ENVIRONMENTAL SCIENCES (ESCI)

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ESCI Courses

ESCI 5500 Individual Study (1-12 units)
Term Typically Offered: F, SP
Prerequisite: Graduate standing and consent of instructor.

Advanced independent study planned and completed under the direction of a member of the NRES department faculty. Open only to graduate students who have demonstrated ability to do independent work. Repeatable up to 12 units. Formerly ESCI 500.

ESCI 5501 Research Planning (3 units)
Term Typically Offered: F
Prerequisite: Graduate standing.

Problem solving and research planning for agriculture, natural resources and related sciences. Preparation of study plans that identify problems, review appropriate literature, formulate objectives, develop methods and provide for presentation and interpretation of results. 3 lectures. Formerly ESCI 501.

ESCI 5502 Research Design and Data Analysis (4 units)
Term Typically Offered: SP
Prerequisite: Graduate standing. Recommended: Completion of a statistics course.

Preparation for ESCI Professional-Track students. Identify research problems, review and synthesize literature, formulate objectives, survey quantitative and qualitative research methods for environmental science and management (research design, sampling, data collection, analysis, and interpretation), develop and present a research plan. 3 lectures, 1 laboratory. Formerly ESCI 502.

ESCI 5539 Graduate Internship in Environmental Sciences and Management (1-3 units)
Term Typically Offered: F, SP, SU
CR/NC
Prerequisite: Graduate standing.

Independent internship experience conducted under faculty supervision focusing on a discipline area of environmental science/management. Repeatable up to 3 units. Formerly ESCI 539.

ESCI 5550 Advanced Environmental Science (3 units)
Term Typically Offered: F
Prerequisite: Graduate standing. Recommended: An environmental science/management course.

Advanced study of earth system processes and environmental problems. Advanced application of systems thinking to study of energy, geologic systems, groundwater and surface water resources, soils, environmental pollution and degradation, atmospheric and ocean dynamics, and the global climate system. 3 lectures. Formerly ESCI 550.

ESCI 5565 Advanced Applied Hydrology (2 units)
Term Typically Offered: TBD
Prerequisite: Graduate standing. Recommended: ERSC 442 or ERSC 4442.

Advanced hydrology techniques and applications to hydrology projects, including water quality and quantity monitoring and assessment, channel morphology monitoring, structural and non-structural enhancements for channel and upland watersheds, groundwater monitoring and modeling, natural and managed aquifer recharge, stream-aquifer interactions, and seawater intrusion. 1 laboratory, 1 activity. Formerly NR 575.

ESCI 5575 Teaching Strategies for College Environmental Sciences Laboratories (2 units)
Term Typically Offered: TBD
Prerequisite: Graduate standing.

Concepts of teaching and learning related to instructor performance in college environmental science and natural resources laboratory classes. Introduction to teaching strategies, managing a classroom, writing laboratory exercises and quiz questions, science pedagogy for the laboratory, and laboratory/field safety. Repeatable up to 6 units. 2 seminars. Formerly ESCI 575.

ESCI 5581 Graduate Seminar in Environmental Sciences (1 unit)
Term Typically Offered: SP
Prerequisite: Graduate standing in Environmental Sciences and Management.

Study and presentation of selected developments, trends and problems in environmental science, forest and natural resources, earth and soil sciences, and environmental management. Develop professional skills including time management, career planning, and project management. Repeatable up to 2 units. 1 seminar. Formerly ESCI 581.

ESCI 5582 Advanced Spatial Data Analysis in Environmental Science (3 units)
Term Typically Offered: TBD
Prerequisite: Graduate standing. Recommended: STAT 218 or STAT 1110; and NR 218 or NR 2218.

Seminar of practices and state of research in Geographic Information Systems (GIS), remote sensing, machine learning, and spatial analysis in agriculture, natural resources, ecology and environmental sciences. 2 lectures, 1 laboratory. Formerly SS 582.

ESCI 5590 Advanced Environmental Management (3 units)
Term Typically Offered: SP
Prerequisite: Graduate standing. Recommended: An environmental science or environmental management course.

Scientific principles of environmental issues and environmental management practices focusing on sustainable development and systems thinking, centered around the health of humans and ecosystems. Analysis of fundamental and emerging environmental factors that impact management practices. 3 lectures. Formerly ESCI 590.

ESCI 5598 Project (3 units)
Term Typically Offered: F
Prerequisite: Graduate standing; and one of the following: ESCI 502, ESCI 550, ESCI 581, ESCI 590, ESCI 5502, ESCI 5550, ESCI 5581, and ESCI 5590.

Creation of a professional project leading to improved understanding of the physical environment, solution of an environmental problem, natural resources management, or improved interaction between society and the natural environment. Course may be offered in classroom-based or online format. 3 lectures. Formerly ESCI 596.

ESCI 5599 Thesis (1-3 units)
Term Typically Offered: F, SP, SU
Prerequisite: Graduate standing.

Individual research in environmental sciences and management under the general supervision of faculty, leading to a graduate thesis. Repeatable up to 6 units. Formerly ESCI 599.