

Master of Science in Geology

Career Options

- Petroleum Geologist
- Hydrologist
- Geophysicist
- Geochemist
- Teacher
- Government Geologist

Graduate Coordinator

Dr. Dirk Baron
Department of Physics & Geology
Science Building II, Room 333
Phone: 661-664-3044
FAX: 661-664-2040
E-Mail: dbaron@csubak.edu

For the most up-to-date
information on CSUB's
Geology program, visit our
Home Page on the World
Wide Web:

[http://www.cs.csubak.edu/
Geology/](http://www.cs.csubak.edu/Geology/)



General Information

The Department of Geology offers a comprehensive graduate program leading to the Master of Science degree. The program is intended to prepare students for professional positions in the petroleum industry, for positions with government agencies, and for graduate study at the doctorate level.

Faculty research interests, the proximity of the campus to the petroleum industry, and easy access to a diverse assortment of geological environments permit the student to select from a broad spectrum of research topics including petroleum geology, stratigraphy, carbonate and clastic sedimentary petrology, hydrogeology, paleontology, geochemistry, structural geology, geophysics, and tectonics. Thesis projects involving the petroleum industry and local government offices are available.

Requirements for the M.S. in Geology

A minimum of 45 units of course work is required for the M.S. in Geology. The following courses are required of all students:

1. GEOL 606 Advanced Sedimentary Petrology **or**
GEOL 610 Low Temperature Geochemistry
2. GEOL 604 Advanced Sedimentation **or**
GEOL 609 Advanced Stratigraphy
3. GEOL 690 Thesis Research, 5-9 credit hours

For students choosing the **Petroleum Geology Option**, the following courses are required:

1. GEOL 460 Petroleum Geology
2. GEOL 570 Petroleum Engineering

For students choosing the **Hydrogeology Concentration**, the following courses are required:

1. GEOL 475 Hydrogeology
2. GEOL 555 Contaminant Hydrogeology

An approved* course of study consists of a minimum of 16 units (5 courses; all courses are 5 units unless noted):

1. GEOL 420 Environmental Geochemistry
2. GEOL 460 Petroleum Geology
3. GEOL 475 Hydrogeology
4. GEOL 477 Special Topics in Geology (variable credit)
5. GEOL 525 Applied Hydrogeochemistry
6. GEOL 555 Contaminant Hydrogeology
7. GEOL 570 Oil Field Development
8. GEOL 577 Advanced Topics in Geology (variable credit)
9. GEOL 580 Advanced Research Participation (variable credit)
10. GEOL 604 Advanced Sedimentation
11. GEOL 605 Advanced Micropaleontology
12. GEOL 606 Advanced Sedimentary Petrology
13. GEOL 607 Advanced Structural Geology
14. GEOL 609 Advanced Stratigraphy
15. GEOL 610 Sedimentary Geochemistry
16. GEOL 625 Subsurface Exploration Methods
17. GEOL 650 Groundwater Flow Modeling
18. Appropriate graduate-level class in related fields.

*Approval of Graduate Coordinator, Thesis Advisor and Committee

Faculty

D. Baran, Ph.D.

Oregon Graduate Institute of
Science & Technology (1996)
Aqueous Geochemistry,
Hydrogeology

R. Crewdson, Ph.D.

Colorado School of Mines
(1976)
Geophysics, Geothermal
Resources, Hydrogeology

J. M. Gillespie, Ph.D.

University of Wyoming (1992)
Petroleum Geology,
Hydrogeology, Basin Analysis

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

Colorado School of Mines (1985)
Sedimentary Petrology,
Diagenesis, Geochemistry

S. W. Mitchell, Ph.D.

George Washington University
(1980)
Micropaleontology, Stratigraphy,
Geoarchaeology

R. M. Negrini, Ph.D.

University of California, Davis
(1986)
Environmental Geophysics,
Paleoclimatology

P Wigand, Ph.D.

Washington State University
(1985)
Palaeoecology, Geoarchaeology

Certificate in Hydrogeology Program

Applicants should have a B.A. or B.S. in Geology or a directly related field. Applicants in related fields should have completed course work in Physical Geology, Stratigraphy and Sedimentation, Structural Geology, and one year each of college chemistry, physics, and calculus. Some of the courses in the certificate program may have additional prerequisites. Applicants must be accepted as post-baccalaureate students at CSUB. The certificate will require a total of at least 25 units of credit, 15 units of which must be completed at the CSUB campus, and shall be composed of the following required and elective courses.

Courses required for a ***Certificate in Hydrogeology*** are:

1. GEOL 475 Hydrogeology (5)
2. GEOL 525 Applied Hydrogeochemistry (5)
3. GEOL 555 Contaminant Hydrogeology (5)

A minimum of two courses (10 units) are to be selected from the following:

1. GEOL 420 Environmental Geochemistry (5)
2. GEOL 477 Special Topics in Geology (when pertinent) (variable credit)
3. GEOL 580 Advanced Research Participation (variable credit)
4. GEOL 625 Subsurface Exploration Methods (5)
5. GEOL 650 Groundwater Flow Modeling (5)
6. GEOL 577/677 Advanced Topics in Geology (when pertinent) (variable credit)