

**GEOG 120 Introduction to Geographic Information Systems and GIS Software (4)**

3 hours lecture-3 hours laboratory

**Recommended preparation:** GEOG 100 and CSIS 105**Transfer acceptability:** CSU; UC

This course is an introduction to the mapping sciences with a primary focus on Geographic Information Systems (GIS). Course will cover the trends, history, structure, application, hardware and software, and basic operations of GIS in order to provide a foundation for the use of GIS software. Related geographic technologies to be examined include mapping, aerial and satellite imagery, and Global Positioning Systems (GPS). The lab portion of the course will provide introductory training in the use of ArcGIS software including identifying, evaluating, and inputting spatial data, developing and using raster and vector data sets, converting data from one form to another, and applying programming with GIS software.

**GEOG 125 California Geology and Geography (3)**

3 hours lecture

**Note:** Cross listed as GEOL 125**Transfer acceptability:** CSU; UC

Emphasizes the physical geographic and geologic factors that have combined to form the varied landscapes of California. Climate and vegetation patterns, as well as the various geomorphic processes will be studied.

**GEOG 132 Database Management and Data Acquisition (4)**

4 hours lecture

**Prerequisite:** Completion of, or concurrent enrollment in, GEOG 120**Transfer acceptability:** CSU

Course provides students with knowledge and practical experience in the fundamentals of database management, and the acquisition, conversion, and creation of spatial data within Geographic Information Systems (GIS). Topics to include strategic design, querying, modeling techniques, data appropriateness and accuracy, hardware and software requirements, conversion of digital data, creating digital data using digitizers, scanners and Global Positioning Systems (GPS), and utilization of remote sensing, photogrammetry, and web-based data. This course provides hands-on experience with database management and data acquisition using ArcGIS software.

**GEOG 134 GIS Applications (2)**

4 hours lecture/laboratory

**Prerequisite:** GEOG 120**Transfer acceptability:** CSU

This course provides students with knowledge and practical experience in Geographic Information Systems (GIS) applications. Students will learn the fundamentals of GIS programming, converting data for web publications, and developing GIS applications. The lab portion of this course provides hands-on experience with GIS programming using Visual Basic for Applications (VBA), data conversion using Arc Tools, and applications development using MapObjects software.

**GEOG 136 Intermediate ArcGIS: GIS Analysis (2)**

4 hours lecture/laboratory

**Prerequisite:** GEOG 120**Transfer acceptability:** CSU

This course will focus on more complex operations in using ArcGIS software. Students will gain hands-on experience in advanced querying operations, the use of ArcGIS extensions such as Spatial Analyst and 3D Analyst, transforming coordinates using Coordinate Geometry, using a GPS unit to generate and input spatial data, and the application of ArcGIS as an analytical tool in a variety of disciplines.

**GEOG 138 GIS Internship (2)**

6 hours laboratory

**Prerequisite:** GEOG 120**Transfer acceptability:** CSU

The Geographic Information Systems (GIS) internship is a directed program allowing students to apply classroom instruction to real-world GIS problem solving by working with a government or private agency. Students will be under the supervision of an instructor from the college and an advisor from the agency while working in one or more aspects of GIS operations.

**GEOG 195 Regional Field Studies in Geography (1,2,3)**

2, 4, or 6 hours lecture/laboratory

**Transfer acceptability:** CSU; UC – Credit determined by UC upon review of course syllabus.

Extended field studies of the geography of selected regions. Emphasis upon field observation and interpretation of climate, meteorology, vegetation, soils, and landforms.

**GEOG 295 Directed Study in Geography (1,2,3)**

3, 6, or 9 hours laboratory

**Prerequisite:** Approval of project or research by instructor**Note:** May be taken 4 times for a maximum of six units**Transfer acceptability:** CSU; UC – Credit determined by UC upon review of course syllabus.

Independent study for students who have demonstrated skills and/or proficiencies in geography subjects and have the initiative to work independently on projects or research outside the context of regularly scheduled classes. Students will work under the personal supervision of an instructor.

**Geology (GEOL)**

Contact the Earth, Space, and Aviation Sciences Department for further information, (760) 744-1150, ext. 2512

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

**PROGRAM OF STUDY****Geology**

Provides the student with sufficient background to begin upper division coursework and will prepare the student for entry-level jobs that require geologic knowledge. The student is advised to check with the school to which he/she may wish to transfer for additional courses which may be required.

**A.A. DEGREE MAJOR****Program Requirements**

Group One		Units
GEOL 100	Basic Geology	3
GEOL 100L	Basic Geology Laboratory	1
GEOL 150	Dinosaurs and Earth History	3
GEOL 150L	Dinosaurs and Earth History Laboratory	1
GEOL 195	Regional Field Studies in Geology	2

**Group Two (Select at least two sets of courses listed below)****Set 1**

MATH 140 and	Calculus/Analytic Geometry, First Course	5
MATH 141	Calculus/Analytic Geometry, Second Course	4

**Set 2**

PHYS 120 and	General Physics	8
PHYS 121		
or		
PHYS 230 and	Principles of Physics	10
PHYS 231		

**Set 3**

CHEM 110	General Chemistry	3
CHEM 110L	General Chemistry Laboratory	2
CHEM 115	General Chemistry	3
CHEM 115L	General Chemistry Laboratory	2

**Group Three (Select at least 8 units)**

Any other courses in Group Two not taken above		8-10
GEOL 110	General Geology: National Parks	3
GEOL/		
GEOG 125	California Geology and Geography	3
GEOL 195	Regional Field Studies in Geology	1,2,3

GEOL 197	Geology Topics	1,2,3
GEOL 295	Directed Study in Geology	1,2,3
ASTR 100	Principles of Astronomy	3
BIOL 100	General Biology	4
MATH 205	Calculus/Analytic Geometry, Third Course	4
MATH 206	Calculus/Differential Equations	4
OCN 100	Oceanography	3
OCN 100L	Oceanography Laboratory	1
OCN 115	Coastal Oceanography	3
PHYS 232	Principles of Physics	4

**TOTAL UNITS** **35 - 38**

### COURSE OFFERINGS

**GEOL 100 Basic Geology (3)**

3 hours lecture

**Note:** Together with GEOL 150, a prerequisite to upper division courses in Geology

**Transfer acceptability:** CSU; UC; CAN GEOL 6

Principles of physical geology. Plate tectonics, rocks and minerals, weathering, mass-wasting, surface and ground water, wind, waves and currents, glaciation, mountain building, volcanoes and other igneous activity, deformation and resulting structures, earthquakes, Earth's interior, geologic time, and earth resources.

**GEOL 100L Basic Geology Laboratory (1)**

3 hours laboratory

**Prerequisite:** Completion of, or concurrent enrollment in, GEOL 100

**Note:** May be offered as a field laboratory; satisfies lab requirement in Physical Science

**Transfer acceptability:** CSU; UC

Laboratory and field identification of rocks and rock forming minerals. Study of geologic processes by means of geologic and topographic maps.

**GEOL 110 General Geology:  
National Parks and Monuments (3)**

3 hours lecture

**Transfer acceptability:** CSU

Geologic history and processes of formation of our natural landscape. Principles of physical and historical geology as revealed in the structure, stratigraphy, and rock types of the parks and monuments.

**GEOL 120 Planets, Moons, and Comets (3)**

3 hours lecture

**Note:** Cross listed as ASTR 120

**Transfer acceptability:** CSU; UC – ASTR/GEOL 120 and ASTR 205 combined: maximum credit, one course

The astronomy and geology of the solar system, observations, dynamics, relativistic ideas, including theories of formation and evolution. Comparative survey of the atmospheres, surface features, and interiors of planets and satellites. Minor objects, such as comets and asteroids, will be included.

**GEOL 125 California Geology and Geography (3)**

3 hours lecture

**Note:** Cross listed as GEOG 125

**Transfer acceptability:** CSU; UC

Emphasizes the physical geographic and geologic factors that have combined to form the varied landscapes of California. Climate and vegetation patterns, as well as the various geomorphic processes will be studied.

**GEOL 150 Dinosaurs and Earth History (3)**

3 hours lecture

**Prerequisite:** GEOL 100, 110 or 125

**Transfer acceptability:** CSU; UC

Principles of historical geology. The origin and evolution of Earth and its biosphere, incorporating plate tectonics, stratigraphy, paleontology, and geologic dating. Together with GEOL 100, a prerequisite to upper division courses in geology.

**GEOL 150L Dinosaurs and Earth History Laboratory (1)**

3 hours laboratory

**Prerequisite:** Completion of, or concurrent enrollment in, GEOL 150

**Transfer acceptability:** CSU; UC

Laboratory and field identification of rocks and fossils. Elements of stratigraphic methods and of vertebrate and invertebrate paleontology. Study of geologic and topographic maps in relation to earth history.

**GEOL 195 Regional Field Studies in Geology (1,2,3)**

2, 4, or 6 hours lecture/laboratory

**Prerequisite:** GEOL 100 or GEOL 110 or GEOL 125 or GEOG 100

**Note:** May be taken 4 times with different content for a maximum of 6 units

**Transfer acceptability:** CSU; UC – Credit determined by UC upon review of course syllabus.

Extended field studies of the geology of western North America over weekends and during vacation and summer sessions. Emphasis upon field observation and interpretation of rock types, landforms, and structure. Localities visited may vary from year to year.

**GEOL 197 Geology Topics (1-3)**

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 3 times for a maximum of 6 units

**Transfer acceptability:** CSU

Topics in Geology. See Class Schedule for specific topic offered. Course title will designate subject covered

**GEOL 295 Directed Study in Geology (1,2,3)**

Arrange 3, 6, or 9 hours laboratory with department chairperson

**Prerequisite:** GEOL 150

**Note:** May be taken 4 times for a maximum of 6 units

**Transfer acceptability:** CSU – UC Credit determined by UC upon review of course syllabus.

Individual study in field, library, or laboratory for interested students.

## German (GERM)

Contact the Foreign Languages Department for further information, (760) 744-1150, ext. 2390

### COURSE OFFERINGS

For students who have completed foreign language course work at the high school level, and need clarification regarding placement in college level course work, contact the Counseling Center. Universities have varying policies regarding the granting of transfer credit when there is a combination of high school and college level course work.

**GERM 101 German I (5)**

5 hours lecture-1 hour laboratory

**Transfer acceptability:** CSU; UC; CAN GERM 2; GERM 101+102 =CAN GERM SEQ A

This course is the first semester of German. This elementary level course is a study of the German language and German-speaking cultures, with emphasis on the development of communicative skills and basic structures. Course combines in-class instruction and practice with self-paced study in the Foreign Language Laboratory. This beginning-level course is for students with no previous coursework in German.

**GERM 101A German IA (3)**

3 hours lecture

**Note:** Covers the first half of GERM 101; not open to students with credit for GERM 101

**Transfer acceptability:** CSU; UC

German 101A is equivalent to the first half of German 101. This elementary level course is a study of the German language and German-speaking cultures, with emphasis on the development of communicative skills and basic structures. This beginning-level course is for students with no previous coursework in German.

**GERM 101B German IB (3)**

3 hours lecture

**Prerequisite:** GERM 101A or one year of high school German