Environmental Sciences, BA

Requirements

The Bachelor of Arts with a major in environmental sciences requires a minimum of 120 s.h., including a minimum of 63 s.h. of work for the major. Students must maintain a gradepoint average of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core; some courses required for the major in environmental sciences may be used to satisfy GE CLAS Core requirements.

Students complete requirements in five areas: science and mathematics foundation; environmental sciences foundation; environmental sciences field study; environmental sciences policy courses; and environmental sciences track courses.

The science and mathematics foundation develops fundamental skills and comprehension in biology, chemistry, geology, mathematics, and statistics. The environmental sciences foundation includes an introductory course in environmental science and additional courses that focus on the geomorphic and environmental processes that shape the earth's surface, the ecological factors that influence the distribution and abundance of organisms, and a choice of one course that deals with remote sensing techniques or with the use of geographic information technologies. The environmental sciences field study gives students hands-on experience with methods of analysis and interpretation of natural systems/organisms.

Each of the program's four tracks focuses on areas of specialization within environmental sciences:

- biosciences (green) track—biological systems and ecological approaches;
- chemical sciences (yellow) track—environmental systems and chemistry;
- geosciences (brown) track—earth materials and surficial geologic processes; and
- hydrosciences (blue) track—hydrogeology and hydrogeologic systems, and water chemistry.

Students select one course from each of the four tracks in order to develop breadth of understanding and skill in these areas.

The BA in environmental sciences requires the following coursework.

Requirements	Hours
Science and Mathematics Foundation Course	27
Environmental Sciences Foundation Courses	15-16
Environmental Sciences Field Study Course	3-4
Environmental Sciences Policy Courses	6
Environmental Sciences Track Courses	12-15

Science and Mathematics Foundation

Students must complete at least 27 s.h. of coursework, as follows.

Course #	Title	Hours
All of these:		
BIOL:1411	Foundations of Biology	4
BIOL:1412	Diversity of Form and Function	4
CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4
EES:1050	Introduction to Geology	4
One of these:		
MATH:1460	Calculus for the Biological Sciences	4
MATH:1850	Calculus I	4
One of these:		
CHEM:2021	Fundamentals of Chemical Measurements	3
STAT:3510/ IGPI:3510	Biostatistics	3
STAT:4200/ IGPI:4200	Statistical Methods and Computing	3

Environmental Sciences Foundation

Students must complete at least 15 s.h. of coursework, as follows.

Course #	Title	Hours
All of these:		
ENVS:1085/ EES:1085	Fundamentals of Environmental Science	4
ENVS:2010/ EES:2010/ GEOG:2010	Interdisciplinary Environmental Seminar	1
ENVS:2673/ BIOL:2673	Ecology	3
ENVS:3010/ EES:3010/ GEOG:3003	Interdisciplinary Environmental Seminar	1
ENVS:3020/ EES:3020/ GEOG:3020	Earth Surface Processes	3
One of these:		
GEOG:2050	Foundations of GIS	4
GEOG:3500/ IGPI:3500	Introduction to Environmental Remote Sensing	3

Environmental Sciences Field Study

Students must complete at least 3 s.h. from the following.

Course #	Title	Hours
ENVS:3095	Field Ecology	4
ENVS:3096	Winter Ecology	2
ENVS:3097	Introduction to Bird Study	2
ENVS:3230	Special Topics (must include field component)	1-4
EES:2831	Geologic Field Methods	3
EES:4680	Field Methods in Hydrologic Science	3
GEOG:4010	Field Methods in Physical Geography	3

IALL:3103	Aquatic Ecology	4
IALL:3117	Ecology and Systematics of Diatoms	2,4
IALL:3126	Ornithology	4
Other Lakeside Laboratory courses (prefix IALL) may be approved in consultation with an environmental sciences advisor		

Environmental Sciences Policy

Students must complete at least 6 s.h. from the following list.

Course #	Title	Hours
ENVS:1115/ EES:1115/ GEOG:1115/ HIST:1115	The History of Oil	3
BIOL:1260	Plants and Human Affairs	3
ECON:3625/ URP:3135	Environmental and Natural Resource Economics	3
GEOG:1070	Contemporary Environmental Issues	3
GEOG:2910	The Global Economy	3
GEOG:2930	Water Resources	3
GEOG:3760/ GHS:3760	Hazards and Society	3
GEOG:3780/ GHS:3780/ HIST:3240	U.S. Energy Policy in Global Context	3
GEOG:4770/ AFAM:4770/ GHS:4770	Environmental Justice	3
PBAF:2020/ URP:2020	Environment and Society: Sustainability, Policy, and Politics	3

Environmental Sciences Track Courses

Students must complete one course from each of the following four lists (at least 12 s.h.). They may not use any course to satisfy more than one requirement.

Biosciences (Green) Track

Course #	Title	Hours
One of these:		
BIOL:1261	Introduction to Botany	4
BIOL:2246	Entomology Lab	4
EES:3070	Marine Ecosystems and Conservation	3
EES:3220	Evolution of the Vertebrates	4
GEOG:2374/ BIOL:2374	Biogeography	3
GEOG:2950	Environmental Conservation	4
GEOG:3315	Ecosystem Ecology	3
GEOG:3350	Urban Ecology	3
IALL:3117	Ecology and Systematics of Diatoms	4
Other Lakeside Laboratory courses (prefix IALL) may be approved in consultation with an environmental sciences advisor		

Chemical Sciences (Yellow) Track

Course #	Title	Hours
One of these:		
BMB:3110	Biochemistry	3
CEE:4150/CBE:4420	Environmental Chemistry	3
CEE:5440	Foundations of Environmental Chemistry and Microbiology	3
CHEM:2210	Organic Chemistry I	3
CHEM:3120	Spectroscopy and Separations	3
CHEM:3250	Inorganic Chemistry	3
CHEM:4431	Chemical Thermodynamics	3
CHEM:4873	Atmospheric and Environmental Chemistry	3

Geosciences (Brown) Track

Course #	Title	Hours
One of these:		
ENVS:3110/ EES:3110	Chemical Evolution of the Oceans	3
EES:2020/ ENVS:2020	Earth's Climate System	3
EES:2200/ ENVS:2200	Historical Geology	4
EES:2310/ GEOG:2310	Introduction to Climatology	3
EES:2410	Mineralogy	4
EES:3070	Marine Ecosystems and Conservation	3
EES:3300	Sedimentary Geology	4
EES:3360/ GEOG:3360	Soil Genesis and Geomorphology	3
EES:3380/CEE:3328	Fluvial Geomorphology	3
EES:3390	Integrated Watershed Analysis	3
EES:3500	Igneous and Metamorphic Petrology	4
EES:3840	Structural Geology	4
EES:4490	Elements of Geochemistry	3
EES:4520	Isotope Geochemistry	3
EES:4720	Paleoclimatology	3
EES:4790	Applied Environmental Geology	3

Hydrosciences (Blue) Track

Course #	Title	Hours
One of these:		
CEE:3371	Principles of Hydraulics and Hydrology	3
EES:3300	Sedimentary Geology	4
EES:3390	Integrated Watershed Analysis	3
EES:4490	Elements of Geochemistry	3
EES:4630	Hydrogeology	4
EES:4640	Contaminant Hydrogeology	3
EES:4790	Applied Environmental Geology	3
GEOG:4470	Ecological Climatology	3

Teacher Licensure

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Apply on the College of Education website for details on requirements and deadlines for applying to the College of Education and about TEP choices of majors leading to licensure.