

## Environmental Sciences Major Snapshot

### Department of Environmental Science, Policy & Management

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The Environmental Sciences major is designed for students interested in studying environmental problems from a scientific perspective. The ES 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 biological and physical sciences, and math. 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 Environmental Sciences Advisor is Susan Kishi. Contact her with any questions you may have at 510-643-9479, [envsci@berkeley.edu](mailto:envsci@berkeley.edu), or in person at 260 Mulford Hall. The ES Director is Professor Dennis Baldocchi. He may be reached at [baldocchi@berkeley.edu](mailto:baldocchi@berkeley.edu), or 345 Hilgard. General questions about the College of Natural Resources should be directed to the CNR Office of Instruction and Student Affairs in 260 Mulford Hall, 510-642-0542, [cnrteaching@berkeley.edu](mailto:cnrteaching@berkeley.edu).

#### Research Opportunities ♦ Career Options ♦ Medical School ♦ Health Professions

In addition to the required senior thesis research project, ES 196A/196B/196L, there are many research opportunities for ES students at UC Berkeley. They vary widely, from student initiated research to faculty initiated research and from formal projects to informal projects. To start gathering information about research opportunities, go to the Berkeley campus web site, sponsored by the Office of Undergraduate Research, or talk to your ES advisor. CNR students may apply for CNR Sponsored Projects for Undergraduate Research (SPUR), and Undergraduate Research Apprenticeship Program (URAP)

Office of Undergraduate Research: <http://research.berkeley.edu>  
SPUR: <http://nature.berkeley.edu/site/spur.php>  
URAP: <http://research.berkeley.edu/urap/index.php>  
ES Senior Research: <http://nature.berkeley.edu/classes/es196/index.html>

Given the broad nature of the Environmental Sciences curriculum, our graduates are prepared for career options ranging from environmental consulting, management, law, planning, or research. The ES major also provides an excellent foundation for graduate or professional degrees in the biological, physical and social sciences, health professions (including medicine), law, or business. Employers generally appreciate students who have ability to design and carry out research and projects, produce effective reports, have good writing and quantitative skills – which all ES graduates experience as part of their senior research project.

For more detailed information on key skills developed in the ES major, or on career pathways open to our graduates, please consult the ES Career Snapshot handout or download a copy from the CNR web site at [http://nature.berkeley.edu/site/forms/oisa/es\\_career\\_snapshot.pdf](http://nature.berkeley.edu/site/forms/oisa/es_career_snapshot.pdf)

Also check out our pre-med/ES requirements comparison chart at [http://environmentalsciences.berkeley.edu/new\\_students/premed.html](http://environmentalsciences.berkeley.edu/new_students/premed.html) to see how closely the requirements in each ES match the prerequisites for medical school.

#### Getting a Degree

The information on this snapshot is a guide to the degree requirements. See the ES advisor for more details. Major requirements are summarized on the back of this guide. To earn a Bachelor of Science degree from UC Berkeley in Environmental Sciences, students must complete Unit and GPA requirements, University and Campus requirements, College requirements, and major requirements in the College of Natural Resources. (Requirements may change so please contact the ES Advisor for the most recent information.) Note: Students completing the ES major in the College of Natural Resources earn a Bachelor of Science degree

#### Unit and GPA Requirements

All students must complete a minimum of 120 units to graduate; 36 of these must be upper division, 30 of the upper division units must be Environmental Sciences units, 15 of the upper division units must be from CNR. Students must maintain a 2.0 cumulative GPA, a 2.0 GPA in their ES major requirements, and not receive a grade below C- in their major requirements (lower and upper division courses).

**Please note:**

These requirements apply to students who declare the Environmental Sciences major Fall 2011 or later.

**University and Campus Requirements**

- Subject A                       American History and Institutions                       American Culture

**College Requirements**

- Two courses in Reading and Composition, R1A and R1B  
 15 Upper division units must be in the College of Natural Resources (ESPM, EEP, NST, PMB)

**Major Requirements**

Environmental Sciences majors choose one of three concentrations: Biological, Physical, or Social Sciences. Students should choose a concentration based on their intended research area. All courses **must** be taken for a letter grade.

**Lower Division Requirements**

	<b>Biological Science Concentration</b>	<b>Physical Science Concentration</b>	<b>Social Science Concentration</b>
<b>Biology Courses</b>	Biology 1A/L-1B	Biology 1A/L-1B <b>or</b> Biology 11/L plus one of: IB 153, 154; ESPM 102A, 111, 113, 114, 115B, 116A, or 116B	Biology 1A/L-1B <b>or</b> Biology 11/L plus one of: IB 153, 154; ESPM 102A, 111, 113, 114, 115B, 116A, 116B
<b>Chemistry Courses</b>	Chemistry 1A/L-3A/L	Chemistry 1A/L-3A/L	Chemistry 1A/L-3A/L <b>or</b> 1A/L-1B
<b>Math Courses</b>	Math 1A-1B <b>or</b> 16A-16B	Math 1A-1B	Math 1A-1B <b>or</b> 16A-16B
<b>Physics Courses</b>	Physics 8A	Physics 7A-7B	Physics 8A

**All ES Students must complete the following:**

- ESPM Env Sciences Core, one course from** ES 10, ESPM 2, 6 **or** 10  
 **ESPM Social Science Core, one course from** ESPM C11 (L&S C30U), ESPM C12 (ENG C77), 50AC **or** 60

**Environmental Economics & Policy (EEP) C1/Economics (Econ) C3****2 Breadths from the following:**

**One course** (3-4 units) in Arts & Literature, Historical Studies **or** Philosophy & Values Breadth

**One course** (3-4 units) in Social & Behavioral **or** International Studies Breadth

Select courses from "7 Breadth" listing: <http://ls-advise.berkeley.edu/requirement/7breadth.html>

Must be taken for a letter grade, may not be double counted for another requirement

**Upper Division Requirements** (1 course each for a total of minimum 30 upper division units)

<b>Statistics</b>	Stat 131A, Pb Hlth 142 or 141, or ESPM 173
<b>Intro to Methods and Problems</b>	ES 100 (spring only)
<b>Environmental Modeling</b>	ERG 102 (spring only) <b>or</b> ESPM C104/EEP C115 (fall only)
<b>Human Environment Interactions</b>	EPS 170AC/LNS 170AC, EEP 101, C101/Econ 125, 131, 140AC, 153, 162, C180/ERG C180, ES 125, ESPM 102D, 151, 155, 160AC/Hist 120AC, 161, 162, 163AC/Soc 128AC, 165, 166, C167, 168, 169, 186, Energy & Res 170, 175, Geog 130, 138, Anthro 137
<b>Elective in Area of Concentration</b> (3-4 units)	See <a href="http://environmentalsciences.berkeley.edu/ES%20Electives.pdf">http://environmentalsciences.berkeley.edu/ES%20Electives.pdf</a>
<b>Additional ES Elective</b>	See <a href="http://environmentalsciences.berkeley.edu/ES%20Electives.pdf">http://environmentalsciences.berkeley.edu/ES%20Electives.pdf</a>
<b>Senior Research Seminar</b> (first half)	ES 196A (fall only) and ES 196L
<b>Senior Research Seminar</b> (second half)	ES 196B (spring only) and ES 196L