

GEOL 3321/CE 3335

Geology for Engineers Laboratory, Fall 2017

Faculty Supervisor: Dr. Marianne Karplus (mkarplus@utep.edu, 747-5413) (room 317)

Teaching Assistant: Felix Ziwu (fdziwu@miners.utep.edu)

Laboratory Times: *Monday* 1:30 pm-4:20 pm, GEOL RM 404 (Felix Ziwu)
Monday 4:30 pm-7:20 pm, GEOL RM 404 (Felix Ziwu)

Office hours: *TBA* (Dr. Karplus)
Tues., 2:00 pm -3:00 pm, Thurs. 2:00 pm-3:00 pm (Felix)

Course Description: Laboratory to accompany (GEOL 3321/CE 3335) the study of the earth's composition, structure, and internal/external processes.

Laboratory Manual: **Copies of the laboratories should be downloaded from the class Blackboard site**

PLEASE come to class with a copy of the current week's lab downloaded from this site. Most labs are organized so you can print out the worksheets you need to hand in without having to print out the entire lab.

Class objectives: Upon successful completion of this lab, you will be able to:

- 1) identify rocks and minerals
- 2) explain rock formation in terms of plate tectonics
- 3) understand how mineral composition of rocks and soils influences their engineering properties
- 4) describe earth surface processes
- 5) make geological observations in the field
- 6) read topographic and geologic maps
- 7) make topographic and geologic cross sections
- 8) learn to measure/observe simple soil properties

Attendance: In order to pass this course, you are expected to attend the lab meetings. *If you miss more than two labs and do not contact me or the teaching assistant within one week of the absences, you may be withdrawn, with a grade of either W or F.* If you miss a lab, it is your responsibility to learn the material, since it will be on the tests.

Grading: Your grade in lab includes your attendance, the mandatory field trips (on campus), lab quizzes, and homework as well as the final project.

Students with Disabilities: If you think you may have a disability or if you are experiencing learning difficulties, please contact the [Disabled Student Services Office \(DSSO\)](#) at (915) 747-5148 (voice or TTY), in Union East Room 106, or by E-Mail at dss@utep.edu. They will provide any necessary accommodations. You should also meet with your instructor in order to facilitate your needs. You are expected to provide documentation of your disability in order to make special arrangements in this class.

Academic Honesty and other issues: The Geological Sciences Department has gone to great lengths in order to make learning the material easier than engaging in scholastic dishonesty, which is defined in the UTEP Student Handbook and also at <http://www.utep.edu/dos>. Proven violations of these detailed regulations may result in any of the consequences outlined in the Student Handbook. Cellular phones and pagers are to be turned off or placed in silent mode during class. Conducting telephone conversations or extensive text messaging during class time may result in disciplinary action.

Course Outline

Week of:

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| Aug. 28 | No labs, |
| Sep. 4 | No Labs, Labor Day Holiday |
| Sep. 11 | Lab 1, basic geography and topographic maps |
| Sep. 18 | Lab 2, minerals |
| Sep. 25 | Lab 3, igneous rocks, volcanic hazards
<i>Quiz #1 on reading maps and plate tectonics</i> |
| Oct. 2 | Lab 4, sedimentary rocks, hazards, topographic cross-sections
<i>Quiz #2 on minerals</i> |
| Oct. 9 | Lab 5, metamorphic rocks, hazards, engineering properties of rocks |
| Oct. 16 | Lab 6, soils part 1, weathering, campus field trip (igneous rocks, soils)
<i>Quiz #3 on rocks/rock cycle and topographic cross-sections</i> |
| Oct. 23 | Lab 6, soils part 1, Calculating percent of soil components and classification
<i>Quiz #4 on engineering properties of rocks, vertical exaggeration</i> |
| Oct. 30 | Lab 7, Soil part 2, soil testing in laboratory |
| Nov. 6 | Lab 8, structural geology, geologic cross-sections, geologic maps |
| Nov. 13 | Lab 9, geophysics I – seismic techniques, earthquakes |
| Nov. 20 | Lab 10, geophysics II – non-seismic techniques including gravity, electrical methods, well logging
<i>Quiz #5 on soils/weathering, structural geology, geologic cross sections</i> |
| Nov. 27 | Lab 11 floods, river systems, groundwater
<i>Quiz #6 on seismic geophysical methods, earthquakes</i> |
| Dec. 4 | Lab 12 slope stability |

Dec. 6 *Quiz #7 on surface water, ground water, nonseismic geophysical methods*
Presentations of final projects, the reading room in the Geology Department
(room 310) will be reserved for these presentations

Grading	Lab attendance, including handing in lab manual pages	120 points
	Lab quizzes	105 points
	Project	75 points