



Bachelor of Arts Earth Science

College of Natural Sciences and Mathematics

Why major in Earth science?

With an increasing human population and the accompanying strain on Earth's oceans, atmosphere, biosphere, natural resources, and climate, it has become critical to be able to integrate knowledge of Earth processes into actions that promote a sustainable planet. Meeting this need requires (1) a workforce that is better educated in how Earth works, and (2) well-prepared teachers that can educate that workforce. The Bachelor of Arts in Earth Science is designed to meet these two requirements.

We like to think of the B.A. in Earth Science as a "liberal science" degree, similar in breadth to a liberal studies degree but providing a foundation in the sciences. Flexibility is the hallmark of this degree – with the help of academic advisers, students choose coursework that is appropriate to their professional direction, but all will have a basic background rooted in a core that includes Earth science and related scientific fields. Students interested in K-12 teaching careers will complete the core of Earth science and related fields courses plus additional electives that will prepare them for a credential in Foundational Level General Science (FLGS) at the K-8 level and credentialing in introductory general, life and physical science at the secondary school level.

Not interested in a teaching career? Are you instead interested in a career where a well-developed and broad understanding of science is beneficial and profitable, such as resource management, law, policy making/politics, journalism or sustainable business? Then this degree is for you! As resources become more impacted and environmental/sustainability issues press harder into everyday life, there will be a great need for private and public sector workers with sufficient science background to deal with the problems. The flexibility of this degree allows you to select a course pathway that allows you to succeed in your chosen career path.



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What's so special at CSUF?

The B.A. in Earth Science at CSUF is a unique degree in Orange County. No other university in the region offers such a flexible and broad-based science degree. Additionally, this degree is offered through the Department of Geological Sciences, where majors' classes tend to be small and intimate and where students develop long-lasting relationships through the active student-run geology club. Most courses have field trips, which combined with a hands-on curriculum and potential to work closely with faculty on research projects, provide a very rich learning environment that will provide a strong and broad science background required for K-12 credentialing programs, as well as private and public sector jobs.

What career opportunities are available?

Depending on the track you take through the major electives, you will be well prepared to pursue careers in K-12 science teaching and/or private or public sector jobs where scientific breadth is paramount. Students interested in K-12 teaching will be prepared to pass subtests of the California Science Examination for Teachers (CSET) for credentialing in subject matter competency for geological science or the credential in Foundational Level General Science. In order to obtain the new Foundational-Level General Science Credential, Earth science B.A. students will also be prepared to pass the two California Subject Exams for Teachers (CSET exams 118 and 119).

The breadth of the degree will also prepare graduates for careers in environmental law, sustainable business, environmental journalism, resource management, policy and politics. You cannot read a newspaper or major news outlet web link these days without seeing an article on Earth resources, sustainability, environment or climate change. Who are the future experts that will assess the new findings, report them to the public, make business decisions or policy/law about them? The elective choices enable students to take numerous courses in journalism, business and social sciences.

What are the program requirements?

The Bachelor of Arts in Earth science consists of 32 units in Earth science courses (offered by the Geological Sciences and Geography departments) plus 24 units in related science fields, such as chemistry, physics, biology, math and geography. An additional 22 units are "undesignated electives," which are selected to meet the particular needs of each student. To qualify for the B.A. in Earth science degree, students must have a "C" (2.0) or better in all Earth science courses and a 2.0 average in the required related science courses.

Required Earth Science Core Courses (20 units)

Geological Sciences 101 Physical Geology (3)

OR Geological Sciences 110T Topics in Earth Science (4)

OR Geological Sciences 140 Earth's Atmosphere and Oceans (3)

OR Geological Sciences 102 Earth and Astronomical Science for Future Elementary Teachers (3)

Geological Sciences 101L Physical Geology Lab (1)
Geological Sciences 201 Earth History (3)
Geological Sciences 333 General Oceanography (3)
Geological Sciences 335 Hydrology and Surface Processes (3)
Geological Sciences 380 Geologic Field Techniques (3)
Geological Sciences 420 Earth Science for Science Teachers (4)
OR Geological Sciences 470 Environmental Geology and Planning (4)

Earth Science Elective Courses (12-15 units)

These units consist of a combination of geology and geography courses, but at least 6 units must be offered by the Geological Sciences Department and should be selected in consultation with a Department of Geological Sciences academic adviser. See the course catalog for acceptable Earth science elective courses; note that additional courses that are not listed in the catalog may be approved by the Geological Sciences Department undergraduate adviser.

Related Fields Core Courses (16-22 units)

Students are required to take 15 units in related fields core that includes one class each in biology, chemistry, physics, mathematics and geography. In each of these disciplines, there are at least two acceptable courses to choose from.

Elective Related Field Courses (8 units)

Students take an additional 9 units of elective related fields courses that are tailored to the students needs.

Undesignated Elective Courses (22 units)

The collection of elective courses is designed to allow flexibility in a student's chosen field. For example, a student interested in secondary education teaching would select a series of secondary education courses and courses in related fields that would prepare them to pass the required state science exams. A student interested in environmental policy or resource management would take a set of courses in biology, geography, business management, etc. that best fits the student's career objectives. A Geological Sciences Department academic adviser must approve undesignated electives.

Who advises me?

Because of the incredible flexibility in course options for the Earth science degree, each student will work closely with a Geological Sciences Department adviser to tailor a study plan. This is particularly necessary for students in the K-12 science teacher track because several course options are for teacher-track students. Advising is an on-going process, and each student will be required to come in for advisement each semester. We are sensitive to the special needs of some students and can often help with intern positions, career-related work and financial aid.

How can I get additional information?

To learn more about this exciting program, contact the Department of Geological Sciences at 657-278-3882. The staff can put you in contact with our undergraduate adviser, who will be eager to start advising you. You can also learn more about our department and the degree at our website: geology.fullerton.edu/. Or, just stop by and see us on campus in McCarthy Hall, room MH-254.

