

GEOL 3321 (19094) – Geological Engineering Fall 2017

Lecture: Weds. 1:30-3:20 PM, Geology 123

Labs: Monday 1:30-4:20 (GEOL 3321) Geology 404 (Felix Ziwu)
Monday 4:30-7:20 (GEOL 3321) Geology 404 (Felix Ziwu)

Instructor:

Dr. Marianne Karplus (lecture) Geology 317, 747-5413, email: mkarplus@utep.edu
Office Hours: Mon. 12:30-1:30, Tues. 1:00-2:00 or by appointment

Teaching assistants (laboratories):

Felix Ziwu (fdziwu@miners.utep.edu) TTh, 1:00-3:00, room 306 geology

Text

NO text is required for the lecture part of course. Supplemental lecture material (e.g. copies of lecture power points, study guides, handouts) and lab manual will be available *at the class Blackboard site*. BUT this also means you need to take good notes and read material posted in Blackboard!

Goals for Knowledge – at the end of this course you should:

- be able to converse with a geologist/geophysicist
- be able to read geologic/geophysical reports
- know basic rock and soil types and the properties of these rocks/soils that an engineer may be concerned with (laboratories 2-5)
- understand surface geologic processes and how they affect engineering studies (laboratories 8, 10-11)
- understand internal geologic processes (e.g. faults, earthquakes, volcanoes) and how they affect engineering studies (laboratories 3, 6-7)
- know how geophysics is used in engineering site investigation (laboratories 7, 9)

Goals for Skills – at the end of this class you should:

- know how to read topographic and geologic maps (laboratories 1, 2, 4, 6)
- locate yourself on a map or aerial photograph (laboratories 1, 4)
- be able to construct topographic and geologic cross sections (laboratories 1, 4, 6)
- be able to predict properties of a rock by how it appears in hand sample/outcrop (laboratories 2-6)
- conduct simple geophysical surveys (laboratories 7, 9)
- communicate geology to colleagues and the general public (throughout the course through written and oral assignments)

How will we determine if you have reached these goals?

- in-class quizzes (will be given most Weds., typically at beginning of the second half of class)
- exams (~30 min exams)

- in-class group or individual activities
 - laboratory activities (see laboratory syllabus for specific details)
 - homework assignments
 - final project
- (see grading details that follow)

Course Outline

Development of the Earth, Plate Tectonics
Minerals
Rock Cycle
Igneous Rocks, Volcanic Hazards
Sedimentary Rocks
Metamorphic Rocks
Rock Properties
Soil Mechanics
Weathering and Soils
Stratigraphy and Geologic Time
Structural Geology
Earthquakes and Geophysics
River Systems
Groundwater
Slope Stability

Extra credit: Up to 20 points (which will be applied to your total points in the course) can be earned by participating in a geology related activity outside of class. Each month (September, October, November, December) I will be posting a list of options for this extra credit and what you will need to do if you select one of these options. NO CREDIT will be given for late submissions.

In-class exams:

October 4, October 25, November 22

Final exam: Dec. 13 (Weds.), 2017 1PM-3:45PM

Other important dates: Labor Day (NO CLASS) Sept. 4, last day to drop class with "W" is Nov. 3, Dead Day is Dec. 8.

Grading:

In-class exams (3, 50 points each)	150 points
Quizzes (best 10 out of 12)	100 points
Homework, group work	100 points
Laboratories, including project	300 points
Final Exam	100 points
Total points	750 points

675-750 = A 600-674 = B 525-599 = C 450-524 = D below 450 = F

Exam policy: If you miss an exam for any reason you must contact me within 24 hours of the exam. Otherwise I will NOT allow you to take a makeup of any kind. If I allow you to take a makeup it may be an oral or written exam.

Attendance: I will not take attendance in lecture, but will give quizzes most Weds. They cannot be made up, but I will drop your lowest 2 quiz scores. Since you do NOT have a book it is important to come to class. In order to pass this course, you are expected to attend the labs. If you miss more than two labs and do not contact me or your teaching assistant within one week of the absences, you may be withdrawn from the course, 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.

Each Wednesday during the second half of class we will complete group or individual activities. Coming on time to participate in the activities is important. If you are late for group activities points will be deducted from your portion of the group activity score.

There will be a final project in the course that will be worth 25% of your lab grade (75 points, about 9% of your course grade). The project will involve analyzing data, constructing figures, working in a group, and making a presentation - all things you will be expected to do as engineers. The project will demonstrate how geology is used by engineers to solve a practical problem.

Academic Honesty: 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.

Plagiarism: Using another person's ideas, words, drawings, etc. without giving proper credit (through a citation) is considered plagiarism. This includes anything from a book, magazine, technical report or journal, or website. It ALSO includes anything copied from another student's paper or from a paper you wrote for another class where you received credit for it. Plagiarism is considered *Academic Dishonesty* and you may be reported to the Dean of Students if I suspect you of plagiarism. I regularly randomly compare students' papers for similar wording and conduct internet searches on suspicious text. If you plagiarize as a professional it can cost you your job!

Phones and Computers: I encourage you to use laptops in class to take notes and on days when we have group activities laptops and smart phones can be helpful for looking up information. On the days of exams or quizzes you must put away all cell phones and laptops prior to the start of the exam/quiz. For exams you will be allowed to use a small index card with notes on it to help you with the exam.

Students with Disabilities: If you think you may have a disability or if you are experiencing learning difficulties, please contact the Center for Accommodations and Support Services (CASS) at (915) 747-5148 (voice or TTY), in Union East Room 106, or by E-Mail at cass@utep.edu. They will provide any necessary accommodations. You should also meet with me in order to facilitate your needs. You are expected to provide me with documentation of your disability in order to make special arrangements in this class.

Handy aids for study:

Directory of English-Spanish geological dictionaries:

http://www.alphadictionary.com/directory/Specialty_Dictionaries/Geology/

A Spanish/English Geology glossary can also be found at the Blackboard site.