

GEOL 1303 – Physical Geology Syllabus – Kelsch – Spring 2017

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

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Office Hours: Tue & Thurs 1-3 pm; Thurs 9:30-10:30; 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 unflinching method of gathering facts about the natural world. The student will gain a theoretical foundation of geology including not just the knowledge accumulated by geoscientists 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, formation of the ocean basins, the building-up and wearing down of the continents, groundwater hydrology, rivers, glaciers and Earth's climate-energy budget.

Text and Materials:

RECOMMENDED Text: Earth Revealed by Carlson, Plummer and Hammersley, 9th edition. Earlier editions 6th or later will suffice.

REQUIRED Lab Manual (if taking lab): Physical Geology Laboratory Manual by E. Measures and D. Mattison (available in the SRSU bookstore)

Methods of Evaluation and Grading:

Homework: There are three take-home assignments over the term that are designed for you to apply the class content to solve problems and evaluate relationships. Two of them use the free software Google Earth, which you can either download to your own computer or use in the on-campus student computer labs. All homework is assigned during class, not on Blackboard. All homework is due during class on the assigned due date. Late projects will be accepted at 50% of your earned point value by 5pm on the due date (including right after class); 25% value by the end of the following day, and 0% after that. Each homework assignment is worth about 8% of your total grade. Because official SRSU events are scheduled well in advance, if you are going to miss class when an assignment is due it must be turned in early. Homework grades will NOT be curved. Your own work is required.

Exams: There will be four section exams including a final exam (not comprehensive.) Your lowest exam grade will be dropped from your final course grade. Exams consist of short-answer, essay, and basic-sketch questions. Exams will ENTIRELY cover material discussed in lecture. Your notes from lectures are your review material. **No make-up exams will be given unless prior arrangements have been made.** All make-ups will be essay questions and sketches only (more difficult). *Exam grades will be curved based on the student's attendance—See policy under 'Attendance.'*

Extra Credit opportunity:

FIELD TRIP: A student may earn up to 30 extra credit points by attending the one-day class field trip to Big Bend National Park on **Friday, April 7**, and completing a short follow-up assignment. More information about this trip will be given closer to the date. This is a great opportunity to (1) get free admission to the Park, and (2) have a guided tour of the geology of the Big Bend region. Since this is an activity for a class, your absence in your Friday classes that day will be excused.

Points: The required projects, quizzes and exams total 405 points:

3 Graded Exams	300 (100 each)
3 Homeworks	105 (35 each)

Total pts 405

Your accumulated points will be recorded on Blackboard in the Grade Center.

Grading: Final course grade will be based on a percentage of the total points as follows:

90.00-100%	A
80.00-89.90%	B
70.00-79.90%	C
60.00-69.90%	D
Less than 60.00%	F

*Because the exams will be curved, these grade ranges are **firm**.*

Tips to help you succeed in this course: 1) Attend every lecture and lab—do not miss class. Pay attention in class. 2) Come to class prepared. Read the recommended chapter outside of/ before/ in preparation for class. 3) Read through your own lecture notes some time shortly after the class period (within 2 days,) to be sure you understand the material that was covered. 4) If you have any problems with course material, understanding assignments, preparing for quizzes or exams... ASK YOUR INSTRUCTOR! Take advantage of my office hours and/or the laboratory instructors' office hours.

Attendance: Excellent attendance is critical for a passing grade in this course. Exam content and homework material is exclusively provided to you during lecture. If you participate in class, you will not need the curve on the exams—you will do so well that you will be a curve-setter. On the other hand, if you miss class, not only will you be lost on the exams, you will not benefit from the curve: Amount of curve that can apply to each student varies directly with that student's attendance. Specifically, two or more absences within an exam period = No curve applied to the grade. NOTE: I count late arrival as half an absence; leaving during lecture (even if you return) as half an absence; attention to your phone instead of lecture as half an absence; and sleeping during class as one full absence.

As per university policy, your instructor may drop you with an F from the course after 6 absences from TR classes or after 9 absences from MWF classes.

Attention student athletes: You are given a full week to return the completed documentation re: your progress (attendance and grade) to your coach, so when you present that card to me, I will take it and return it to you the following class period. Alternatively, you can bring it to my listed office hours and I will look up your progress then. I will not complete them at the beginning or end of class. No exceptions.

Blackboard: Blackboard will be used in this class only for storing grades and for occasionally distributing announcements. No course content will be posted on Blackboard: Your assimilation of the class material comes from the notes you take in class. Homework is assigned during class, not announced on Blackboard.

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

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 IGNORED 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 will 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 Mary Schwarze 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, recommended reading, lab topics and exam weeks:

Week of	Lecture topic and exam week	Chapter reading	Lab (if you're in lab)
16-Jan	Geology, Science, Time, Seismic data	2: Earth's Interior	NO LAB
23-Jan	Earth's interior; plate tectonics	3&4: Seafloor and Plate Tectonics	Maps
30-Jan	Plate Tectonics	5: Mountain building	Tectonics
6-Feb	Geologic structures; exam 1	6: Geologic structures	Geologic Structures
13-Feb	Earthquakes, Minerals	7: Earthquakes	Geologic Maps
20-Feb	Minerals, Volcanoes	9: Atoms, Elements & Minerals	Minerals
27-Feb	Volcanoes & other Igneous Rocks	10&11: Volcanoes, Igneous Rocks	Igneous Rocks
6-Mar	Metamorphic rocks; exam 2	15: Metamorphic Rocks	Metamorphic Rocks
13-Mar	((Spring Break: No classes))		NO LAB
20-Mar	Weathering, Soil, & Sediment	12: Weathering & Soil	Sedimentary Rocks
27-Mar	Sedimentary Rocks and Geologic Time	14: Sed & sed rocks	Lab Practical
3-Apr	Geologic time	8: Time	Geologic Time
10-Apr	Glaciers; exam 3	18: Glaciers	Topographic Maps
17-Apr	Climate, streams	16: Streams	Ground Water
24-Apr	Streams and ground water	--	Lab Final

1-May	Ground water	17: Ground water	lab practical
8-May	exam 4: during finals week		