**Department of Geological Sciences**

**School of Natural Sciences, Mathematics, and Engineering**

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**Faculty:** G. Andrews, D. Baron, J. Gillespie, R. Horton, C. Krugh, R. Negrini

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**Program Description**

Geology is the study of the Earth and our neighboring planets in space, their composition, processes, and history. The degrees offered are the Bachelor of Arts, the Bachelor of Science and the Master of Science in Geological Sciences. The curriculum includes basic courses in geology and other cognate subjects and provides for independent research, field application, and Environmental Studies, when desired.

The curriculum and courses offered in Geological Sciences stress the physical framework of the environment and its relationships to organisms and to man. The college is located in an excellent geologic area with easy access to deserts, several mountain ranges, oil fields, agricultural areas, and the Pacific Coast.

At the completion of their Geological Sciences degree programs students will have basic knowledge and understanding of the content of modern geology, will have acquired knowledge and demonstrated skills to collect and analyze Earth’s minerals and rocks, and will understand the philosophical, mathematical and physical science foundations of geology. The ten detailed student learning objectives that support these broad goals can be found at www.csub.edu/geology/SLO\_Geology.pdf.

Graduates with degrees in Geological Sciences have excellent employment opportunities both locally and elsewhere in petroleum and minerals exploration, water resources, land use, and waste disposal management. The degree program also provides a strong foundation for secondary school science teaching or graduate study in geology. Students planning on attending graduate school are advised to pursue the BS degree as the course work for this degree, particularly the cognate courses, generally represents the minimum requirements for acceptance into a graduate program, including the Master of Science program in Geological Sciences at CSUB. Visit our website at http://www.csub.edu/geology.

The Department of Geological Sciences offers two tracks leading to a major in Geological Sciences:

 Bachelor of Science in Geological Sciences

 Bachelor of Arts in Geological Sciences and one track leading to a minor in Geological Sciences

**Requirements for the Bachelor of Science Degree in Geological Sciences**

**Total Units Required to Graduate 180 units**

**Major Requirements 96-98 units**

Geology Courses 61

Cognates 35-37

**Minor Requirement 0 units**

**Other University Requirements 72-77 units**

CSUB 101 2

American Institutions 5

Area A 15

Area B 5\*

Area C 15

Area D 15

Theme 1 0\*

Theme 2 5

Theme 3 5

GRE 5

GWAR (Exam) or Class 0-5

A minor is not required 0

\*everything but Area B2 satisfied in major and cognates

**Additional Units 5-12 units**

**Requirements for the B.S. Major in Geological Sciences** (96-98 units)

1. **Lower Division** (10 units):

a. GEOL 201, 204 [Satisfies Areas B1 and B3]

2. **Upper Division** (51 units):

a. GEOL 303, 306, 307, 309, 310 or 325 or 420, 490, and 4951 (36 units)

b. Three additional courses selected from the following options. At least one of the courses must be at the 400 or 500 level: GEOL 205, 305, 308, 310, 325, 420, 450, 460, 475, 477, 480 (15 units). Graduate level classes may be substituted with advisor approval.

3. **Cognates** (35-37 units):

a. CHEM 211, 211L, 212, 212L (10 units)

b. MATH 140, MATH 201 and 202 or MATH 211 and 212 (15 units) [Satisfies Area B4]

c. PHYS 201, 202 or PHYS 221, 222 (10-12 units)

*The minimum GPA for these 96-98 units is 2.0*

1GEOL 495 is generally taken during the Summer following the senior year.

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

1. CHEM 213, 213L

2. PHYS 223

3. BIOL 103 [satisfies Area B2] and 201

**Requirements for the Bachelor of Arts Degree in Geological Sciences**

**Total Units Required to Graduate 180 units**

**Major Requirements 70-72 units**

Geology Courses 40

Cognates 30-32

**Minor Requirement 20** **units**

Courses required as cognates for the major cannot count toward the minor. Minor must be approved by your major advisor or Department Chair.

**Other University Requirements 72-77 units**

CSUB 101 2

American Institutions 5

Area A 15

Area B 5\*

Area C 15

Area D 15

Theme 1 0\*

Theme 2 5

Theme 3 5

GRE 5

GWAR (Exam) or Class 0-5

\*everything but Area B2 satisfied in major and cognates

**Additional Units 11-18 units**

**Requirements for the B.A. Major in Geological Sciences** (70-72 units)

1. **Lower Division** (10 units):

a. GEOL 201, 204 [Satisfies Areas B1 and B3]

2. **Upper Division** (30 units):

a. GEOL 303, 306, 307, 309, and 490 (25 units)

b. One additional course in Geology, at the 200-level or higher and excludes Theme 1 and liberal studies courses (5 units)

3. **Cognates** (30-32 units):

a. MATH 191 and either 140, 192, or 211 (10 units) [Satisfies Area B4]

b. CHEM 211, 211L, 212, 212L (10 units)

c. PHYS 201, 202 or 221, 222 (10-12 units)

*The minimum GPA for these 70-72 units is 2.0*

**Requirements for the Minor in Geological Sciences**

A minor in Geological Sciences 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 Geological Sciences: GEOL 100 or 201.

**Requirements for Teaching Credential: Science Teacher Preparation Program Leading to a Degree in Natural Sciences, Primary Concentration in Geological Sciences**

The California Commission on Teacher Credentialing (CCTC) has authorized CSUB to offer a single subject matter preparation program in Natural Sciences leading to a Bachelor of Arts degree. This course work satisfies the subject matter requirements for a “Secondary Teaching Credential in Science.” The program consists of three components: I. Primary Concentration (major), II. Secondary Concentration (minor) and III. Breadth (cognates). Program completion leads to a BA degree in Natural Sciences with a major in the area of primary concentration and a minor in the secondary concentration. Additional information may be obtained from the Geological Sciences Department office (661-654-3027). For a detailed description of the course requirements please turn to the Natural Sciences section in this catalog.