

698 (1-6) Internship

On-site field experience, the nature of which is determined by the specific needs of the student's program option.

699 (3-4) Thesis

Independent capstone experience, guidelines of which are determined by the requirements of a particular program option

ENVIRONMENTAL SCIENCES MS

*College of Science, Engineering & Technology
Biological Sciences*
S242 Trafton Science Center • 507-389-2786

Graduate Coordinator: Beth Proctor, Ph.D.

The Graduate Program in Environmental Sciences offers the student the opportunity for study in the areas of environmental quality, restoration and natural resources. These areas encompass a broad range of practical problems which cross the boundaries of applied natural sciences, mathematics, economics, management and law.

This program provides flexibility and a multidisciplinary basis. This is accomplished by drawing on the expertise from many departments at Minnesota State University, Mankato. The focus of research and/or teaching available in the Environmental Sciences Program includes:

Environmental Monitoring, Environmental Toxicology, Environmental Microbiology, Watershed Assessment, and Water Resources.

The Master's Thesis Option is strongly encouraged, however, a non-thesis option is also available.

Admission. In addition to meeting the general admission requirements of College of Graduate Studies, students must have completed the following courses with a minimum grade of C: One year of Chemistry, College Algebra, General Ecology, and Botany or Zoology. Students NOT having SOME of the admission requirements may be CONDITIONALLY admitted to the program. Conditionally admitted students are given one academic year to complete coursework deficiencies.

Graduate Assistantships. Environmental Sciences is a Program in the Department of Biological Sciences. Graduate assistantships are available through the Department of Biological Sciences.

Occupational Outlook. Environmental work has become much more technical. The hottest careers are overwhelmingly in the science and engineering fields. At the same time, environmental issues demand interdisciplinary training. In addition employers are demanding professionals with strong "people" and liberal arts skills: management, public speaking, writing, politics, economics and clear-headed problem solving skills. A

key trend in the environmental field is technical skills get you the job, but communication and management ability determines your rise in the ranks.

Advising, Thesis Track (30 Credits). At the end of the first academic year the student should select a permanent advisor, an area of emphasis and a research thesis topic. The student with his/her advisor should select members from the graduate faculty to serve on the advisory committee. The advisory committee usually consists of 3-5 graduate faculty members. The advisory committee must include two members of the Department of Biological Sciences. The advisory committee is chaired by the student's advisor reviews and approves the coursework, research and thesis. A thesis will prepare students for the more technical fields or doctoral programs.

Advising, Alternate Plan Paper (34 Credits). At the end of the first academic year, the student should select a permanent advisor and an area of specialization. The student with his/her advisor should select members from the graduate faculty to serve on the advisory committee. The advisory committee usually consists of 3-5 graduate faculty members. The advisory committee must include two members of the graduate faculty from the Department of Biological Sciences. The advisory committee reviews and approves the student's course work and Alternate Plan Paper.

ENVIRONMENTAL SCIENCE MS

Required Core (16 cr)

ENVR	540	Environmental Regulations (3)
ENVR	550	Environmental Pollution and Control (3)
ENVR	560	Analysis of Pollutants (4)
BIOL	510	Human Ecology (3)
ENVR	600	Environmental Assessment (3)

Required Environmental Science Electives (6 cr)

Choose **two** course from the following:

URSI	604	Zoning & Legal Issues
URSI	609	Applied Urban Analysis
URSI	661	Long-Range & Strategic Planning
URSI	662	Operational Planning
GEOG	681	Environmental Issues
POL	669	Public Policy Analysis
POL	670	Urban Law

Required Electives

The remaining coursework will be drawn from other programs across University offerings.

Required Thesis or Alternate Plan Paper

ENVI	694	APP (1-2)
ENVI	699	Thesis (3-6)

Additional Requirements:

A maximum of 9 credits can be taken in ENSC 600 level courses such as, independent study, internship, seminar, in-service, thesis and/or alternate plan paper. All courses must be approved (in advance) by the student's advisor and must be pertinent to the student's career goals. Independent study and internship credits from other programs **cannot** be used for electives in Environmental Sciences. Fifty percent of the course-work must be at the 600 level (excluding thesis credit).

COURSE DESCRIPTIONS

540 (3) Environmental Regulations (F)

This lecture course introduces students to major federal environmental statutes including the Clean Water Act, Clean Air Act, Safe Drinking Water Act, Resource, Conservation and Recovery Act, CERCLA (Superfund), Federal Insecticide, Fungicide and Rodenticide Act, Toxic Substances Control Act, Endangered Species Act and Food, Drug and Cosmetic Act. In addition, several State of Minnesota environmental statutes will be discussed.

550 (3) Environmental Pollution and Control (F)

This is a lecture course focusing on the sources and control of pollutants in air, soil, water, and groundwater. Hazardous waste treatment and the effects of pollutants on human health are also discussed.

560 (4) Analysis of Pollutants (S)

This is a lecture/lab class designed to give students "hand-on" experience with various methods of environmental analysis coupled with the development of a research proposal. The class research project requires the collection and analysis of samples using methods approved by the Environmental Protection Agency. Quality control and Quality Assurance methods are emphasized.

583 (1-2) Seminar (Alt -S)

Each major will present a seminar on his/her research and also have the option to attend semester-long seminars on special topics.

591 (1-2) In-Service

600 (3) Environmental Assessment (Alt - S)

This lecture course introduces students to the National Environmental Policy Act and requirements for Environmental Impact Statements and Environmental Assessment Worksheets at the Federal and State Level. Phase I Environmental Assessment of land and buildings, an International Perspective on Environmental Assessments and Economic and Social Impact Assessment are also discussed.

619 (2 or 3) Selected Topics in Environmental Science (Alt - S)

677 (1-6) Individual Study (F,S)

Individual Research Project.

694 (1-2) Alternate Plan Paper (F,S)

698 (1-12) Internship (F,S)

Experience in applied Environmental Sciences according to a prearranged training program.

699 (3-6) Thesis (F,S)

ETHNIC STUDIES

College of Social & Behavioral Sciences

Ethnic Studies Department

109 Morris Hall • 507-389-2798

Chair: Yueh-Ting Lee, Ph.D.

Ronald Bailey, Ph.D., Hanh Huy Phan, MS, Yueh-Ting Lee, Ph.D., Luis Posas, Ph.D.

The Ethnic Studies program provides opportunities for students whose goal is to work directly with racial minorities. The program also attracts professionals already employed in minority affairs. Students should refer to the **MS in Multidisciplinary Studies to plan degree requirements**. The **Ethnic Studies Option** emphasizes the four major racial minority groups in the United States: African American, American Indian, Asian American and Latino American. It prepares graduates who have an interest in public service in inner-city agencies and elsewhere in our society; who have studied theory and research methods; and who have written and practiced in Ethnic Studies. Please refer to Multidisciplinary Studies for more information on this program and admission requirements.

COURSE DESCRIPTIONS

500 (3) Cultural Pluralism

This course will examine issues confronted in a multicultural society. It will study ethnic/minority groups not usually included in mainstream society, including their uniqueness and harmonious co-existence with other ethnic groups. (F, S)

501 (3) Applied Cultural Research

This course introduces concepts and methods of applying socio-cultural understanding to contemporary problems to bring about the empowerment of affected people. Case/field studies and other research methods in social sciences will be used to illustrate the impact and problems of culture change with special attention to its affect on disadvantaged groups of people. Students will also design their own applied projects. (Pre: ANTH 101, 103, or 230 or consent; ETHN 100, 101, or 150 or consent)

510 (3) Foundations of Oppression

Students will examine the forces which create and maintain prejudice, discrimination and racism. Special attention will be given to the work of Paulo Freire. (F)