

GEOGRAPHY AND ENVIRONMENTAL ENGINEERING, MASTER OF SCIENCE

The Geography and Environmental Engineering Master of Science is open to students with undergraduate degrees in engineering, mathematics, biology, chemistry, physics, geology, and other scientific disciplines. The degree is designed to allow students, with the assistance of their faculty advisor, the opportunity to construct a curriculum that will best suit their individual goals.

Students pursuing this degree may choose between one of the two tracks for the M.S., Environmental Science or Environmental Science and Policy, or may choose to follow any of the M.S.E. track curricula.

Program Requirements

The M.S. degree program includes the following general requirements:

- a minimum of 30 graduate credits including no more than 1 credit of seminar, 1 credit of intersession course work or 1.5 credits from CLE (with advisor approval), and 6 credits of independent research counting toward the 30 credits.
- at least 50% of the required 30 credits must come from courses within the department. The Department of Environmental Health and Engineering's course codes are 570, 180-5, and 187-8.
- students are permitted to apply up to two classes with a grade of "C" toward their degree.
- up to two courses from AAP or EP may be taken and counted to receive a master's degree as long as there is sufficient rigor and prior approval as deemed by the advisor. Students must have written consent from advisor (an email will suffice) prior to signing up for the course.
- students will earn credits for BSPH courses according to this BSPH-WSE credit conversion:
 - 3 WSE credits for a 4 or 5-credit BSPH course
 - 2 WSE credits for a 2 or 3-credit BSPH course
 - 1 WSE credit for a 1-credit BSPH course

M.S. students have the option to complete an independent research project, submitted as a formal essay. A minimum of two semesters is required to complete the M.S. degree without the research project option. Three to four semesters are typically required to complete the degree with a research project.

M.S. students are strongly recommended to take mathematics- specifically differential equations and computing skills- as prerequisites for the M.S. program. Additionally, M.S. students who choose to follow Environmental Engineering and Science, Data Science and Analytics, Environmental Management and Economics, or Hydrology and Water Resources Engineering concentrations are encouraged to take an introductory fluid mechanics course. Whether introductory fluid mechanics will count towards an M.S. student's graduation credits is decided on a case-by-case basis by the department. Each individual's program of study is planned by the student in consultation with department faculty and must be approved by the faculty advisor.

Concentrations for the M.S. Degree

Environmental Science

This concentration provides a broad yet rigorous background for environmental professionals. Using the department's areas of interest, study, and research as guides and in consultation with their advisors, M.S. students can construct their own concentration that complements and expands their interests and professional goals.

To complete this track, it is recommended to take four courses in environmental science. Suggestions include:

Code	Title	Credits
EN.570.644	Physical and Chemical Processes	3
EN.570.648	Physical and Chemical Processes II	3
EN.575.706	Biological Processes for Water & Wastewater Treatment	3

Other recommended courses include:

Code	Title	Credits
EN.570.615	Current Trends in Environmental Microbiology	3
EN.570.626	Groundwater, Porous Media, and Hydrogeology	3
EN.570.643	Aquatic and Biofluid Chemistry	3
EN.575.645	Environmental Microbiology	3
EN.570.690	Solid Waste Engineering and Management	3
EN.570.691	Hazardous Waste Engineering and Management	3

The final courses will be a project or electives in environmental science that are appropriate to the student's goals and approved by a faculty adviser.

Environmental Science and Policy

This concentration is similar to Environmental Science but includes economics and systems courses.

Core courses in environmental policy include:

Code	Title	Credits
EN.570.695	Environmental Health and Engineering Systems Design	3
EN.570.697	Risk and Decision Analysis	3

Choose at least two from the following:

Code	Title	Credits
EN.575.645	Environmental Microbiology	3
EN.570.643	Aquatic and Biofluid Chemistry	3
EN.570.691	Hazardous Waste Engineering and Management	3

Choose at least one from the following:

Code	Title	Credits
PH.317.605	Methods in Quantitative Risk Assessment	4
EN.570.607	Energy Policy and Planning Models	3
EN.570.657	Air Pollution	3
EN.570.616	Data Analytics in Environmental Health and Engineering	3

Additional recommended courses:

Code	Title	Credits
EN.570.644	Physical and Chemical Processes	3
EN.570.648	Physical and Chemical Processes II	3

The final courses will be a project or electives in environmental science, engineering, policy, statistics or systems that are appropriate to the student's goals and approved by a faculty advisor.