

Geology

CSUB's Geology program offers a full range of lectures, laboratory, and field courses which take advantage of the university's proximity to water-use centers, oil fields, the Sierra Nevada, Pacific Ocean, Mojave Desert, and the Great Basin.

The Geology program stresses understanding the physical environment in terms of its relationship to utilization and quality of groundwater resources, exploration and development of petroleum and mineral resources, and the evolution of the earth's crust and biosphere through time.

Both undergraduate and graduate students are given the opportunity to engage in research projects that often result in presentations at international, national, and regional meetings or publication in leading academic and industry journals. These projects, and the regular curriculum, provide Geology students with all of the necessary skills and knowledge to succeed in the wide range of industry jobs available and/or studies towards higher degrees.

Financial aid is available for Geology students through a number of channels not accessible to other majors. The C. E. Strange Scholarship provides awards for Geology majors totaling several thousand dollars each year.

Additionally, most of our students find part-time jobs and internships with environmental firms, oil companies, and government agencies. Government and industry contracts awarded to our faculty also provide part-time jobs for Geology students.



Training and Career Outlook

The study of the earth and its resources is of such societal importance that the job outlook for Geology students is quite stable as compared to other fields. CSUB Geology graduates are employed in a wide variety of well-paying industry, government, and educational jobs such as hydrologists, environmental geologists, and college teachers. There are many opportunities for Geology graduates to teach science at the high school level, and the Geology program provides excellent preparation through a well-rounded education that includes technical writing, physics, chemistry, mathematics, computer science, and/or biology. This diverse background also prepares our students for jobs in non-geologic fields such as air quality scientists, computer software specialists, planners for local government, resource managers, and general business.

Besides the favorable job outlook, Geology at CSUB provides ample opportunity to enjoy the outdoors. CSUB students take several field trips as part of the normal curriculum and as part of extracurricular activities through the Geology Club. Field trips take place routinely to Morro Bay, Yosemite, Death Valley, Mammoth, and the Sierra Nevada.

"All the basics in Geology, I use them everyday. In general, there's a great group of both students and instructors at CSUB. The campus does carry a lot of clout, and quite a few grads have gotten into Oxy through the internship program."

*Inge McDonald, Geologist
Occidental International
Exploration & Production*

CSUB Alumni Careers

*Barbara Houghton, Owner
Houghton HydroGeo-Logic*

*Dawn Hanson, Geologist
Aera Energy LLC*

*John Acord, Geologist
Occidental Elk Hills*

*Marty Smithey, Senior Geologist
Maxus Equador, Inc.*

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Geology / Requirements for the Major

Sample program for students who want to graduate with a degree in Geology.

Requirements for the Bachelor of Arts in Geology

1. All of the following courses in Geology:
 - a. GEOL 201, 303, 306, 307, 309, 395, and 490
 - b. One additional five-unit course in Geology (GEOL 100 may not be used for this requirement).
2. A minimum of six courses (30 units) in cognate areas:
 - a. MATH 191 and either MATH 192 or MATH 140
 - b. CHEM 211, 212
 - c. PHYS 201, 202
3. A minor (20 units) approved by your advisor or Department Chair. Courses required as cognates for the major cannot count toward the minor.

Requirements for the Bachelor of Science in Geology

1. All of the following courses in Geology:
 - a. GEOL 201, 303, 306, 307, 309, 310 or 325, 480, 490, 495
 - b. All of the following courses in one of the two options listed below:
 - 1) **Environmental**
GEOL 205 or 370B, 320, 475.
 - 2) **Traditional**
GEOL 305 or 370B, 308, 460 or 477 or 577.
2. A minimum of eight courses in cognate areas:
 - a. CHEM 211, 212
 - b. PHYS 201 and 202, or 221 and 222
 - c. MATH 201, 202, 222, and 140.
CMPS 212

3. The following courses are strongly recommended for students planning graduate studies:

MATH 140, 201, 202
CHEM 213
PHYS 221, 222, 223
BIOL 203, 210
COMM 304
CMPS 212

Requirements for the Minor in Geology

A minor in Geology is available, consisting of 20 units, at least 10 of which must be in upper division courses that count toward the major. However, only one of the following courses may be counted toward the minor in Geology: GEOL 100 or GEOL 201.

Science Teacher Preparation Program

CSUB offers a Bachelor of Arts degree in Natural Science. Completion of the following course work satisfies the requirements for a Secondary Teaching Credential in Science and leads to a Natural Science B.A. with a Primary Concentration (major) in Geology and a secondary concentration (minor) in either Physics, Biology, or Chemistry.

1. **Primary Concentration in Geology:**
GEOL 201, 205, 303, 306, 307, 309, 320 and 490.
2. **Secondary Concentration and Breadth** (Select **one** of the following sets of courses):

- a. **Biology:** BIOL 210, 211, 212 plus two additional 300 or 400 level Biology courses acceptable for the major; CHEM 211 and 212; PHYS 110, 201 or 221, 202 or 222, and 203 or 223.

- b. **Chemistry:** CHEM 211, 212, 213 plus two additional 300 or 400 level Chemistry courses acceptable for the major; BIOL 210, 211 and 212; PHYS 110, 201 or 221, 202 or 222, and 203 or 223.
- c. **Physics:** PHYS 110, 221, 222, 223, 307, and 324; BIOL 210, 211 and 212; CHEM 211 and 212.

Except for Senior Seminar (490), all courses must be completed with their respective laboratory components.

Faculty

D. Baron, Ph.D.

Oregon Graduate Institute of Science & Technology

R. J. Brady, Ph.D.

California Institute of Technology

J. M. Gillespie, Ph.D.

University of Wyoming

R. A. Horton, Jr., Ph.D.

Colorado School of Mines

S. W. Mitchell, Ph.D.

George Washington University

R. M. Negrini, Ph.D.

University of California, Davis

Scholarships

- Arts and Sciences Merit Award Scholarship
- American Petroleum Institute

Clubs

- American Association of Petroleum Geologists, Student Chapter

Visit our home page on the World Wide Web for the most up-to-date information on CSUB's Geology Department:

<http://www.cs.csuak.edu/Geology/>