

AQUATIC BIOLOGY

PREPARATION FOR THE MAJOR

High School Preparation

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

**One year of biology,
One year of chemistry,
Mathematics through
trigonometry,
One year of physics.**

Transfer Preparation

The following courses are required prior to transfer, with a minimum GPA of 2.7 or higher:

One year sequence of general chemistry with laboratory, and one sequence (2-3 terms) of general biology.

To make normal progress in the major, it is also strongly recommended that students complete all of the following courses prior to transfer:

Two terms of calculus and one term of statistics:

Two terms of organic chemistry with laboratory,

One-year sequence of physics with laboratory.

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.

UCSB is one of the few universities in the country to offer an undergraduate major in Aquatic Biology. This major provides coursework, laboratory and field experiences in both marine and freshwater subdisciplines. UCSB is ideally located for the study of fresh and salt water environments and inhabitants. The campus' outdoor "laboratories" include the Pacific Ocean and four of the University of California's protected natural land and water reserves. These include the Carpinteria salt marsh, the West Campus sand dunes, Santa Cruz island in the Santa Barbara channel, and the Sierra Nevada Aquatic Research Laboratory in the eastern Sierra Nevada mountain range.

The campus' Marine Science Institute (MSI) involves faculty and graduate students from six academic disciplines in worldwide research in areas such as global environmental change, biological oceanography, subtidal and intertidal ecology and polar, tropical, and temperate ecosystems. MSI's core activity is investigating and managing the resources of the California coast.

The Department

The Department of Ecology, Evolution, and Marine Biology, which offers the Aquatic Biology major, is among the largest on campus. In addition to the Bachelor of Science (BS) degree in aquatic biology, the department offers a major in Biological Sciences and majors in three other subdisciplines of biology: Ecology and Evolution, Physiology, and Zoology.

The diverse 35-member faculty offers more than 80 upper-division (junior and senior year) courses. These courses include laboratory and field studies, lectures and seminars, and independent studies and group projects. Seventeen of the faculty are studying some aspect of the biology of marine or freshwater organisms. These faculty members conduct extensive research projects in which undergraduate participation is welcomed and encouraged. Currently, faculty and student research areas include coral reef ecology, symbiosis, kelp bed ecology, the biology of deep sea organisms, marine bioluminescence, biology of marine plankton, behavior of marine organisms, marine microbiology, intertidal ecology, marine natural products chemistry, freshwater biology, stream ecology, and acid rain.

The research opportunities, dynamic teaching faculty, and availability of on- and off-campus resources make UCSB an exceptional place for the study of marine and freshwater biology.

The Major

Students interested in marine biology, marine and freshwater ecology, population studies of aquatic organisms, biological oceanography, and limnology (the study of fresh waters) find aquatic biology an exciting opportunity to learn about these broad subjects and the special techniques used to study them.

All students interested in any area of the biological sciences, including aquatic biology, will enter UCSB as pre-biological sciences majors. Pre-biology majors share a common core curriculum, typically completed during the freshman and sophomore years, consisting of introductory biology with laboratory, general chemistry with laboratory,

mathematics, physics with laboratory and, for many of the majors, organic chemistry with laboratory. After completing a subset of this key preparatory coursework, students may petition to declare the full major.

The BS in Aquatic Biology requires completion of upper-division courses that include at least one course each in genetics, ecology, physiology, and evolution. Students complete their upper-division aquatic biology requirements by taking courses in ecological processes in aquatic systems and aquatic communities, and by selecting elective courses in: marine botany, applied marine ecology, marine microbiology, coral reef and deep sea biology; biology of fishes; mariculture; invertebrate zoology; limnology; and stream biology.

Careers in Aquatic Biology

UCSB's Aquatic Biology majors, because their education is sound, comprehensive, and unique, are in demand in both government and private industry. Aquatic Biology majors secure positions working on biological surveys and environmental impact reports. They pursue careers in the conservation of marine and other resources, gain employment with fisheries, and undertake work in areas such as aquaculture and water quality control. In addition to immediate career entry, Aquatic Biology majors are prepared for graduate study in advanced and specialized fields.

Students interested in teaching biological sciences and conducting research at the college or university level should plan to complete the Ph.D. degree. Teaching at the junior or senior high school (secondary) level requires the California Single Subject Teaching Credential. Students considering this last option should discuss their plans with the credential advisor in UCSB's Graduate School of Education early in their academic careers.

For more information about UCSB's Aquatic Biology major, please call or write to the department's undergraduate advisor or visit our web pages at:

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