

Environmental Sciences

Contact Information

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- Master of Science with 3 Concentrations
- Graduate Certificate in Geographic Information Systems

Departmental Goals and Objectives

The mission of the Department of Environmental Studies is to provide students with the advanced interdisciplinary training necessary for addressing environmental problems. Graduates of the department are prepared for diverse careers in environmental fields.

The principal emphasis in the MS degree is on professional development. The graduate degrees are designed for those who intend to enter the job market for the first time, as well as for mid-career professionals. Faculty work with each student to create a specialized educational plan (developed before or during the first semester of study). Students should consult advising documents for their chosen degree and concentrations.

The Master's Degree

Three concentrations are available:

- ES - General Environmental Sciences Concentration
- ES - Environmental Planning and Management Concentration
- ES - Sustainable Development and Policy Concentration

The curriculum for the MS in Environmental Sciences allows students to gain a strong scientific understanding of ways to study, evaluate, and interpret environmental realities and their impacts, as well as to manage and mitigate environmental problems. Objectives are to enable students to:

1. Develop a basic literacy in the natural and social sciences and the humanities as they contribute to an understanding of environmental issues
2. Critically analyze environmental problems
3. Identify, research, and evaluate environmental problems
4. Compare, contrast, implement, and manage short- and long-term solutions to environmental problems. The department recommends that students interested in the Environmental Sciences degree have prior knowledge of chemistry, algebra, statistics, and biology

Advising

All new on-ground students must participate in a graduate student orientation before their first semester. New online students must complete a similar orientation online. In conjunction with his or her academic advisor, each student must prepare an educational plan before or during completion of the first semester of study. The educational plan is submitted to the department chair for final approval.

Grading Policy

Students must maintain a cumulative GPA of 3.0 on a scale during their course of study. A maximum of four hours of C (2.0) grades (a grade of C- or lower will not be acceptable) is applicable to an ENS degree, provided each hour of C is balanced by an hour of A (a grade of A- will not be accepted), and an approved Student Petition is on file in the Office of Records and Registration. Failure to maintain an overall graduate grade point average of 3.0 or higher will result in initiation of academic dismissal by the Department of Environmental Studies. Courses that are offered on a letter-grade basis must be taken for a letter grade.

Students also should refer to the campus policy on Grades Acceptable Toward Master's Degrees section of this catalog.

Program Learning Outcomes

A student receiving a master's degree in Environmental Sciences will demonstrate the ability to:

1. Analyze environmental issues in a logical manner by breaking down an issue into constituent parts, identifying players and relationships among players in those parts, describing these relationships, recognizing unstated assumptions, distinguishing facts from opinions, and distinguishing statements of cause from statements of effect
2. Critically appraise the value of data and information relevant to environmental questions and problems, including the appropriateness and adequacy of any qualitative or quantitative methods used in its compilation. In evaluating evidence or arguments, a student integrates key theories, information from works of recognized excellence, and facts and generalizations germane to a field to verify the soundness of arguments
3. Synthesize diverse ideas relevant to environmental science to form a coherent perspective on how best to further research in the field and/or create policies or practices designed to address environmental problems. The parts to be integrated may, to the extent necessary, come from a variety of disciplines
4. Create a research proposal or applied plan of work that includes asking and answering questions relevant to environmental studies, testing hypotheses or assumptions based on previous research or observations, collecting information to analyze the factors involved, modifying the hypotheses or assumptions based on new factors or considerations, and then making inferences and recommendations based on findings
5. Design effective ways of presenting data and information from the environmental sciences to others through written, visual, and oral means

Requirements

Core Courses

ENS 551	Environmental Natural Sciences	4
ENS 552	Environmental Social Sciences and Humanities	4
ENS 553	Research Methods in Environmental Science	4

Concentration Requirements and Electives **24**

Closure **4**

Total Hours **40**

Educational Plan

Development of an educational plan is a key activity through which student and academic advisor identify course work appropriate for the student's background, aspirations, and needs. The plan indicates the courses for the chosen degree and concentration, and is developed prior to or during the first semester of study. Upon completion of the plan the advisor and Department chair review the plan. Minor amendments (such as electives) may be made during the course of study with approval of the academic advisor; significant changes in direction (changes between concentrations or degrees) also require the approval of the Department chair and necessitate a Change of Curriculum form. Variances from Department requirements must be indicated and approved through a Student Petition.

Master's Closure

MS candidates, with the assistance of their advisors and graduate committees, are required to complete one of the three available closure options. For some ENS students, the culminating experience of graduate-level work is a formal thesis. Other ENS students develop a substantial and carefully-designed graduate project, such as an interpretive plan for a nature center, an exhibit for a museum or visitors' center, a film or multimedia show with supportive materials, or a finished and well-researched draft of environmental legislation or policy. ENS students are required to present and defend their thesis/graduate project proposal and completed thesis/graduate project before the graduate committee. The third closure option is the Capstone Closure course. The Capstone Closure option is not available to students in the General Environmental Science Concentration. The Capstone Closure option involves the completion of a 240-hour professional internship while enrolled in ENS 550. Before enrolling in ENS 550, capstone students must identify a suitable internship site and develop an internship plan in consultation with their internship site supervisor and the capstone instructor. The capstone instructor determines whether the proposed internship activities and learning goals meet departmental standards. Prior approval of the internship plan is required in order to register for ENS 550. While enrolled in ENS 550, students submit regular progress reports and complete a final capstone presentation and a comprehensive final capstone report summarizing and analyzing their accomplishments and learning experiences during the internship.

Students enroll for thesis or graduate project credit hours with the approval of their thesis/graduate project advisor. Students must enroll in a total of four credit hours of closure; however, they may accrue the total in increments (thesis and graduate project only). Once students begin taking closure hours, they are required by campus policy to be enrolled in at least one closure hour per regular semester (fall and spring) until the four-credit hour closure requirement is completed. If the closure exercise is not completed by the time four credit hours have been completed, students must register for zero credit hours (one billable hour) of ENS 511, ENS 529, or ENS 557 (as applicable) in all subsequent regular semesters (fall and spring) until the closure exercise is completed.

Graduate Certificate

- Graduate Certificate in Geographic Information Systems

Online Degree

Students interested in the MS in Environmental Sciences can obtain their degree online with the same curricula as the on-campus programs. Applicants to the MS General Environmental Sciences Concentration must have the approval of a research advisor before their application will be considered. Applicants to the MS in Sustainable Development and Policy or the MS in Environmental Planning and Management do not need prior approval from a research advisor in order to apply.

This format allows students to complete their degree from any location in the world while participating in a dynamic online community with instructors dedicated to their success. The online MS program contains the same curricula as the on-campus program and is mostly taught by on-campus faculty members.

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