

## GEOLOGY

### Natural and Applied Sciences Division

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### Geology A.S. -T Degree

Geology is the study of Earth materials and processes. The student with a transferable Associate in Science Degree in Geology is prepared to transfer into upper-division work in the major at four-year institutions and pursue a Bachelor's degree or graduate degree. The major is available at UC and CSU systems, and at other colleges and universities. A masters or Ph.D. in this field will enable the graduate to pursue a wide variety of fields such as research, academia, engineering/consulting, geohydrology, seismology, volcanology, geophysics, glaciology, and economic geology (ore and hydrocarbon deposits).

Cabrillo offers options for degrees in Geology. The first option listed below is the Associate in Science in Geology for Transfer (A.S.-T) which is intended for students who plan to transfer and complete a bachelor's degree in a similar major at a CSU campus. Students completing these degrees are guaranteed admission to the CSU system, but not to a particular campus or major. This degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU System. See Associate Degree for Transfer information in the Cabrillo College *Catalog*.

The following is required for all A.A.-T or A.S.-T degrees: Completion of 60 CSU-transferable semester units.

Minimum grade-point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum of 2.0 is required for admission, some majors may require a higher GPA.

Completion of a minimum of \*18 semester units in the major with a grade of "C" or better, or a "P" if the course is taken on a "pass/no pass" basis. \*Note: this degree requires greater than 18 units in the major for completion.

Certified completion of the California State University General Education-Breadth pattern (CSU GE Breadth) or the Intersegmental General Education Transfer Curriculum (IGETC) pattern.

### Learning Outcomes

The Cabrillo College Core Competencies (with an emphasis in the study of Geology):

1. Communication: Reading, Writing, Listening, Speaking, and/or Conversing.
2. Critical Thinking and Information Competency: Analysis, Computation, Research, Problem Solving.
3. Global Awareness: An appreciation of Scientific Processes, Global Systems and Civics, and Artistic Variety.

4. Personal Responsibility and Professional Development: Self-Management and Self-Awareness, Social and Physical Wellness, Workplace Skills.

### CSU or IGETC for CSU General Education Requirements 37-39 Units

#### Take Required Courses (28 units)

CHEM 1A	General Chemistry I .....	5
CHEM 1B	General Chemistry II .....	5
GEOL 10	Physical Geology .....	4
GEOL 20	Historical Geology .....	4
MATH 5A	Analytic Geometry and Calculus I.....	5
MATH 5B	Analytic Geometry and Calculus II.....	5

All courses are also general education courses.

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**Total Units** **60**

**Geology A.S. Degree**

Geology is the study of Earth materials and processes. A masters or Ph.D. in this field will enable the graduate to have a career in a wide variety of fields such as research, academia, engineering/consulting, geohydrology, seismology, volcanology, geophysics, glaciology, and economic geology (ore and hydro-carbon deposits), to name a few. Geology and Earth Sciences are offered as majors at UC and CSU.

**Learning Outcomes**

The Cabrillo College Core Competencies (with an emphasis in the study of Geology):

1. Communication: Reading, Writing, Listening, Speaking, and/or Conversing
2. Critical Thinking and Information Competency: Analysis, Computation, Research, Problem Solving
3. Global Awareness: An appreciation of Scientific Processes, Global Systems and Civics, and Artistic Variety
4. Personal Responsibility and Professional Development: Self-Management and Self-Awareness, Social and Physical Wellness, Workplace Skills

**Model Program for Geology**

This Associate Degree requires 60 units appropriate to your educational goal, to include general education and at least 30 units in a major. Courses should be selected to meet the lower-division major preparation requirements at your intended transfer university - these specific requirements can be found at [www.assist.org](http://www.assist.org) for 4-year public institutions in California. Please see a counselor for advisement to ensure you are taking the best possible courses given your goal.

The department presents the following suggested Model Program for this major. The courses listed below may or may not be appropriate depending on your specific goal. Please see a counselor for advisement for transfer to any 4- year institution.

<b>A.S. General Education</b>	<b>21 Units</b>
<b>Core Courses plus Approved Electives</b>	<b>Units</b>
GEOL 10 Physical Geology.....	4
CHEM 1A General Chemistry I .....	5
CHEM 1B General Chemistry II .....	5
MATH 5A Analytic Geometry and Calculus I.....	5
MATH 5B Analytic Geometry and Calculus II.....	5
MATH 5C Analytic Geometry and Calculus III.....	5
PHYS 4A Physics for Scientists and Engineers I .....	5
PHYS 4B *Physics for Scientists and Engineers II.....	5
PHYS 4C **Physics for Scientists and Engineers III.....	5
or	

PHYS 2A	*General Physics I.....	4
PHYS 2B	**General Physics II .....	4
<b>Approved Electives</b>		<b>Units</b>
ENGR 1A	*Surveying .....	4
ES 10	Introduction to Environmental Science .....	3
GEOL 15	Environmental Geology .....	3
GEOL 20	Historical Geology .....	4
GEOL 25	Geology of National Parks .....	3
MATH 6	Introduction to Linear Algebra .....	3
OCEAN 10	Introduction to Oceanography.....	4

**Total Units** **60**

\*Fall only; \*\*Spring only

**Geology Courses**

**GEOL 10 Physical Geology**

4 units; 3 hours Lecture, 3 hours Laboratory  
 Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Introduces the phenomena and basic principles of physical geology with laboratory exercises illustrating the nature of minerals, rocks, geological structures and processes such as surface water, earthquakes, volcanoes, and glaciers, and the use and interpretation of topographic and geologic maps.

*Transfer Credit:* Transfers to CSU; UC. C-ID: GEOL 101

**GEOL 15 Environmental Geology**

3 units; 3 hours Lecture  
 Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Introduces the interactions among Earth systems, humans, and the environment. Topics include Earth systems and the physical interactions among different systems, natural disasters (earthquakes, volcanoes, floods, landslides), groundwater, waste disposal, pollution, resources and population, engineering geology, and land-use planning.

*Transfer Credit:* Transfers to CSU; UC.

**GEOL 20 Historical Geology**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Introduces Earth's history with an emphasis on Western North America and California. Subjects include major mineral, rock and fossil groups, global tectonics, geologic time, stratigraphy, paleogeography, and the importance of the environment to evolution and the extinction of life forms. Field trips required. Some of the class hours for this course may be scheduled as To Be Arranged (TBA). See the *Schedule of Classes* for the details about this course offering.

*Transfer Credit:* Transfers to CSU; UC. C-ID: GEOL 110

**GEOL 25 Geology of National Parks**

3 units; 3 hours Lecture

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Introduces the geologic history, structure, and materials of National Parks in North America. Includes a survey of associated internal and external Earth processes responsible for shaping our National Parks such as plate tectonics and mountain building, earthquakes, volcanoes, mass wasting, weathering, erosion, rivers, and glaciers. May be offered in a Distance-Learning Format.

*Transfer Credit:* Transfers to CSU; UC.

**GEOL 27 Geology of the Pinnacles National Park**

1 unit; 1 hour Lecture, 0.5 hour Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Provides a weekend field lecture course allowing the student to study, through direct observation, the geologic history and processes that have formed and shaped the Pinnacles. Camping and hiking required. Camping fees may apply.

*Transfer Credit:* Transfers to CSU.

**GEOL 30 Field Geology of Point Lobos and Big Sur**

1 unit; 0.75 hours Lecture, 0.75 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100.

Repeatability: May be taken a total of 1 time.

Presents a single weekend field lecture course to study, through direct observation, the geologic history of Point Lobos and Big Sur Country.

*Transfer Credit:* Transfers to CSU.