

GEOL 1103 – Physical Geology Lab Syllabus – Spring 2016

Sul Ross State University, Department of Biological Geological & Physical Sciences

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Office Hours: M-F 9-10am; and by appointment

Course Description:

The objective of this course is to provide the student with an understanding of how the Earth works within the context of SCIENCE, which is a methodical, consistent and unfailing method of gathering true information about the natural world. The student will gain a theoretical foundation of geology including not just the knowledge accumulated over the past few hundred years, but also the reasons that scientists know this knowledge to be true. Topics to be discussed include plate tectonics, earthquakes, volcanoes, massive movements of the Earth's crust, the interior of Earth, the building-up and wearing down of the continents, ocean basins, groundwater, rivers, glaciers and the atmosphere.

Required Text and Materials:

Lab: Copies of the lab for each week will be placed on Blackboard for GEOL 1303. It is your responsibility to print them out before coming to lab each week.

Points:

Quizzes	11 at 10 points each, drop 1	100
Labs	11 at 100 points each, drop 1	1000
Practical	1 at 150 points	150
Final	1 at 150 points	150
		= 1400 points

General Objectives: Each student will develop:

1. Knowledge about the application of the scientific method as a tool for understanding Earth's processes
2. Knowledge about the composition and formation of common rocks and minerals
3. An understanding of the internal and external processes that create Earth's major landforms such as plate tectonics and weathering
4. Ability to identify and interpret structural features in Earth's crust such as faults and folds, and knowledge of the processes responsible for creating such structures.
5. A general knowledge of Earth history and the methods and techniques used to date rocks and geologic events

Student Learning Objectives: Each student will demonstrate the ability to:

1. Identify and interpret common rocks and minerals
2. Explain different weathering processes and the formation of sedimentary rocks
3. Determine the relative ages of rocks and geologic structures using geologic dating principles
4. Identify and evaluate structural features in Earth's crust such as faults and folds
5. Demonstrate the mechanisms and processes that create earthquakes, and how the location and strength of earthquakes are determined
6. Explain and evaluate the relationship between plate tectonics and the formation of mountains, igneous bodies and earthquake zones

Learning Outcome: The student will identify, compare/contrast, synthesize and apply bodies of information of Geology regarding the area of Earth history.

Sul Ross State University Attendance and Classroom Policies:

Attendance is expected. In order for you to succeed in this class, it is crucial that you be here. You cannot learn from me or your fellow students if you are not here. Therefore, I expect you to attend all classes, not just on exam or quiz days. Sul Ross policy states that an instructor may drop a student with an “F” for 6 absences from the TR course and 9 absences from the MWF course. (If you miss this many classes you will probably fail anyhow.) Sleeping in class will earn you an ‘absent.’ Texting in class (see next section) will also earn you an ‘absent.’

Class disruption: The Student handbook states under Student Misconduct, number 21, “Such prohibition includes disorderly classroom conduct that obstructs, interferes with, inhibits and/or disrupts teaching and/or classroom activities.” Behavior which is included in this category: 1) persistent talking to ones’ neighbors during lecture, 2) coming to class late or leaving early, 3) the use of cellular phones or MP3 devices in the classroom. **CELL PHONES MUST BE TURNED OFF IN CLASS.** This includes texting, emailing and social networking. (If you are a member of an EMS/VFD group or have a child in day care and they must be able to reach you, let me know and we will discuss.) Offenders of this policy will be asked once to stop and 5 points will be taken from their grade. If it occurs a second time, the offender will be instructed to leave the classroom and will be marked absent for that day.* This action will be followed by a meeting with the Dean of Student Life. If there are further incidents, UDPS will be called and offenders will be physically ejected from the classroom. This will quite likely be followed by expulsion from the University.

- ***Important point to distill from this:** Texting during class is disruptive and inconsiderate. Please just don’t. I reserve the right to remove 5 points from your final grade each time you text, email or get on facebook during lecture.

Plagiarism/Cheating Policy: The student is referred to the student handbook on Academic Honesty. If you are caught cheating or plagiarizing you will either be brought before the dean of the College with expulsion proceedings initiated, or given an F in the course. All work turned in must be your own.

Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student’s responsibility to initiate a request for accessibility services. If you have a disability, find out what your resources are: Students seeking accessibility services must contact Grace Petty in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is PO Box C-171, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8203.

Semester Schedule: Lecture topics, reading assignments, lab topics and exam weeks:

Chapters are short. Read all of the main-body sections of the listed chapters.

Week of	Lecture topic for 1303	Chapter reading	Lab (1103)
Jan. 19	Geology, Science, Time, Seismic data, E’s interior	2: Earth’s Interior	NO LAB
Jan. 25	Earth’s interior; heat; Plate Tectonics		Topographic Maps #1
Feb. 1	Plate Tectonics, Mountain Building, Structures	4&5: Plate Tectonics and Mountain chains	Tectonics
Feb. 8	Geologic structures; <u>EXAM 1</u>	6: Geologic structures	Structures
Feb. 15	Earthquakes, Minerals	7: Earthquakes	Geologic Maps
Feb. 22	Minerals, Volcanoes	9: Atoms, Elements & Minerals	Minerals
Feb. 29	Volcanoes, Igneous Rocks	10&11: Volcanoes, Igneous Rocks	Igneous rocks

Mar. 7	Metamorphic rocks; <u>EXAM 2</u>	15: Metamorphic Rocks	Metamorphic rocks
Mar. 21	Weathering, Soil, & Sediment, Sedimentary Rocks	12: Weathering & Soil	Sedimentary rocks
Mar. 28	Sedimentary Rocks, Geologic Time	14: Sed & sed rocks	LAB PRACTICAL EXAM
Apr. 4	Geologic time	8: Time	Geologic time
Apr. 11	Streams; <u>EXAM 3</u>	16: Streams	Topographic Maps #2
Apr. 18	Streams & ground water	17: Ground water	Ground Water
Apr. 25	Glaciers, Glacial Periods	18: Glaciers & glacial landscapes	LAB FINAL EXAM
May 2	Atmosphere & climate	---	