

03-01

January 24, 2003

**Bachelor of Arts in Environmental Science and Policy (code 2-8512) and
Bachelor of Science in Environmental Science and Policy (code 3-8512)**

These two new degrees were recommended by the Academic Senate on December 7, 2000, approved by the President on January 19, 2001, and approved by the Chancellor's Office on November 18, 2002

The Environmental Science & Policy degree program is jointly housed in the College of Natural Sciences and Mathematics and the College of Liberal Arts, reflecting its inherent interdisciplinary nature.

Today's environmental problems call for people who are educated in more than one discipline, highly trained in technical skills, and aware of the political, economic, and social dimensions of environmental decisions. The degrees in Environmental Science & Policy provide solid training in basic physical, biological, and social sciences, and also address the human involvement in environmental issues. This curriculum prepares students for professional careers in Environmental Science and Policy and for subsequent graduate study in MS, PhD, and law degree programs.

In the narrowest sense, environmental science is the study of the impact of human systems on physical and biological systems, and the dependence on natural resources by human systems. In a broader sense, environmental science is the study of the interaction and co-evolution of human, physical, and biological systems. Natural Science is the study of physical and biological systems. Social science is the study of human systems-economic systems, political systems, human perceptions, and human interactions. Environmental science requires knowledge of both natural and social science. Environmental policy is concerned with the most effective means of intervening to alter the pathways among which natural and human systems co-evolve. Effective intervention considers benefits and costs, uncertainties and risks, limits of knowledge, and presupposes the purposes of intervention, and the values from which the purposes are derived. The purpose of environmental science and policy is to design, evaluate, and implement policies that alter the impact of human systems on physical and biological systems, and the pathways by which natural and human systems co-evolve.

Both Bachelor of Science and Bachelor of Arts degrees are offered. Most required courses are those offered in related disciplines in the College of Natural Sciences and Mathematics and the College of Liberal Arts. The curriculum fosters cross-disciplinary communication in the several required courses common to both degree programs and particularly in the Environmental Science & Policy courses (ES P 200, 300, 400).

The mix of required courses includes both natural and social sciences in both degree programs, while emphasizing natural sciences in the BS program and emphasizing social sciences in the BA program. Elective courses in the BS program enhance the students' knowledge in natural sciences and quantitative/computer skills in the social sciences.

Elective courses in the BA program emphasize applications of social science to environmental issues and policy, while permitting students to further develop their knowledge of natural sciences. The curricula of the two degrees are designed to encourage and facilitate students pursuing double majors with departments in natural or social science.

Career Paths

The Directors together with the Faculty are responsible for advising majors in the Environmental Science and Policy degree program. Majors are assigned to appropriate advisors during their first semester in the program and are encouraged to consult with their advisor every semester. Students will be advised to select elective courses to develop areas of interest and to further their career objectives.

BS Degree: We advise majors to consider jointly majoring or minoring in ecology, microbiology, chemistry, geology, economics, or geography. The BS degree requires an advanced level of understanding of earth systems, living systems, and the role and effect of chemicals in natural systems. Graduates are trained for entry positions in industry and government that require a high degree of specialization in technical analyses in natural sciences, or quantitative and computer methods in social sciences. Graduates with the BS Degree with a track in natural sciences will be qualified for graduate programs (MS and PhD) in biological sciences, geology or chemistry, at most universities in the country. Graduates with the BS degree with a social science track are qualified to apply for the MS program in Environmental Health Sciences at UCLA, and subsequently the interdepartmental doctoral program in Environmental Science and Engineering degree at UCLA; the Ph.D. program in ecology and economics at UC Santa Barbara; the Ph.D. program in Social Ecology at UC Irvine; and the MA and Ph.D. program in Energy and Resources at UC Berkeley.

BA Degree: We advise majors to jointly major in either economics or geography, pursue the minor in journalism or the option in public relations in journalism, the political science major or minor, the minor in public administration in political science, the interdisciplinary minor in public policy, or the major or minor in international studies, depending on the student's career goals and interests. Graduates are especially well prepared for positions in state and local government, private consulting firms, energy companies, news organizations, environmental advocacy groups, consulting firms, and public relations firms. Graduates are prepared to directly enter Ph.D. programs in economics and geography, as well as MBA programs in environmental science and management, MA programs in economics or geography, and law school.

Bachelor of Arts in Environmental Science and Policy (code 2-8512) (120 units)

The B.A. degree program emphasizes the social sciences, with a basic introduction to physical and biological sciences applied to natural systems. Required courses emphasize social sciences and include breadth in natural sciences. Elective courses include social sciences applied to environmental analysis and policy, and permit some additional coursework in natural sciences.

Lower Division: BIOL 200, 260; CHEM 202; ECON 100, 101; ES&P 200; GEOL 102, 104, 280; MATH 115 or 119A or 122.

Upper Division: BIOL 350; ECON 310; one course selected from ECON 462, 463, and 464; ES&P 300, 400; GEOG 485; one course selected from GEOG 442, 455, and 460; GEOL 300I; POSC 431.

Recommended Courses for General Education Requirements: Category D.1b: POSC 100; Category D.2: ECON 306I or GEOG 100 (or 100W).

Additional 21 units of course work selected from the following courses, 12 units of which must be Upper Division or approved by the advisor:

BIOL 303I; COMM 330; ECON 403, 410H, 434, 462, 463, 464, 481, 486, 490, 495; GEOG 140 or 150, 160, 400, 440, 442, 444, 452, 455, 460, 483, 486, 488, 492; GEOL 190, 303I; HIST 481, 482; MICR 200, 303; PHYS 100A or PHYS 101A; POSC 329, 442; SOC 494; S W 491.

Bachelor of Science in Environmental Science and Policy (code 3-8512) (123 units)
The B.S. degree program emphasizes the physical and biological sciences, with a basic introduction to social science methods applied to human systems. Required courses emphasize natural sciences and include breadth in social sciences. Elective courses include physical and biological sciences, and technical courses in social sciences.

Lower Division: BIOL 211A, 211B, 260; CHEM 111A, 111B; ES&P 200; GEOL 102, 104, 280; MATH 119A, 119B (or 122, 123).

Upper Division: BIOL 350; CHEM 327 (or 320A,B); ECON 300 (or 100 & 101), 310; one course selected from ECON 462, 463, and 464; ES&P 300, 400; GEOG 485; GEOL 300I.

Recommended Courses for General Education Requirements: Category D.1b: POSC 100; Category D.2: ECON 306I or GEOG 100 (or 100W).

Additional 20 units of course work selected from the following list, 8 units of which must be Upper Division or approved by the advisor. For those in Natural Science track, 12 units must be in Biology and Microbiology, Geology, Chemistry, and Chemical Engineering. PHYS 100A,B (or 151, 152) required for the Natural Science track. For those in Social Science track, 12 units must be in Economics or Geography.

PHYS 100A,B or PHYS 151, 152; BIOL 303I, 313, 324, 427, 450, 451, 456, 457, 460, 464, 465, 467; CHEM 251, 320A,B, 377A,B, 441A, 451; CH E 475; ECON 403, 410H, 434, 462, 463, 464, 481, 486; GEOG 400, 440, 442, 444, 452, 455, 460, 483, 486, 488; GEOL 190, 303I, 431, 460, 461, 477, 535, 554, 556; MICR 200, 211, 303, 441; NSCI 492

EFFECTIVE: SPRING 2003

Code: 2-8512 and 3-8512

College: 28 and 65

Career: UG

IPEDS (Major) ERSS: 49011

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