

Geology 101

Physical Geology
Fall 2004

INSTRUCTOR: Brickey Free

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OFFICE HOURS: 3M,1T,4T

CATALOG DESCRIPTION: GEOL 101. Physical Geology.3-3-0. Study of the earth, its constituents, agents, and process modifying it; also geologic structures and landforms.

(40,0601)

PREREQUISITES: None

TEXTBOOK: EARTH, Tarbuck, Lutgens

SUPPLEMENTAL READING: None

GOALS OF THE COURSE: To provide students with an understanding of the makeup of planet Earth and the processes at work on and within it.

STUDENT OUTCOME OBJECTIVES: The student must demonstrate an understanding of the following subjects:

- a) The basic structural components of atoms and elements, the physical properties of minerals, the major tetrahedral linkages of silicate minerals.
- b) The major intrusive and extrusive igneous bodies, the major igneous rock textures, the distinguishing characteristics of the major igneous rock families, the geologic settings of igneous activity and the rock types distinctive to each.
- c) The sequence of events involved in the weathering, transport, deposition, and lithification that produces sedimentary rock from parent rock sources, the classification of sedimentary rocks and the major rock types within each category.
- d) The agents of metamorphism and their role in forming metamorphic rock, the various types of metamorphism, the classification of metamorphic rocks with examples within each category.
- e) The types of stress to which rocks are subjected, the different types of folds, the types of faults, the tectonic settings and topography associated with faults and folds.
- f) Elastic rebound and its effects on rocks, the relationship between earthquakes and plate tectonics, the evidence of plate tectonics.
- g) The differences and the relationships between mechanical and chemical weathering, the effects of weathering in various climates, the major soil forming processes.
- h) The balance of forces that maintain the equilibrium of loose materials on a slope, and the features resulting from mass wasting.
- i) The parts of a stream system, the types of stream drainage patterns.

OUTLINE OF TOPICS

CHAPTERS

1: Introduction to Geology	
2: Plate Tectonics	
3: Matter and Minerals	EXAM 1(Sept 15, 16) 100 pts.
4: Igneous Rock	
5: Volcanoes	
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6: Weathering and Soil	
7: Sedimentary Rock	EXAM 2 (Oct 6, 7) 100pts
8: Metamorphic Rock	
9: Geologic Time	
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15: Mass Wasting	
16: Running Water	EXAM 3 (Nov3,4) 100pts
17: Groundwater	
18: Glaciers	
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10: Crustal Deformation	
11: Earthquakes	
13: Divergent Boundaries	EXAM 4 (Dec 7) 100pts.
14: Convergent Boundaries	FINAL
22: Planetary Geology	

GRADING: Four tests are given. The lowest of the first three will be dropped.

The final test 4, must be taken as it will be a non-drop grade. Three exams will be averaged and the final grade determined on a ten point scale (90-100% A; 80-89%B; 70-79%C; 60-69%D; below 60%F).

MAKE-UP POLICY: With a reasonable excuse, the student is allowed to make up a test.

ATTENDANCE POLICY: Students are responsible for their attendance. Roll will be called.

ACADEMIC HONESTY POLICY: The University's cheating policy as stated in the "Code of Student Conduct" booklet will be followed.

SEMESTER WITHDRAWAL: Oct 29 is the final day to receive an automatic W.

ACADEMIC DISABILITY POLICY: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in Peltier Hall, Room 100-A. The phone number is (985-448-4430 (TDD 449-7002).