

GEOLOGY

ASSOCIATE DEGREE & CERTIFICATE PROGRAMS

2023-2024 CATALOG

DESCRIPTION

The Cuesta College Earth and Ocean Science Program involves the study of the solid earth, ocean and atmosphere. It is the branch of science that investigates diverse geologic processes, including rock and mineral formation, tectonic and volcanic processes, and landform and seafloor development. In addition, the examination of the origins and evolution of life through the study of fossils (paleontology) and the assessment of economically important mineral deposits, fossil fuels, and geologic hazards are integral to the discipline. The chemistry and physics of the ocean and atmosphere are examined for their impact on the distribution of marine sediments, ocean circulation, weather and global climate patterns. Specific course topics fulfill the lower division requirements for majors in geology, geophysics, civil engineering, construction management, and environmental science. Students can earn an A.S. degree in Geology at Cuesta College, preparing them for transfer to four-year institutions or for employment in technical careers.

ASSOCIATE DEGREE AND CERTIFICATE PROGRAMS

Students who complete an [Associate Degree for Transfer \(ADT\)](#) and transfer to a similar major at a CSU are guaranteed a pathway to finish their baccalaureate degrees in 60 semester or 90 quarter units. These degrees require students to meet both of the following requirements: (1) Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following: (A) The Intersegmental GE Transfer Curriculum (IGETC) or the California State University GE-Breadth Requirements (CSU GE-Breadth). (B) A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district. (2) Obtainment of a minimum grade point average of 2.0.

An [Associate Degree](#), depending on the focus of study, is designed to prepare students for transfer into upper division course work in a bachelor's degree program, or, to prepare students to enter the workforce in a particular vocational field. To qualify for an Associate's Degree, a student must: (1) complete each major-specific course required for the degree with at least a "C" grade or better, (2) complete all Cuesta College general education, graduation and residency requirements, and (3) achieve an overall grade point average of 2.0 for all courses attempted (major, general education, elective).

DEGREES, CERTIFICATES & AWARDS

- Associate in Science for Transfer (A.S.-T.)
- Associate in Science (A.S.)
- Certificate of Achievement (C.A.)

CAREER OPPORTUNITIES

- Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
- Geoscientists, Except Hydrologists and Geographers
- Hydrologists
- Natural Sciences Managers
- Water Resource Specialists

CONTACT

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Phone: **(805) 546-3230**

A **Certificate Program** is designed for students who desire specific training to meet an immediate occupational or personal goal, or for promotion or lateral transfer within their existing field of employment. To qualify for a Certificate of Achievement or a Certificate of Specialization, a student must 1) complete all courses required for the Certificate with an overall grade point average of 2.0.

ASSOCIATE DEGREE FOR TRANSFER PROGRAM

Geology — Associate in Science for Transfer

The Associate in Science in Geology for Transfer Degree (AS-T in Geology) introduces the concepts and principles upon which geologic knowledge is based including the chemical composition, structure, surface and internal processes, and evolution of the earth and its life forms. The AS-T in Geology provides students with a core curriculum that will prepare them with the knowledge and skills required to succeed in the study of geology. Students will develop skills for critical/analytical thinking, perceptive reading/observation and interpretation.

Required Core: (28 credits)

GEOLOGY 210 Physical Geology	4
GEOLOGY 211 History of the Earth	4
CHEM 201A. General College Chemistry I	5
CHEM 201B. General College Chemistry II	5
MATH 265A. Calculus I	5
MATH 265B. Calculus II	5
Total Credits:	28

"P" (Pass) grade is acceptable for major coursework in the Associate Degrees for Transfer. In addition to major preparation course work listed above, completion of the CSU GE or IGETC pattern is mandatory. Courses completed for the major can also be double counted towards GE, where appropriate. See a counselor for details.

[Click Here For Program Student Learning Outcomes](#)

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree may differ from those needed to prepare to transfer. Students who plan to transfer to a four-year college or university should schedule an appointment with a Cuesta College counselor to develop a student education plan (SEP) before beginning their program.

TRANSFER RESOURCES:

CSU and UC Articulation Agreements and Majors Search Engine:
www.ASSIST.org
 CSU System Information:
www2.calstate.edu

FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that Cuesta College offers a full array of financial aid programs—grants, work study, scholarships, federal loan programs, and fee waivers. These programs are available to both full-and part-time students who are seeking a degree or certificate. For those who qualify, financial aid is available to help with tuition, fees, books and supplies, food, housing, transportation, and childcare. Please log onto our website for additional information:
www.cuesta.edu/student/studentservices/finaid

ASSOCIATE DEGREE PROGRAM**Geology** — Associate in Science

Geology entails the study of the formation and evolution of Earth, Earth's materials, and Earth processes using the scientific method. The Cuesta College Geological Sciences program is designed to provide students with an appreciation of both the large-scale and small-scale processes as well as both the internal and external processes that created the landscapes of Earth, and how a fundamental understanding of geology is applicable to the environment, construction, engineering, and daily life such as health, economics, politics, and foreign relationships. The program consists of a sequence of courses, including field studies, that prepare students for a variety of career opportunities.

Required Courses (14 credits)

GEOL 210	Physical Geology	4
GEOL 220	Geology Of California	3
GEOL 212	Environmental Geology	3
or GEOL 230 . .	Introduction To Geographic Information Systems	(3)
OCEN 210	Oceanography	3
OCEN 210L . . .	Oceanography Laboratory	1

Plus 2 credits from the following:

GEOL 229A . . .	Geoscience Field Studies In Yosemite And Eastern Sierra	1
GEOL 229B . . .	Geoscience Field Studies In Death Valley	1
GEOL 229C . . .	Geoscience Field Studies On Coasts And Coastal Processes	1
GEOL 229D . . .	Geoscience Field Studies	1

Plus 10 credits from the following:

CHEM 201A . . .	General College Chemistry I	5
CHEM 201B . . .	General College Chemistry II	5
MATH 265A . . .	Calculus I	5
MATH 265B . . .	Calculus II	5
PHYS 208A . . .	Principles Of Physics 1	5
PHYS 208B . . .	Principles Of Physics 2	5

Total Credits: **26**

[Click Here For Program Student Learning Outcomes](#)

CERTIFICATE PROGRAM**Geographic Information Systems** — Certificate of Achievement

Geographic Information Systems (GIS) is a computer-based system that integrates geographical data with descriptive data for the mapping, analysis and assessment of real-world problems. GIS professionals apply fundamental concepts of geographic information science and technology to prepare maps and visualizations. The maps and visualizations are used to display data and applied to find solutions for real-world problems. The program provides project-based and work-based training using industry standard software and hardware. The Certificate of Achievement prepares students for entry level GIS technician and analyst positions. The certificate program also provides advanced training to professionals for career advancement. Students that complete the program can choose to enter the workforce or continue to earn advanced degrees.

Core courses

GEOL 230	Introduction To Geographic Information Systems.	3
GEOL 231	Advanced Geographic Information Systems.	3
GEOL 232	Web Applications In Geographic Information Systems.	3

Elective courses

GEOL 233	Data Acquisition And Management In Geographic Information Systems.	3
or GEOL 234	Introduction To Remote Sensing.	(3)

Total Credits: **12**

[Click Here For Program Student Learning Outcomes](#)



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