

# Department of Environmental Sciences

Previous Degree Requirements: Bachelor of Science in Environmental Sciences

## Natural Science Courses (44 semester hours)

<b>EEES 2010</b>	Introduction to Environmental Studies	3
<b>EEES 2100, 1020</b>	Fundamentals of Geology, Geology Laboratory	4, 1
<b>EEES 2150, 2160</b>	Biodiversity, Biodiversity Laboratory	4, 1
<b>EEES 3100</b>	Surficial Processes	3
<b>EEES 2500</b>	Computer applications in Environmental Science	1
<b>EEES 3050, 3060</b>	Fundamentals of Ecology, Ecology Laboratory	3, 1
<b>EEES 3900</b>	Environmental Science Readings and Communication	3
<b>CHEM 1230, 1280</b>	General Chemistry I, Chemistry I Laboratory	4, 1
<b>CHEM 1240, 1290</b>	General Chemistry II, Chemistry II Laboratory	4, 1
<b>MATH 1750, 1760</b>	Mathematics for the Life Sciences	4, 3
<b>MATH 2600</b>	Introduction to Statistics	3

## Social Science Courses (9 semester hours)

<b>GEPL 3900</b>	Environmental Planning	3
<b>PSC 4340</b>	Environmental Policy	3
<b>ECON 3240</b>	Natural Resources Economics	3

*\*PSC 4340, ECON 4240 and GEPL 3900, required for the ENSC degree, may be used to fulfill the 9-hour distributive requirement in this area.*

## Humanities Course Requirement (3 semester hours)

\* *PHIL 3180, required for the ENSC degree, may be counted toward the 15-hour distributive requirement in this area.*

## Areas of Concentration

For the ENSC degree, all students must have an area of concentration in a Natural Science department. For departments other than this one, the requirement is at least 21 hours of course work. Most ENSC majors elect one of the two concentrations within the Department for their concentration (biology or geology), but a number of concentrations are available:

- [Biology Concentration](#)
- [Geology Concentration](#)
- [Chemistry Concentration](#)
- [Public Health Concentration](#)

### I. Biology Concentration

*In addition to the courses listed above, students electing this area of concentration take:*

**BIOL 2170,** Fundamentals of Life Science II with laboratory 5  
**2180**

*And select at least three courses from the following:*

<b>EEES 4150</b>	Evolution	3
<b>EEES 4250</b>	Soil Ecology	3
<b>EEES 4300</b>	Field Botany	3
<b>BIOL 4310</b>	Invertebrate Biology	3
<b>EEES 4510</b>	Environmental Microbiology	3
<b>EEES 4520</b>	Bioremediation	3
<b>EEES 4540</b>	Microbial Ecology	3
<b>EEES 4550</b>	Methods of Microbial Investigation	3
<b>EEES 4730</b>	Aquatic Ecology	3
<b>EEES 4750</b>	Conservation Biology	3

<b>EEES 4760</b>	Landscape Ecology	3
<b>EEES 4770</b>	Agroecology	3
<b>EEES 4790</b>	Ecology Field Trip	3 or 4
<b>EEES 4800</b>	Plant Physiological Ecology	4
<b>EEES 4980**</b>	Special Topics: Advanced Undergraduate	3 or 4

*\*\* Depends on content of special topics course and requires consent from departmental advisor*

## II. Geology Concentration

*In addition to the courses listed above, students electing this area of concentration take:*

<b>EEES 3210</b>	Earth Materials I: Mineralogy/Petrology	3
<b>EEES 3220</b>	Earth Materials II: Sedimentary Petrology & Stratigraphy	3
<b>EEES 3310</b>	Structural Geology & Mapping	3

*And at least two additional EEES geology courses at the 3000-4000 level:*

<b>EEES 4100</b>	Glacial Geology	3
<b>EEES 4200</b>	Quaternary Geology	3
<b>EEES 4240</b>	Soil Science	3
<b>EEES 4410</b>	Hydrogeology	3
<b>EEES 4450</b>	Hazardous Waste Management	3
<b>EEES 4610</b>	Geophysics	3
<b>EEES 4620</b>	Environmental and Engineering Geophysics	3
<b>EEES 4630</b>	Numerical Methods in Geophysics	3
<b>EEES 4980**</b>	Special Topics: Advanced Undergraduate	3-4

*\*\* Depends on content of special topics course and requires consent from departmental advisor*

## III. Chemistry Concentration

*In addition to the courses listed above, students electing this area of concentration take:*

- CHEM 2410** Organic Chemistry I
- CHEM 2420** Organic Chemistry II
- CHEM 3310** Analytical Chemistry
- CHEM 3360** Analytical Chemistry Laboratory

*And either:*

- CHEM 3510** Biochemistry I

*Or:*

- EEES 4220** Environmental Geochemistry

## **IV. Public Health Concentration**

This track requires the student to maintain an overall GPA of 3.0 or higher during the first 2 years of university study. The student normally will apply at the end of the sophomore year (year 2). In addition to the courses listed above, students electing this concentration take CHEM 2410, 2420 (Organic Chemistry I & II) and the respective labs, CHEM 2460 (1) and CHEM 2470 during the junior year (year 3) and take the following graduate courses at the University's Health Science Campus during their senior year (year 4): PUBH 600 (Public Health Statistics), PUBH 664 (Issues in Public Health), PUBH 601 (Public Health Epidemiology) and PUBH 660 (Health Behavior). If students maintain a 3.0 average in these 4 courses and their overall GPA, these students will be able to use these 12 credits toward the Master of Public Health Degree and should be able to complete BOTH the BS in Environmental Science and the MPH degrees in 5 years. Students interested in the Master of Science in Occupational Health degree rather than the MPH should also take PHYS 1750 (Introduction to Physics) as an undergraduate elective.

## **Other Concentrations**

Other concentration tracks are also available, such as in Physics, Mathematics, or Astronomy; however, few students opt for these.

## **Internship**

All students majoring in ENSC participate in environment-related projects with a government agency, University laboratory, private corporation, non-profit organization, or other approved

sponsor. This experience must last for at least 100 hours, and must be approved in advance by an Environmental Sciences advisor. A written report on the internship is required. Up to 3 hours of course credit may be granted for the internship by enrolling in EEES 4940 (internship); however, credits earned in this way may not be substituted for required courses in the area of concentration. This requirement may be fulfilled at any time prior to graduation. Click [here](#) for internship guidelines and instructions for internship reports, and [here](#) for some ideas for internship opportunities.

## **Exchange Program**

Students with strong academic records may wish to participate in our exchange program with the University of Hertfordshire (England). Participants spend their junior year studying at Hertfordshire. Courses taken there transfer back to Toledo, and students graduate on schedule. Hertfordshire is one of only twelve Environmental Science programs in the United Kingdom receiving a rating of "excellent" by their accrediting agency.