Environmental Sciences Major Snapshot

Department of Environmental Science Policy, and Management

Overview

The Environmental Sciences (ES) major is designed for students interested in studying environmental problems from a scientific perspective. The major prepares students to deal with issues arising from the impact of human interaction on natural systems. To address these problems, all ES students acquire strong backgrounds in math, biological sciences, and physical sciences. Students may choose to specialize further in a biological or physical science field such as ecology, conservation biology, toxicology, geology, hydrology, meteorology, engineering, or a social science field such as planning, policy analysis, economics, environmental justice, education. Each ES student completes a year-long senior research project with the support of a mentor in a biological, physical, or interdisciplinary research area.

The academic advisor is available to answer questions about this major in the Rausser College of Natural Resources Office of Instruction & Student Affairs in 260 Mulford Hall. Visit the ES Major Website for more detailed information.

Research Opportunities

Rausser students can apply for the Undergraduate Research Apprenticeship Program (URAP) and the Sponsored Projects for Undergraduate Research (SPUR). All ES majors are required to complete a senior thesis. Students will also present at the ES Senior Thesis Symposium. The 2023 program can be found here.

Honors Program

All ES majors who have a GPA of 3.6 or higher going into their senior year are encouraged to complete the Honors Program application in the Fall to be enrolled in the honors version of the Senior Research Seminar, ESPM H175A/B/L. Students complete one thesis project which counts as both the honors project as well as the required ES thesis.

Career Options

Graduates are well-prepared for careers in fields such as environmental consulting, education, health, or law; community, urban, or regional planning; and other related areas of environmentalism in public agencies, non-profit conservation organizations, and private companies. Graduates are well-qualified for a variety of graduate programs, including law school, PhD programs, and engineering programs. Please see the ES Major Map for more info.

Declaring or Changing into the Major

To declare the Environmental Sciences Major, please meet with the ES advisor and review the minimum requirements for declaring the major as an RCNR student. To change colleges and declare, review these requirements.

Major Requirements

To create a plan for graduation, use this program planning template

An archive of required classes that are no longer offered can be found here.

Unit and GPA Requirements

All students must complete a minimum of:

- ☐ 120 cumulative units
  - ☐ 36 of these units must be upper division (courses numbered 100-199)
    - ☐ 30 units of upper division coursework within the Environmental Sciences major*
      - ☐ **For students admitted or declared Fall 2023 or later**, 30 units is not needed. Instead, a total of 10 classes is required, regardless of units
      - ☐ 15 of the upper division units must be from Rausser Departments (ENVECON, ENERES, ESPM, NATRES, NST, PMB)
    - ☐ GPA in upper division coursework for the major must be at least 2.0

College, University, and Campus Requirements

- ☐ Entry Level Writing
- ☐ Two courses in Reading & Composition (8 units): R1A and R1B (must be taken for letter grades)
- ☐ American History & Institutions
- ☐ American Cultures (if taken for a letter grade, this course may overlap with another requirement)

All courses for the major, including breadth requirements, must be taken for a letter grade, with a C- or better.

Rausser College adjusted its policies and procedures for the Spring 2020, Fall 2020, Spring 2021, & Summer 2021 due to COVID-19.

Concentration Requirements: Lower Division Math & Science (7-8 courses):

Environmental Sciences majors choose one of three concentrations: Biological, Physical, or Social Sciences.
Students should choose a concentration based on their interests and/or intended research area.
Lower division coursework is *not* required to be completed before your junior year, but it is recommended.

☐ Physical Science	☐ Biological Science	☐ Social Science
☐ Math 1A, or Math 10A ☐ Math 1B, or Math 10B *[MATH 1A and 1B will become MATH 51 and 52 in Fall 2025]*	☐ Math 16A or Math 1A, or Math 10A ☐ Math 16B or Math 1B, or Math 10B *[MATH 1A and 1B will become MATH 51 and 52 in Fall 2025]*	☐ Math 16A or Math 1A, or Math 10A ☐ Math 16B or Math 1B, or Math 10B *[MATH 1A and 1B will become MATH 51 and 52 in Fall 2025]*
☐ Chem 1A and 1AL, or Chem 4A ☐ Chem 3A and 3AL, or Chem 4B	☐ Chem 1A and 1AL, or Chem 4A ☐ Chem 3A and 3AL, or Chem 4B	☐ Chem 1A and 1AL, or Chem 4A ☐ Chem 1B, or Chem 3A & 3AL, or Chem 4B
☐ Biology 1A and 1AL ☐ Biology 1B **OR** ☐ Bio 1B or Biology 11 and 11L ☐ INTEGBI C153, 154, C156, ESPM C103, 111, 113, 114, 115B, 116B, 152, C153, 190* (*varies by semester)	☐ Biology 1A and 1AL ☐ Biology 1B	☐ Biology 1A and 1AL; ☐ Biology 1B **OR** ☐ Bio 1B or Biology 11 and 11L; ☐ INTEGBI C153, 154, C156, ESPM C103, 111, 113, 114, 115B, 116B, 152, C153, 190* (*varies by semester)
☐ Physics 7A ☐ Physics 7B (Math 53 recommended)	☐ Physics 8A, or Physics 7A	☐ Physics 8A, or Physics 7A

Core Requirements (3 courses):

☐ ESPM Environmental Science Core	ESPM 2, ESPM 6, ESPM C10/LS C30V, ESPM 15, or ESPM C46/LS C46
☐ ESPM Social Science Core	ESPM 5, ESPM C22AC/ANTHRO C12AC, ESPM 50AC, ESPM C52, or ESPM 60
☐ Environmental Economics	ENVECON C1 / ECON C3 ***[Fall only]***, ECON 1, or ECON 2

Breadth Requirements (2 courses):

☐ **1 course** (3-4 units) in Arts & Literature, Historical Studies, **or** Philosophy & Values	Select courses from the "Breadth Requirements" listing on https://classes.berkeley.edu/ Please note: Breadth courses may *not* be double counted for any other major requirement except for American Cultures.
☐ **1 course** (3-4 units) in Social & Behavioral Sciences **or** International Studies	

Upper Division Requirements (8 areas, for a total of 10 courses, including 175L):	
The ES major requires completion of a year-long senior research project. **Students who plan to study abroad or otherwise not continuously enroll at Berkeley for their junior and senior years should meet with the ES advisor.**	
☐ Upper Division Statistics	ESPM 173 (Fall), PBHLTH 142, STAT C131A, STAT 133, STAT 134, STAT/DATA C140, EECS 126, or Data C100 ***and*** Stat 33B [Must be completed **before** ESPM 100 ES - **latest is fall of junior year**]
☐ Intro to Methods of Environmental Science	ESPM 100ES ***[Must be taken spring of junior year*]***
☐ Senior Research Seminar A	ESPM 175A and 175L ***[Fall only, must be taken fall of senior year]***
☐ Senior Research Seminar B	ESPM 175B and 175L ***[Spring only, must be taken spring of senior year]***
☐ Environmental Modeling	ENERES 131 (fall), ESPM 157 (fall), ESPM 102C (spring), or ENERES 102 (spring)
☐ Human Environment Interactions *Courses at the top of this list are most frequently offered, courses at the bottom are summer only, **or** infrequently offered*	ESPM 101A, ESPM 102D, ESPM 155AC, ESPM 163AC/SOCIOL 137AC, ESPM C167/PBHLTH C160, ESPM C176/ENERES C176, ESPM 169, ESPM W169, ESPM 186, ENERES C160, ENVECON C101/ECON C125, ENVECON 153, ENVECON 162, GEOG 130, GEOG 138, PB HLTH 150B ANTHRO 137, ESPM 151, ESPM 160AC/HIST 120AC, ESPM 161, ESPM C162A, ESPM 168, ENERES 170, ENERES 171, or ENERES C192/UGBA C192R
☐ Elective in Area of Concentration (3-4 units)	**See list of approved courses**: use the 'Major Requirements' filter on classes.berkeley.edu for easier searching
☐ Additional ES Elective (3-4 units)	May be selected from *any* area of concentration. See links above.

Class Planning

It is highly recommended to use this program planning template to plan for graduation

*ESPM 100ES, ESPM 175A/L, and ESPM 175B/L **must be taken in the semesters indicated**. 100ES can be taken a year early, in order for a student to study abroad.

Summers are considered to be optional. With good planning, you will not have to take any Summer courses.
Please check in with your ES advisor to work on your course planner together.
You can find a sample degree plan here.

Studying Abroad

Plan carefully around the required Statistics, Research Methods, and Thesis courses

*ESPM 100ES, ESPM 175A/L, and ESPM 175B/L **must be taken in the semesters indicated**. 100ES can be taken a year early, in order for a student to study abroad.

Here is a sample degree plan for students studying abroad in the major.
I am working to add more details here, but your priority should be to complete your Statistics requirement early, and don't plan to go abroad senior year.