

ENVIRONMENTAL SCIENCE AND POLICY

College of Liberal Arts
College of Natural Sciences and Mathematics

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Career Possibilities

Environmental Analyst • Teacher • Ecologist • Geochemist
• Environmental Impact Report Writer • Community Development Specialist • Urban Planner • Environmental Planner • Peace Corps • Non-Governmental Organization Activist • Mass Media (Journalism, Radio, Television)
• Environmental Advocate • Environmental Consultant
• Public Relations • Public Policy Administrator • Environmental Law • Environmental Health • Environmental Economics • Environmental Toxicology • Sustainable Development Specialist • Green Business (For more information, see www.careers.csulb.edu.)

Introduction

The Environmental Science and Policy (ES&P) degrees program is jointly housed in the College of Liberal Arts and the College of Natural Sciences and Mathematics, reflecting its inherent interdisciplinary nature. A Bachelor of Arts and a Bachelor of Science as well as a minor are available. See the ES&P web-page for details. We highly encourage B.A. students to double major or seek a minor in a closely related discipline such as anthropology, economics, geography, international studies or political science. Students in the B.S. degree program are encouraged to double major or seek a minor in anthropology, biology, chemistry, earth science, ecology, economics, geography, geology, or political science.

Bachelor of Arts in Environmental Science and Policy (120 units)

Requirements

Lower Division:

Take all of the following courses:

ECON 100 Principles of Macroeconomics (3)

**C" or better required.

Prerequisites: MATH 103 or higher and one GE Foundation course.

ECON 101 Principles of Microeconomics (3)

**C" or better required.

Prerequisite/Corequisite: MATH 103 or higher.

ES P 200 California Environmental Issues (3)

Prerequisites/Corequisites: (GEOL 102, GEOL 104 OR GEOG 140 or GEOG 130 or ESP 101) and (BIOL 200 or BIOL 211 or ECON 101); or instructor consent.

GEOL 102 General Geology (3)

**C" or better required.

Prerequisites/Corequisites: A course that fulfills the A.1 GE requirement and three years of high school mathematics including algebra, geometry, and intermediate algebra or the equivalent.

GEOL 104 Geology Laboratory (1)

* "C" or better required

Prerequisites/Corequisites: A course that fulfills the A.1 GE requirement and three years of high school mathematics including algebra, geometry, and intermediate algebra or the equivalent, and concurrent or prior enrollment in GEOL 102.

GEOL 280 Water Resources and Society (3)

Prerequisites: GEOL 102, GEOL 104. Four years of high school mathematics.

Take one of the following choices:

BIOL 200 General Biology (4)

**C" or better required.

Prerequisite: GE Foundation requirements.

BIOL 211 Introduction to Evolution and Diversity (4)

**C" or better required.

Prerequisite/Corequisite: CHEM 111A with a grade of "C" or better.

Take one of the following courses:

("C" or better required)

CHEM 111A, CHEM 140; GEOL 191;

Take one of the following courses (**C" or better required.):

MATH 115, MATH 119A, MATH 122

*Take one of the following courses:

ESP 101 or GEOG 140

or

Any Introductory Environmental Science or Studies course

Upper Division

Take all of the following courses:

E SP 330 California Ecosystems (3)

Prerequisites: GEOG 101 or GEOG 130 or GEOG 140 or ES P 200 AND GEOG 200 or BIOL 260.

ES P 300 Environmental Law and Policy (3)
Prerequisites: ESP 200 and upper division standing; or consent of instructor.

ES P 400 Environmental Science and Policy Capstone Project (3)

Prerequisites: BIOL 350 or ESP 330; ECON 306 or ECON 462 or ECON 463 or ECON 464 or CE 406; ESP 300; GEOG 481 or GEOG 473; GEOL 300; OR consent of instructor. In addition, students must have scored 11 or higher on the GEAR Placement Examination or completed the necessary portfolio course that is a prerequisite for GEAR.

GEOL 300 Earth Systems and Global Change (3)
Prerequisites: GE Foundation requirement, upper division standing, and CHEM 100 or CHEM 111A or GEOL 102 or GEOL 106 with a grade of "C" or better

Take one of the following courses:

ECON 310 Microeconomic Theory (3)
Prerequisites: ECON 100, ECON 101, and either MATH 115 or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 317 (3)
Prerequisite: ECON 100, 101, ESP 200 and one of the following: MATH 115 or MATH 119A or MATH 119B or MATH 122

Take one of the following courses:

GEOG 473 Remote Sensing (4)
Prerequisites GEOG 200 (or equivalent) and GEOG 280 or consent of instructor.

GEOG 481 Geographic Information Science for Natural Sciences (4)
Prerequisites: Junior/Senior/Graduate standing; GEOG 140 or BIOL 153 or GEOL 102.

Take one course selected from the following:

POSC 328, POSC 329, POSC 431, POSC 432 ,
GEOG 446

Take one course selected from the following:

ECON 462, ECON 463, ECON 464

Take one course selected from the following:

GEOG 442, GEOG 447, GEOG 455, GEOG 458

Take one course selected from the following:

HIST 464, HIST 482; ENGL 444; ASAM 350; WGSS 424

Take one course selected from the following:

ANTH 450; BIOL 457, BIOL 459, ENGL 444; ESP 392; ESP 495; GEOG 443, GEOG 448, GEOG 486, GEOG 492; HIST 482; NSCI 492

Additional 6 units of course work selected from courses approved as options satisfying upper division requirements above or from the following approved list of additional courses; all must be upper division or approved by the advisor.

Additional Approved Courses:

AIS 336, ANTH 401; BIOL 450, BIOL 456; ECON 355, ECON 403, ECON 410, ECON 434, ECON 485, ECON 486; ENGR 302; ESP 490, ESP 499; GEOG 340, GEOG 355, GEOG 400, GEOG 440, GEOG 441, GEOG 443, GEOG 444, GEOG 445, GEOG 452, GEOG 460, GEOG 464, GEOG 471, GEOG 473; GEOG 475, GEOG 482, GEOG 487A, GEOG 488, GEOL 339, GEOL 445 HFHM 370; MKTG 405; SOC 350, SOC 355, SOC 410.

Bachelor of Science in Environmental Science and Policy (120 units)

Requirements

Lower Division:

Take all the following courses:

BIOL 211 Introduction to Evolution and Diversity (4)

**C" or better required.

Prerequisite/Corequisite: CHEM 111A with a grade of "C" or better.

BIOL 212 Introduction to Cell and Molecular Biology (4)

**C" or better required.

Prerequisites: BIOL 211, CHEM 111A with grades of "C" or better. Prerequisite/Corequisite: CHEM 111B.

BIOL 213 Introduction to Ecology and Physiology (4)

**C" or better required.

Prerequisites: BIOL 211, BIOL 212, CHEM 111B, each with a grade of "C" or better.

BIOL 260 Biostatistics (3)

**C" or better required.

Prerequisites: BIOL 201 or BIOL 207 or BIOL 211 or MICR 200; MATH 111 or MATH 113 or MATH 119A or MATH 122 all with a grade of "C" or better.

CHEM 111A General Chemistry (5)

**C" or better required.

Prerequisites: A passing score on the Chemistry Placement Examination.

Corequisite: MATH 109 or higher.

CHEM 111B General Chemistry (5)

**C" or better required.

Prerequisites: CHEM 111A and MATH 113 or MATH 115 or MATH 117 or MATH 119A or MATH 122 all with a grade of "C" or better.

CHEM 227 (or CHEM 220A) Fundamentals of Organic Chemistry (3)

Prerequisite: CHEM 111A with a grade of "C" or better; CHEM 111B is recommended.

ECON 101 Principles of Microeconomics (3)

* "C" or better required

Prerequisite/Corequisite: MATH 103 or higher.

ES P 200 California Environmental Issues (3)

Prerequisites/Corequisites: (GEOL 102, GEOL 104 OR GEOG 140 or GEOG 130 or ESP 101) and (BIOL 200 or BIOL 211 or ECON 101); or instructor consent.

GEOL 102 General Geology (3)

**C" or better required.

Prerequisites/Corequisites: A course that fulfills the A.1 GE requirement and three years of high school mathematics including algebra, geometry, and intermediate algebra or the equivalent.

GEOL 104 Geology Laboratory (1)

("C" or better required)

Prerequisites/Corequisites: A course that fulfills the A.1 GE requirement and three years of high school mathematics including algebra, geometry, and intermediate algebra or the equivalent, and concurrent or prior enrollment in GEOL 102.

GEOL 280 Water Resources and Society (3)

Prerequisites: GEOL 102, GEOL 104. Four years of high school mathematics.

Take one the following courses:

MATH 122 Calculus I (4)

**C" or better required.

Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 111 and MATH 113.

Or

MATH 119A Survey of Calculus I (3)

("C" or better required)

Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 113.

Take one the following courses:

MATH 123 (or 119B with advisor approval) Calculus II (4)

Prerequisite: A grade of "C" or better in MATH 122.

Or

MATH 119B Survey of Calculus II (3)

Prerequisite: A grade of "C" or better in MATH 119A or MATH 122.

Take one the following courses:

PHYS 151 (or PHYS 100A with advisor approval)

Mechanics and Heat (4)

Prerequisite/Corequisite: MATH 122.

Or

PHYS 100A General Physics (4)

Prerequisite: MATH 109 or MATH 113 or MATH 119A or MATH 122

(BIOL 111, BIOL 111L, BIOL 212, BIOL 212L, BIOL 213, BIOL 213L are required if courses were taken prior to catalog year 2010-11; also, if a transfer student took courses equivalent to BIOL 211, BIOL 212, or BIOL 213 at another institution without labs, they must take BIOL 212L, BIOL 213L, and BIOL 213L here)

Upper Division:

Take all the following courses:

BIOL 350 General Ecology (3)

Prerequisites: BIOL 211, BIOL 212, BIOL 213, BIOL 260; MATH 119A or MATH 122 all with a grade of "C" or better.

ES P 300 Environmental Law and Policy (3)

Prerequisites: ESP 200 and upper division standing; or consent of instructor.

ES P 400 Environmental Science and Policy Capstone Project (3)

Prerequisites: BIOL 350 or ESP 330; ECON 306 or ECON 462 or ECON 463 or ECON 464 or CE 406; ESP 300; GEOG 481 or GEOG 473; GEOL 300; OR consent of instructor. In addition, students must have scored 11 or higher on the GEAR Placement Examination or completed the necessary portfolio course that is a prerequisite for GEAR.

GEOL 300 Earth Systems and Global Change (3)

Prerequisites: GE Foundation requirement, upper division standing, and CHEM 100 or CHEM 111A or GEOL 102 or GEOL 106 with a grade of "C" or better.

Take one of the following courses:

GEOG 481 Geographic Information Science for Natural Sciences (4)

Prerequisites: Junior/Senior/Graduate standing; GEOG 140 or BIOL 153 or GEOL 102.

Or

GEOG 473 Remote Sensing (4)

Prerequisites GEOG 200 (or equivalent) and GEOG 280 or consent of instructor.

Take the following course:

ECON 306 Environmental Issues of the World Economy (3)

Prerequisites: G.E. Foundation and the Category B requirement, and ECON 101.

Take 3 units of social science electives, chosen from the following:

GEOG 340, GEOG 355, GEOG 440, GEOG 446, GEOG 447, GEOG 448, GEOG 455, GEOG 458, GEOG 460; GEOG 464; HIST 482; ENGL 444; ASAM 350; SOC

350; WGSS 424; ECON 462, ECON 463, ECON 464

Take 9 units of natural science electives, chosen from the following:

BIOL 312, BIOL 313, BIOL 316, BIOL 324, BIOL 342, BIOL 345, BIOL 353, BIOL 355, BIOL 412, BIOL 415, BIOL 419, BIOL 420, BIOL 421, BIOL 423, BIOL 424, BIOL 427, BIOL 439, BIOL 449, BIOL 450, BIOL 451, BIOL 452, BIOL 454A, BIOL 454B, BIOL 455, BIOL 456, BIOL 457, BIOL 459, BIOL 496; GEOL 339, GEOL 341, GEOL 445, GEOL 461, GEOL 465, GEOL 466, GEOL 474, GEOL 477.

Take an additional 3 units selected from the social science or natural science electives listed above if necessary to meet the university requirement for upper division units.

Minor in Environmental Science and Policy

This minor may be combined with any major at CSULB except the B.A. and B.S. in Environmental Science and Policy. It requires a minimum of 20 units (at least 9 of which must be upper division) of course work.

Prerequisites

Take all the following prerequisite courses (do not count toward the minor):

GEOL 102 and GEOL 104; OR GEOG 140 OR GEOG 130 OR ESP 101) AND (BIOL 200 OR ECON 101).

Requirements

Take all the following courses:

ES P 200 California Environmental Issues (3)

Prerequisites/Corequisites: (GEOL 102, GEOL 104 OR GEOG 140 or GEOG 130 or ESP 101) and (BIOL 200 or BIOL 211 or ECON 101); or instructor consent.

ES P 300 Environmental Law and Policy (3)

Prerequisites: ESP 200 and upper division standing; or consent of instructor.

Take a minimum of 14 units from the following:

At least 9 units of sustainability coursework from the following list:

AIS 336 Indigenous Philosophies of Sustainability; ASAM 350: Environmental Justice; BIOL 459: Conservation Biology; DESN 268: Sustainability by Design; ENGR 302i: Energy and Environment; ESP 392: Climate Action and Sustainability at CSULB; GEOG 355: International Environmental Issues; GEOG 464: Sustainable Cities; HFHM 370: Exploring a Sustainable Food System; MKTG 405: Green Marketing and Sustainability.

With no more than two elective courses from the following list:

BIOL 350, BIOL 353, BIOL 450, BIOL 451, BIOL 456, BIOL 457, BIOL 459, BIOL 464; ECON 306, ECON 462, ECON 463, ECON 464; GEOG 440, GEOG 442, GEOG 443, GEOG 444, GEOG 447, GEOG 448, GEOG 455, GEOG 458, GEOG 460, GEOG 481, GEOG 487A; and GEOL 280, GEOL 300, GEOL 339, GEOL 465, GEOL 466, GEOL 477, HIST 482, ENGL 444, WGSS 424.

Environmental Science and Policy Courses (ES P)

LOWER DIVISION

101. The Global Environment

Introduction to the Earth's principal human-environmental relationships and biogeographic processes with a focus on how human actions impact the geography of living things from the local to the global scale.

Prerequisite: One foundation Course

Same course as GEOG 101. Not open for credit to students with credit in GEOG 101.

200. California Environmental Issues (3)

Prerequisites/Corequisites: (GEOL 102, GEOL 104 OR GEOG 140 or GEOG 130 OR ESP 101) and (BIOL 200 or BIOL 211 or ECON 101); or instructor consent.

Corequisite(s): (GEOL 102, 104 OR GEOG 140 OR GEOG130 OR ESP 101) AND (BIOL 200 OR BIOL 211 OR ECON 101); OR instructor consent.

Introduction to the history, nature, status, and future of a major environmental issue in California. Biological, physical, and societal aspects will be examined and integrated with the goal of developing a plan to meet the challenges of the 21st Century.

Letter grade only (A-F). (Lecture 2 hrs., discussion 1 hr., and field trips.)

UPPER DIVISION

300. Environmental Law and Policy (3)

Prerequisites: ESP 200 and upper division standing; or consent of instructor.

Property rights, federal and state roles in decision-making, rights and limits of both private parties and the broad public interest. Emphasis on science in decision-making, choices between regulations and incentives, and role of bureaucracy.

Letter grade only (A-F). (2 hrs lecture, 1 hr discussion).

330. California Ecosystems (3)

Prerequisites: GEOG 130 or GEOG 140 or ESP 101 or ESP 200; AND GEOG 200 or BIOL 260; or instructor consent.

Introduction to the ecology and biogeography of natural California landscapes, including field examination of habitats, collection and analysis of environmental data, and reporting of field or laboratory findings.

Letter grade only (A-F). Same course as GEOG 330. Not open for credit to students with credit in GEOG 330..

(2 hours lecture/activity, 2 hours field/laboratory)

392. Climate Action and Sustainability at CSULB (3)

Prerequisites: Completion of the entire Foundation curriculum along with one or more Explorations courses and upper-division standing

Students join CSULB's efforts to achieve climate neutrality (zero net greenhouse gas emissions) and sustainability through service learning assignments working with staff, faculty and community partners. Provides opportunities for all majors to apply and develop skills through hands-on experience.

6 hours activity. Same course as GEOG 392. Not open for credit to students with credit in GEOG 392.

400. Environmental Science and Policy Capstone Project (3)

Prerequisites: BIOL 350 or ESP 330; ECON 306 or ECON 462 or ECON 463 or ECON 464 or CE 406; ESP 300; GEOG 481 or GEOG 473; GEOL 300; OR consent of instructor. Open to Environmental Science and Policy and Geography majors only. In addition, students must have scored 11 or higher on the GEAR Placement Examination or completed the necessary portfolio course that is a prerequisite for GEAR.

An interdisciplinary evaluation of the physical, biological, social, economic, and legal dimensions of a local environmental issue. Examples include policies to control surface water run-off, policies for marine protected areas, dredging harbors, and developing, preserving, restoring wetlands and estuaries. Requires a grade of "C" or better to pass.

Letter grade only (A-F). (2 hrs lecture, 3 hr laboratory-field work).

490. Selected Topics in Environmental Science and Policy (3)

Prerequisite: Consent of instructor.

Topics of current interest in environmental science and policy selected for intensive development.

Letter grade only (A-F). May be repeated to a maximum of 6 units with different topics in different semesters. Topics announced in the *Schedule of Classes*.

495. Applied Internship (3)

Prerequisites: Upper division standing. Open to Environmental Science and Policy and Geography majors only.

Practical experience in an appropriate business, government or community-based organization to enhance professional development.

Same course as GEOG 492. Not open for credit to students with credit on GEOG 492. May be repeated to a maximum of 6 units; a second semester experience shall differ substantially from first semester experience. (6 hours activity/laboratory)

499. Environmental Science and Policy Directed Study (1-6)

Prerequisite: Consent of instructor.

Independent study under the supervision of a faculty member.

May be repeated to a maximum of 6 units in different semesters.