

Environmental Science Major

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About

The Department of Geography and the Environment offers B.A. degrees in Geography and Environmental Studies, and a B.S. in Environmental Science. The department also offers a minor in Geography and supports the Sustainability Studies minor. The department's overarching objective is to integrate the disciplines of geography and environmental science to seek an understanding of human and environmental patterns, the processes that produce those spatial patterns, and salient human and environmental problems that face modern society. The department has two teaching and five research labs; and the department has a full suite of state-of-the-art geospatial software and scientific research equipment.

Program: [Geography and the Environment](#)

Type: Bachelor of Science

PRIMARY MAJOR (122 credits)

Require Major Courses (70 credits)

The B.S. in Environmental Science Program provides the technical background necessary for understanding the biological, chemical, and physical aspects of the environment. It focuses on the application of biological, chemical and physical principals to understanding the natural and physical environments of the Earth. Towards this end, the program's graduates will have an understanding of and appreciation for the processes and interactions that occur both within and between the atmosphere, the biosphere, the lithosphere, and the hydrosphere. The program is founded on the principle that science – both as a body of knowledge and as a process that is grounded in intellectual inquiry and the scientific method – must be applied to assess the direct and indirect influences of human activities on the integrity of the Earth's systems.

Program Notes:

- Consider course offerings with environmental content when selecting free electives.
- MAT 1310 may fulfill the MAT 1500 requirement.
- GEV 6006 must be taken a total of 3 times prior to graduation.

| Course | Title | Credits |
|---------------|--------------------------------------|----------------|
| GEV 1050 | Environmental Science I | 4 |
| GEV 1051 | Environmental Science II | 4 |
| GEV 1750 | Geo-Techniques | 4 |
| GEV 2001 | Prof Dev in Geo and Env | 1 |
| GEV 2310 | Environmental Chemistry | 4 |
| | Statistics for Environmental Science | 3 |
| GEV 4310 | Environmental Issues Seminar | 3 |
| GEV 4700 | Geographic Information Systems | 4 |
| CHM 1151 | General Chemistry I | 4 |
| CHM 1103 | General Chemistry Lab I | 1 |
| PHY 1100 | General Physics I | 3 |
| PHY 1101 | General Physics I Lab | 1 |
| MAT 1500 | Calculus I | 4 |
| GEV 6005 | Senior Research Seminar | 1 |
| GEV 6006 | Research Colloquium | |
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| | GEV Independent Study Requirement | 3-6 |
| | GEV Lab Elective | 8 |
| | GEV Science and Technology Electives | 12 |
| | GEV Policy and Management Electives | 6 |

Core Curriculum Requirements (33 credits)

Environmental Science Majors meet the following core requirements in the major and therefore are omitted from the summary below:

- Core Math (3 cr)
- Natural Science (8 cr)
- Depending upon the courses chosen by the student, the Social Sciences (6 cr) core requirement may also be fulfilled through the major.

| Course | Title | Credits |
|----------|---|---------|
| ACS 1000 | Ancients | 3 |
| ACS 1001 | Moderns | 3 |
| THL 1000 | Faith, Reason, and Culture | 3 |
| PHI 1000 | Knowledge, Reality, Self | 3 |
| ETH 2050 | The Good Life:Eth & Cont Prob | 3 |
| | Literature and Writing Seminar (1 course) | 3 |
| | History (1 course) | 3 |
| | Social Sciences (2 courses) | 6 |
| | Fine Arts (1 course) | 3 |
| | Upper-Level Theology (1 course) | 3 |
| | Language Requirement (Proficiency) | |
| | Diversity Requirement (2 courses) | |

Free Elective Requirement (19 credits)

Students with an Environmental Science primary major have nineteen (19) required free elective credits.

Degree Credit Summary

- **Major Credits:** 70 credits
- **Core Credits:** 33 credits
- **Free Electives Credits:** 19 credits
- **Total Required Credits:** 122 Credits

Note: The above credit totals are based on the minimum number of required credits in each degree area. The minimum number of required credits in each area listed above must be met. Credits taken beyond the required minimum for one area may not be applied to another area.

SECONDARY MAJOR

Students who declare Environmental Science as a **secondary major** must complete the Required Major Courses to achieve this major. Students are able to count any eligible course taken in their primary major, the core curriculum, minors, concentrations, or free electives toward these requirements.

Category Descriptions

Statistics for Environmental Science

Credits: 3

Select 1 course from those listed.

| Course | Title | Credits |
|-----------|------------------------------|---------|
| BIO 3105 | Biostatistics & Exp Design | 4 |
| GEV 3300 | Stats. in Environmental Sci. | 3 |
| STAT 1313 | Statistics for Life Sciences | 3 |
| STAT 4310 | Stat Methods | 3 |

GEV Independent Study Requirement

Credits: 3-6

- Choose GEV 6200: Independent Study (3 cr) OR
 - GEV 6210 and 6220: Senior Thesis I & II (6 cr – 3 cr of which count as a free elective)

| Course | Title | Credits |
|----------|---------------------------|---------|
| GEV 6200 | Independent Study | 3 |
| Course | Title | Credits |
| GEV 6210 | Senior Thesis Research I | 3 |
| GEV 6220 | Senior Thesis Research II | 3 |

GEV Lab Elective

Credits: 8

Select 2 Classes from the list below, or any course of four or more credits with the GESC attribute. BIO or CHM lab courses above 2000 with the GESC attribute may fulfill this requirement.

| Course | Title | Credits |
|----------|--------------------------------|---------|
| GEV 4320 | Spec. Topics in Env Lab Sci | 4 |
| GEV 4321 | Microbial Processes | 4 |
| GEV 4322 | Ocean Environments | 4 |
| GEV 4323 | Watershed Biogeochemistry | 4 |
| GEV 4324 | Wetland Science and Management | 4 |
| GEV 4325 | Environmental Ecology | 4 |
| GEV 4326 | Environmental Geology | 4 |
| GEV 4327 | Process Geomorphology | 4 |
| GEV 4328 | Climatology | 4 |
| GEV 4329 | Global Change Research | 4 |
| GEV 4360 | Field Methods in Env Science | 4 |
| GEV 4361 | Field Research | 4 |

GEV Science and Technology Electives

Credits: 12

Select 4 classes of three or more credits with the GESC attribute (12 cr).

GEV Policy and Management Electives

Credits: 6

Select 2 Classes of three or more credits with the GEPM attribute (6 cr).