

Geology AS-T AS-T - Active

Department: Earth Sciences

Approval: April 2014

Effective Semester: Fall 2015

Geology is the study of the materials of which the Earth is made (rocks, minerals, water, oil, natural gas, and magmas), the structures that are produced (Earth layers, mountains, volcanoes, basins), the processes acting upon them (earthquakes, volcanism, landslides, floods, magnetic fields), and the evolution of Earth and its materials over time (Earth formation, early history, ice ages, and climate change).

Geology courses are recommended for anyone interested in understanding and living with the natural world around us and in making informed decisions on matters pertaining to interactions between natural Earth processes and society.

Geology, an interdisciplinary science, requires expertise in chemistry, physics, mathematics, computer science, and critical thinking. It requires skill in problem solving, analysis, scientific inquiry, and communication. This Associate's of Science Transfer in Geology **is specifically designed to prepare students** for transfer to a CSU geology program at the upper division level. It may also be appropriate for transfer to other four-year institutions. To accomplish this goal, majors will complete transferable lower-division courses in geology, math, and chemistry.

Geology majors will be able to take most or all of their lower division courses at CCSF before they transfer, but should see a counselor to confirm their program of study. Additional courses might be required to transfer to particular institutions. The geology transfer major is suitable for students planning to transfer into programs in the geology, oceanography, earth sciences, and environmental sciences.

Through the core classes of the AS-T in Geology, students will gain the scientific knowledge necessary to investigate problems and ideas presented in upper division geology courses. The laboratory work will train students to use current laboratory technologies, equipment and techniques to engage in the research process using scientific methods and to investigate research questions safely.

Learning Outcomes

Upon completion of this program, students will be able to:

- Collect, analyze, and interpret data.
- Apply scientific inquiry and investigation of evidence as well as a synthesis of ideas from multiple disciplines including physics, chemistry, biology, and geology to formulate and critically evaluate scientific arguments, especially as relates to geologic phenomena.
- Apply basic field skills and techniques such as making observations, recognizing geologic clues and evidence, taking field notes, understanding the difference between observations and interpretations, and using and annotating maps.
- Evaluate how humans impact earth processes and how earth processes impact humans in a multitude of ways including economically, politically, socially, and environmentally.

Degree Requirements: Students who wish to earn the Associate in Science in Geology for Transfer (AS-T) must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required

for full completion of the IGETC or CSU GE curriculum and the units for the major as specified below. Each course in the major must be completed with a grade of "C" or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

Assuming students start this AS-T with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

Courses Required for the AS-T in Geology AS-T

Course	Units
Required courses:	
GEOL 10 - Physical Geology	3.00
GEOL 10L - Physical Geology Lab	2.00
GEOL 11 - Historical Geology	3.00
GEOL 11L - Historical Geology Lab	1.00
CHEM 101A - General College Chemistry	6.00
CHEM 101B - General College Chemistry	5.00
MATH 110A - Calculus I	5.00
MATH 110B - Calculus II	5.00
Total:	30.00
RECOMMENDED: One of the following physics courses	
PHYC 4A - Classical Mechanics for Scientists and Engineers	3.00
PHYC 4AL - Mechanics Laboratory for Scientists and Engineers	1.00
PHYC 4B - Electromagnetism for Scientists and Engineers	3.00
PHYC 4BL - Electromagnetism Laboratory for Scientists and Engineers	1.00
or	
PHYC 2A - Introductory Physics	3.00
PHYC 2AL - Introductory Physics Laboratory	1.00
PHYC 2B - Introductory Physics	3.00
PHYC 2BL - Introductory Physics Laboratory	1.00
* NOTE: Students who want to increase their opportunities should choose Physics 4A/B series instead of 2A/B (especially if they plan to major in geochemistry or geophysics).	
Total:	0.00
RECOMMENDED: One or more of the following course options for specialization:	
GEOL 21A - San Francisco Coastal Geology	0.50
GEOL 21B - San Francisco Geology	0.50
GEOL 21C - The San Andreas Fault System	0.50
OCAN 1 - Oceanography	3.00
GEOL 30 - Environmental Geology	3.00
Total:	0.00
Recommended additional activities:	
Enroll in the Earth Sciences Club	

Become part of the Earth Sciences Mentoring Program (see Department website for details).	
	Total: 30.00

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