

HYDROLOGIC SCIENCES AND POLICY

PREPARATION FOR THE MAJOR

High School Preparation

Recommended as part of or in addition to UC's "a-g" admission requirements:

English composition,
Mathematics through pre-calculus,
Economics,
Biology,
Chemistry,
Physics.

Transfer Preparation

To make normal progress in the major, complete the following courses prior to transfer:

A course in microeconomics,
One year of science-based calculus,
Differential equations, linear algebra
Introduction to the Social and Cultural Environment, or American Government and Politics,
Great Issues in the History of Public Policy
A yearlong sequence in chemistry with laboratory,
A yearlong sequence in physics with laboratory,
Geology and the environment, or physical geology,
A yearlong sequence in biology with laboratory,
Physical geography,
One course in probability and statistics.

Please see the UCSB *General Catalog* (www.catalog.ucsb.edu) or your school counselor for more information on course preparation. California community college students should see www.assist.org.

The Program

In 1995, the Environmental Studies Program became one of the first academic programs on the West Coast to offer a Bachelor of Science degree specifically designed to study the significant role water plays in our environment. The main focus of the Hydrologic Sciences program and major is to provide students with the scientific training needed to understand and solve complex hydrologic problems at local, regional, and global levels.

Hydrology is a science dealing with the occurrence, circulation, distribution, and properties of the waters of the solid earth and its atmosphere. Many of the significant environmental problems that society is facing today are related to hydrologic or water issues. These include the hydrologic impact of climate change; the transportation of hazardous materials in both ground and surface water; the maintenance of high quality water for human consumption, industry, irrigation, recreation, energy generation, and agriculture; the understanding of geological hazards; and the management of important aquatic environments. Because water is important to and affected by physical, chemical, and biological principles, the curriculum of the B.S. degree in Hydrologic Sciences is multidisciplinary.

The Major

The goal of the Hydrologic Sciences curriculum is to provide a rigorous framework for students to examine the hydrologic process in our environment. Although the program is housed within the Environmental Studies Program, the curriculum for this degree is offered cooperatively by the departments of Ecology, Evolution, and Marine Biology; Chemistry; Geography; and Earth Sciences. The major is divided into two sections; the preparation for the major and the upper-division requirements. Lower-division courses concentrate on the physical and natural sciences and introduction to policy and economics. In the upper division, students complete a core group of hydrology courses and then select one of the following three emphases to complement their hydrology major: Biology and Ecology, Physical and Chemical, or Policy.

Transfer students should complete the preparatory course work for their intended degree in their freshman and sophomore years in order to make normal progress toward completion of the major. Although Environmental Studies does not discourage students from completing IGETC prior to transfer, those pursuing the BS degree might find it beneficial to concentrate on the preparatory chemistry, mathematics, and biology courses. The upper-division course work includes a combination of required courses and electives (see the *UCSB General Catalog* for details). Students are free to select their elective course work to emphasize their particular area of interest within environmental studies.

Special Opportunities

Students in Hydrologic Science and Policy have the opportunity to conduct academic internships. Through the Environmental Studies Internship Program, a student majoring in Hydrologic Sciences can obtain valuable hands-on experience while

earning academic credit towards major requirements. Students majoring in Hydrologic Sciences and Policy may also conduct independent research or serve as a research assistant with faculty members (Environmental Studies 199 or 199RA). In addition, the Environmental Studies Program offers a senior honors program for all qualified Hydrologic Sciences majors in which a student can receive a “Distinction in the Major” award upon successful completion of the program. The Hydrologic Sciences Program is also affiliated with numerous study abroad programs and schools, which provide students the opportunity to receive academic credit while conducting hydrological research around the world.

Careers in Hydrologic Studies

Students who graduate with a B.S. degree in Hydrologic Sciences and Policy are prepared to do graduate work in such fields as environmental science, biology, ecology, chemistry, geography, geology, environmental engineering, and a variety of specialty programs in hydrology.

Hydrologic Sciences and Policy students are also often qualified for positions in environmental consulting and planning, water quality analysis, aquatic resource management, waste water treatment, as well as a variety of jobs with state and federal agencies. Students who are interested in pursuing a career in the hydrologic sciences are encouraged to visit the Environmental Studies peer advisor’s office for additional information pertaining to jobs and careers in the hydrology field.

For more information on UCSB’s Hydrologic Sciences and Policy major, please call or write to:

Environmental Studies Program
4312 Bren Hall
University of California, Santa Barbara
Santa Barbara, CA 93106-4160
805/893-3185 or 893-2968
e-mail: esprogram@es.ucsb.edu
website: www.es.ucsb.edu