

GEOSCIENCES BS

More Information

Advising Requirement

Advising is mandatory for this program. Consult your department advisor or program coordinator for information.

E-advising Tools

Students are encouraged to use the interactive e-advising tools that have been designed to help them graduate within four years. These tools can be accessed through the Student Center.

The Bachelor of Science in Geosciences is designed for students who plan to become high school science teachers. It provides students with the required subject matter competency to enter a single subject credential program in science with a concentration in geoscience.

Grading Requirement

All courses taken to fulfill program course requirements must be taken for a letter grade except those courses specified by the department as credit/no credit grading only.

Course Requirements for the Major: 58-66 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree. Courses in this program may complete more than one graduation requirement.

Course	Title	Units
Major Core		
<i>Lower Division</i>		
CHEM 111	General Chemistry I	4
CHEM 112	General Chemistry II	4
ERTH 102	Physical Geology	3
ERTH 110	Oceanography	3
ERTH 203	Principles of Historical Geology	3
Select eight units from the following:		8
PHYS 202A & PHYS 202B	General Physics I and General Physics II	
PHYS 204A	Physics for Students of Science and Engineering: Mechanics ¹	
PHYS 204B	Physics for Students of Science and Engineering: Electricity and Magnetism ¹	
PHYS 204C	Physics for Students of Science and Engineering: Heat, Wave Motion, Sound, Light, and Modern Topics ¹	
Select one of the following:		4
MATH 109	Survey of Calculus	
MATH 120	Analytic Geometry and Calculus	
Select one of the following:		3-4
MATH 105	Introduction to Statistics	
MATH 121	Analytic Geometry and Calculus	
<i>Upper Division</i>		
ERTH 300W	Earth System Science (W)	3
ERTH 306	Mineralogy and Lithology	4

ERTH 321	Introduction to Meteorology	3
ERTH 341	Teaching Practicum in Geological and Environmental Sciences	3

Major Option Courses

Select one of the following options: 13-20

Physical Science Education (p. 1)

Science Education with a Concentration in Geosciences (p. 1)

Total Units 58-66

¹ Two (PHYS 204A, PHYS 204B or PHYS 204C) courses may be substituted for PHYS 202A and PHYS 202B.

Major Option Course Requirements

Students must select one of the following options for completion of the major course requirements.

The Option in Physical Science Education: 13-14 units

This option provides students with a good foundation in each of the physical sciences so that they are prepared to pass the California Subject Examinations for Teachers (CSET) in Earth Science. Students who complete the program are also prepared to pass the General Science CSET, which will allow them to teach general science at the middle school level.

Course	Title	Units
Lower Division		
CHEM 270	Organic Chemistry I	4
Select one of the following:		3-4
BIOL 162	Principles of Cellular and Molecular Biology	
SCED/BIOL 102	Introduction to Living Systems	
Upper Division		
BIOL 302W	Evolution (W)	3
PHYS 307	Physics of Music	3
Total Units		13-14

The Option in Science Education with a Concentration in Geosciences: 20 units

This option is an approved Subject Matter Preparation Program for Science with a Concentration in Geoscience. Thus it fulfills one of the requirements for admission into a single subject teaching credential program. See the Single Subject Matter Preparation Program in Science (<https://catalog.csuchico.edu/colleges-departments/college-natural-sciences/earth-environmental-sciences/science-single-subject-matter-preparation-program/>) for more information.

Course	Title	Units
BIOL 161	Principles of Ecological, Evolutionary, and Organismal Biology	4
BIOL 162	Principles of Cellular and Molecular Biology	4
ERTH 303	Invertebrate Paleontology	3
ERTH 307	Stratigraphy	3
ERTH 360	Field Methods	2
ERTH 361W	Preparation of the Geological Report (W)	1

ERTH 489T	Internship in Geoscience Teaching	3
Total Units		20

Electives Requirement

To complete the total units required for the bachelor's degree, select additional elective courses from the total University offerings. You should consult with an advisor regarding the selection of courses which will provide breadth to your University experience and possibly apply to a supportive second major or minor.

Honors in the Major

Honors in the Major is a program of independent work in your major. It requires 6 units of honors course work completed over two semesters.

The Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original performance or research project. This year-long collaboration allows you to work in your field at a professional level and culminates in a public presentation of your work. Students sometimes take their projects beyond the University for submission in professional journals, presentation at conferences, or academic competition. Such experience is valuable for graduate school and professional life. Your honors work will be recognized at your graduation, on your permanent transcripts, and on your diploma. It is often accompanied by letters of commendation from your mentor in the department or the department chair.

Some common features of Honors in the Major program are:

- You must take 6 units of Honors in the Major course work. All 6 units are honors classes (marked by a suffix of H), and at least 3 of these units are independent study (399H, 499H, 599H) as specified by your department. You must complete each class with a minimum grade of B.
- You must have completed 9 units of upper-division course work or 21 overall units in your major before you can be admitted to Honors in the Major. Check the requirements for your major carefully, as there may be specific courses that must be included in these units.
- Your cumulative GPA should be at least 3.5 or within the top 5% of majors in your department.
- Your GPA in your major should be at least 3.5 or within the top 5% of majors in your department.
- Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the 6 units of course work over the two semesters of their senior year.
- Your honors work culminates with a public presentation of your honors project.

While Honors in the Major is part of the Honors Program, each department administers its own program. Please contact your major department or major advisor to apply.

See Bachelor's Degree Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/bachelors-degree-requirements/>) for complete details on general degree requirements. A minimum of 39 units, including those required for the major, must be upper division.

General Education Requirements: 48 units

See General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/>) and

the Class Schedule (<http://www.csuchico.edu/schedule/>) for the most current information on General Education Requirements and course offerings.

This major has approved GE modification(s). See below for information on how to apply these modification(s).

- ERTH 300W is an approved major course substitution for Upper Division Scientific Inquiry and Quantitative Reasoning (UD-B).

Diversity Course Requirements: 6 units

You must complete a minimum of two courses that focus primarily on cultural diversity. At least one course must be in U.S. Diversity (USD) and at least one in Global Cultures (GC). See Diversity Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/diversity-requirements/>) for a full list of courses. Most courses taken to satisfy these requirements may also apply to General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/>).

Upper-Division Writing Requirement

Writing Across the Curriculum (EM 17-009 (<http://www.csuchico.edu/prs/EMs/2017/17-009.shtml/>)) is a graduation requirement and may be demonstrated through satisfactory completion of four Writing (W) courses, two of which are designated by the major department. See Mathematics/Quantitative Reasoning and Writing Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/mathematicsquantitative-reasoning-writing-requirements/>) for more details on the four courses. The first of the major designated Writing (W) courses is listed below.

- Any upper-division Writing (W) course.

The second major-designated Writing course is the Graduation Writing Assessment Requirement (GW) (EO 665 (<https://calstate.policystat.com/policy/9585618/latest/>)). Students must earn a C- or higher to receive GW credit. The GE Written Communication (A2) (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/#A2>) requirement must be completed before a student is permitted to register for a GW course.