundamentals, fossil fuel exploration and use, nuclear energy, renewable energy sources, and subsequent environmental impacts. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in EVNR 555.

EVNR 760. Soil Ecology & Restoration. 3 Credits.

This course reviews the scientific principles of environmental restoration, focusing on soil biological processes. It introduces concepts of soil ecosystem structure and functions, including soil biodiversity, nutrient cycling, plant-soil interactions, and soil ecosystem response to disturbance and degradation. The understanding of processes in the soil system will be used to inform our review of practices that can be used to restore naturally and anthropogenically disturbed sites in a wide range of environments. Prerequisite: Graduate standing or consent of the instructor.

EVNR 770. Environmental Impact Assessment. 3 Credits.

The course will provide a foundation for the technical analysis and planning principles underlying environmental impact analysis more broadly at a variety of scales for physical projects and policies. We will then become familiar with major regulatory programs individually; the role of other local, state, and federal regulations; and how the National Environmental Policy Act (NEPA) process incorporates them and comprehensively evaluates potential environmental impacts from federally funded or regulated actions. Students will learn how to prepare Environmental Assessments and become familiar with other NEPA documents. Finally, we will explore environmental justice considerations and how to conduct public engagement, including the roles of the public, private sector corporations and individuals, environmental advocacy groups and the courts in NEPA assessments. Prerequisite: An introductory course in environmental law, or consent of instructor.

EVNR 814. Professional Science Masters Environmental Assessment Capstone I. 1 Credits.

A culminating experience to develop a workforce project and produce a written report to be presented orally to a committee that may include an industry member. Students will develop an applied workforce project in the student's place of employment for full-time employees, or an internship or similar individual project for full-time students or students who are not employed in the area of study. This course will initiate the process of project development and will be taken prior to a student's final semester. This project is to be continued in EVNR 815 in the last semester of the student's graduate career. Prerequisite: Minimum 20 credit hours completed in program.

EVNR 815. Professional Science Masters Environmental Assessment Capstone II. 2 Credits.

A culminating experience to develop a workforce project and produce a written report to be presented orally to a committee that may include an industry member. Students will develop an applied workforce project in the student's place of employment for full-time employees, an internship or similar individual project for full-time students or students who are not

employed in the area of study. The students will compile their project results in a formal written report and will give an oral presentation to the Environmental Studies faculty (2 minimum) and the student's employer or mentor. Prerequisite: EVNR 814.

EVNR 915. Capstone. 3 Credits.

The goal of this research seminar is to discuss individual students' research, culminating in the completion of a paper in Environmental Studies for presentation at a professional meeting and/or publication in a professional journal.