BA IN EARTH SCIENCE

Units required for Major: 62-64

Program Description

The BA degree program is designed as a shorter, more flexible preparation for some geology jobs, earth science teaching in high school, and jobs such as park naturalist, environmentalist, geologic planning specialist, or in geology-related businesses. The BA degree can be used in dual-track majors combining geology with biological sciences, chemistry, physics, or engineering.

Program Requirements

Code	Title	Units
Required Lower Division Courses (37-38 Units)		
Select one of the following introductory Geology lecture-lab combinations:		4
GEOL 5	Geology Of Mexico	
GEOL 7 & GEOL 8L	Natural Disasters Earth Science Lab	
GEOL 8 & 8L	Earth Science Earth Science Lab	
GEOL 10 & 10L	Physical Geology Physical Geology Lab	
Each of the remaining courses as follows:		
ASTR 4B	Introduction to Stars, Galaxies, and Cosmology	3
ASTR 6	Astronomical Observation Laboratory	1
BIO 1 & BIO 2	Biodiversity, Evolution and Ecology Cells, Molecules and Genes	9 - 10
or BIO 7	Introduction to the Science of Biology	
CHEM 1A	General Chemistry I	5
or CHEM 6A	Introduction to General Chemistry	
GEOL 12	Historical Geology	3
GEOL 12L	Historical Geology Lab	1
MATH 26A	Calculus I for the Social and Life Sciences	3
PHYS 5A & PHYS 5B	General Physics: Mechanics, Heat, Sound General Physics: Light, Electricity and Magnetism, Modern Physics	8
Required Upper Division Courses (26 Units)		
GEOG 111	Elements Of Meteorology	3
GEOL 103	Sedimentology/Stratigraphy	4
GEOL 111A	Field Geology	2
GEOL 111B	Field Techniques	2
GEOL 130	Oceanography	3
Select 6 units from the following:		6
GEOL 105	Paleontology	
GEOL 110A	Structural Geology and Tectonics	
GEOL 114	Volcanology	
GEOL 120	Surficial Processes	
GEOL 121	Geology of California	
GEOL 140	Geology and the Environment	
GEOL 184	Geological Field Trip	
Select 6 units not taken previously from the following:		6
ANTH 124	Environmental Archaeology	
ANTH 151	Human Paleontology	
ENGL 120P	Intro to Professional Writing	
GEOG 113	Climate [1]	
GEOG 116	Global Climate Change	
GEOG 117	Landforms	
GEOG 161	California's Water Resources	
JOUR 131	Data Journalism	
PHIL 125	Philosophy Of Science	
RPTA 153		
Select 3-5 other upper-division geology courses with permission of instructor		
Total Units		**63-64**

[1] Indicates courses recommended for students wishing to prepare for CSET Exam for teaching high school science.

The following roadmaps are sample planning resources. Please consult your academic advisor and Academic Catalog for graduation requirements as you develop your individualized academic plan.

Earth Science, BA: 4-Year Roadmap

Course	Title	Units
Year 1		
First Semester		
GEOL 5 or GEOL 7 or GEOL 8 or GEOL 8L or GEOL 10 or GEOL 10L	Geology Of Mexico [3] or Natural Disasters or Earth Science or Earth Science Lab or Physical Geology or Physical Geology Lab	1 - 4
GE Area 1A - English Composition [2]		3
GE Area 1C - Oral Communication [2]		3
Elective of Choice		3
Elective of Choice		3
	Units	**13-16**
Second Semester		
CHEM 1A or CHEM 6A	General Chemistry I [3] or Introduction to General Chemistry	5
MATH 26A	Calculus I for the Social and Life Sciences	3
GE Area 3A - Arts [2]		3
GE Area 6 - Ethnic Studies [2]		3
	Units	**14**
Year 2		
First Semester		
GEOL 12	Historical Geology	3
GEOL 12L	Historical Geology Lab	1
PHYS 5A	General Physics: Mechanics, Heat, Sound	4
GE Area 1B - Critical Thinking [2]		3
GR American Institutions (US History) [2]		3
Elective of Choice		3
	Units	**17**
Second Semester		
PHYS 5B	General Physics: Light, Electricity and Magnetism, Modern Physics	4
GEOG 111	Elements Of Meteorology	3
Earth Science Elective Group 1 [3]		3
GE Area 4 - Social & Behavioral Sciences [2]		3

Second Semester Composition [2]		3
	Units	**16**
Year 3		
First Semester		
ASTR 4B	Introduction to Stars, Galaxies, and Cosmology	3
ASTR 6	Astronomical Observation Laboratory	1
BIO 1 or BIO 7	Biodiversity, Evolution and Ecology [3] or Introduction to the Science of Biology	4 - 5
GEOL 100	Earth Materials - Rocks and Minerals	4
GE Area 3B - Humanities [2]		3
	Units	**15-16**
Second Semester		
GEOL 103	Sedimentology/Stratigraphy	4
GEOL 111A	Field Geology	2
GEOL 111B	Field Techniques	2
Earth Science Elective Group 2 [3]		3
Earth Science Elective [3]		3
	Units	**14**
Year 4		
First Semester		
Earth Science Elective [3]		3
Earth Science Elective Group 1 [3]		3
Earth Science Elective Group 2 [3]		3
GR American Institutions (GOVT) [2]		3
Foreign Language Semester 1 [2]		4
	Units	**16**
Second Semester		
GEOL 130	Oceanography	3
Earth Science Elective [3]		3
Upper Division GE Area 3 - Arts or Humanities [2]		3
Upper Division GE Area 4 - Social & Behavioral Sciences + Writing Intensive [2]		3
Foreign Language Semester 2 [2]		4
	Units	**16**
	Total Units	**121-125**

Earth Science, BA: 2-Year Roadmap

Course	Title	Units
Year 1		
First Semester		
GEOG 111	Elements Of Meteorology	3
GEOL 100	Earth Materials - Rocks and Minerals	4
Earth Science Elective [3]		3
Earth Science Elective Group 1 [3]		3
GR American Institutions (US History) [2]		3
	Units	**16**
Second Semester		
GEOL 103	Sedimentology/Stratigraphy	4
GEOL 111A	Field Geology	2
GEOL 111B	Field Techniques	2
Earth Science Elective Group 2 [3]		3
Elective of Choice		3
	Units	**14**
Year 2		
First Semester		
Earth Science Elective [3]		3
Earth Science Elective Group 1 [3]		3
Earth Science Elective Group 2 [3]		3
GR American Institutions (GOVT) [2]		3
Foreign Language Semester 1 [2]		4
	Units	**16**
Second Semester		
GEOL 130	Oceanography	3
Earth Science Elective [3]		3
Upper Division GE Area 3 - Arts or Humanities [2]		3
Upper Division GE Area 4 - Social & Behavioral Sciences + Writing Intensive [2]		3
Foreign Language Semester 2 [2]		4
	Units	**16**
	Total Units	**62**

1. Any course not completed in the first semester should be taken in the second or a later semester.
2. Please see General Education/Graduation Requirement **course options (https://www.csus.edu/academic-affairs/curriculum-%20workflow/_internal/_documents/program-road-maps/als_2yr/art_transfer-%20roadmap-2024-25.pdf)**.
3. Please see an academic advisor for elective options.