

NATURAL SCIENCES BS

The Bachelor of Science in Natural Sciences, Option in Science Education provides excellent preparation for students interested in becoming a middle school or introductory high school science teacher and fulfills one of the requirements for admission into a single subject teaching credential program. This degree is also designed for future science educators pursuing careers in informal science settings such as museums, nature centers, state parks, or national forests. There are opportunities for internships and volunteer activities providing practical training and experience.

The program offers:

- Low teacher-to-student ratio.
- Courses designed specifically for future science teachers and informal science educators.
- Collaborative learning spaces located in the new state-of-the-art science building.
- Grants and scholarships exclusively for future science teachers.
- Internships and volunteer activities that provide practical training and experience.
- Opportunities for early teaching experiences at the Gateway Science Museum and local middle schools.
- A student club and professional network to support future science educators.

Advising Requirement

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

E-advising Tools

Use the interactive e-advising tools designed to help students graduate within four years. These tools can be accessed through the Student Center in the Portal (<https://portal.csuchico.edu>).

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: 70-73 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
Lower Division		
BIOL 162	Principles of Cellular and Molecular Biology	4
EDTE 255	Introduction to Democratic Perspectives in K-12 Teaching	3
MATH 118	Trigonometry	3
PHYS 202A	General Physics I	4
SCED 141	Concepts in the Physical Sciences	3
SCED 142	Concepts in Life Science	3
Select one of the following:		4

CHEM 107	General Chemistry for Applied Sciences	
CHEM 111	General Chemistry I	
Select two of the following:		6
ERTH 102	Physical Geology	
ERTH 170	Atmospheric Science	
ERTH 265	Soils and Surficial Processes	
Upper Division		
EDTE 302	Access and Equity in Education	3
EDTE 530	Fundamentals of Teaching Practice for Secondary Teachers	3
ENGL 471	Intensive Theory and Practice of Second Language Acquisition	3
SCED 321W	Scientific Inquiry (W)	3
SCED 342	Concepts in Earth and Space Science	3
SCED 343	Concepts in Environmental Sciences	3
Select one of the following:		3
BIOL 302W	Evolution (W)	
BIOL 318	Biology of Childhood	
BIOL 334	Conservation Ecology	
Select one of the following:		3
ERTH 300W	Earth System Science (W)	
ERTH 330W	Environmental Science (W)	
Major Option		
Science Education (p. 1)		16-19
Total Units		70-73

Major Option Course Requirements

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

Science Education Option: 16-19 units

The option in science education is designed for students preparing to be middle school science teachers, or seeking a career as an informal science educator in a museum or outdoor setting such as state parks, environmental camps, or nature centers. Successful completion of the program fulfills one of the requirements for admission into a single subject teaching credential program.

Course	Title	Units
SCED 140	Teaching Science in a Museum Setting	1
SCED 490	Natural Sciences Seminar	2
SCED 495	Science Education Capstone	3
Select one of the following:		3-4
ERTH 355	Natural Disasters	
PHYS 202B	General Physics II	
Select one of the following:		3-4
BIOL 161	Principles of Ecological, Evolutionary, and Organismal Biology	
ERTH 370W	Energy in the Human Environment (W)	
Select one of the following:		1
BIOL 489	Internship in Biology	
SCED 143	Explore Teaching Science in Outdoor Settings	
Select one of the following:		3-4
BIOL 103	Human Anatomy	

CHEM 112	General Chemistry II
ERTH 303	Invertebrate Paleontology

Total Units **16-19**

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.

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: 43 units

See General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/#gerequirementstext>) and the Class Schedule (<http://www.csuchico.edu/schedule/>) for the most current information on General Education requirements and course offerings.

American Institutions Course Requirements: 6 units

The American Institutions graduation requirement, as mandated in Title 5, Section 40404 ([https://govt.westlaw.com/calregs/Document/I56C041434C6911EC93A8000D3A7C4BC3/?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Document/I56C041434C6911EC93A8000D3A7C4BC3/?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default))), requires that students satisfactorily complete courses in United States history, the US Constitution, and government and American ideals (including California state and local government). At Chico State, HIST 130 meets the US history requirement (US-1), and POLS 155 meets the US Constitution and government requirement (US-2) and the California state and local government requirement (US-3). POLS 155 also fulfills three units of GE Area 4, Social and Behavioral Sciences. See Bachelor's Degree Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/bachelors-degree-requirements/#amin>) for more information.

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 US 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. Many courses taken to satisfy these requirements may also apply to General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/>).

Upper-Division Writing Requirement

Writing Across the Curriculum (EM 17-009 (<https://www.csuchico.edu/pres/em/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 Writing and Math Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/writing-math-requirements/>) for more

details on the four courses. The first of the major designated Writing (W) courses is listed below.

- ENGL 333W Advanced Composition for Future Teachers (W)
- ENGL 350W Science, Technology and the Literature of Cultural Change (W)
- EARTH 300W Earth System Science (W)
- PHIL 370W Philosophy of Science (W)

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 English Composition (1A) (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/#1A>) requirement must be completed before a student is permitted to register for a GW course.