

GEOL 1303 – Physical Geology

SPRING 2022

MWF 10:00-10:50 am WSB 101

Department of Biology, Geology and Physical Sciences; College of ALPS; Sul Ross State University

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Office hours (FTF only):

MWF 11:00 – 11:50 am
MTW 2:00 – 4:00 pm
hours could change
or call or email to make an appointment

Course Description

Physical Geology lectures provide instruction in basic vocabulary, descriptions, diagrams, and theories fundamental to a course introducing the science of the Earth. This course covers:

- ★ the nature and properties of the materials (minerals and rocks) which make up the Earth;
- ★ the distribution of these materials throughout the Earth (continental/oceanic crust and Earth's interior);
- ★ the processes by which these materials are formed (igneous, sedimentary, metamorphic), deformed (earthquakes, geologic structures, mountain building), altered (erosion, weathering), and transported (river, beach, ocean systems);
- ★ the processes that shape the Earth's surface (glaciers, water, wind).

Unique aspects of Geology, which are a through-going part of the course, include:

- ★ the theory of Plate Tectonics, which is the unifying aspect of Geology;
- ★ the concept of Deep Time, or Geologic Time, which is derived from the observation of geologic processes and earth materials.

The scientific method is fundamental to Geology, as in all sciences, and is applied throughout.

Required Texts and Materials

Physical Geology: Earth Revealed, 9th edition; 2011
Carlson, D.H., Plummer, C.C. and Hammersley, L.
McGraw-Hill Co. publisher

copies are on reserve in the library
PDF available online

Laboratory Manual for Physical Geology (GEOL 1103)
Measures and Mattison

only available at the Sul Ross bookstore

notebook/paper pens/pencils small stapler

Required University Technology Use

You are expected to check your Sul Ross email DAILY.

Blackboard will be used and you are expected to access the site and to print any material from the site.

Electronics Policy

Use of laptops/pads for notetaking must be cleared through the instructor. See instructor during office hours for consultation.

Electronic devices (cell phones) are to be turned off during lecture.

Attendance and Classroom Behavior

- ☺ You are expected to be on time to lecture every scheduled class day.
- ☺ Inform instructor if you know you will be late to class (example: car troubles).
- ☺ Inform instructor at end of lecture of unexpected tardiness (example: previous class ran long).
- ☹ Leaving during class is not allowed, except for emergency responders or illness.
- ☹ When you have 9 hours of absences, you may be dropped or advised to drop.
- ☺ Absences for University sanctioned events need documentation and advance notification.
- ☺ Absences for medical reasons need documentation.
- ☺ You are expected to take notes, participate, and show interest.

The following behaviors are not acceptable during class time (you will be told to leave class and points will be deducted from the next exam):

- ☹ Not taking notes.
- ☹ Working on another class.
- ☹ Sleeping.
- ☹ Being disruptive.
- ☹ Covert use of cell phones.

Cheating and plagiarism will not be tolerated. Assignment where this occurs will be scored with a zero.

For every hour spent in lecture you should spend at least 2 hours outside class reviewing notes/reading/studying the subject.

Refer to the Student Handbook and the Sul Ross Catalog on student behavior.

Academic Integrity and Classroom Climate of Respect

Students are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation is appreciated. Examples of academic dishonesty include but are not limited to: turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden.

This class expects free expression, critical investigation, and open discussion of ideas. There will be an atmosphere of tolerance, civility, and respect for others. We can oppose and disagree without resorting to intimidation, harassment, or personal attack. No one will harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference.

Special Needs/Disabilities

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact SRSU's Accessibility Services Coordinator, Mary Schwartz Grisham, M.Ed., LPC, Director, Counseling & Accessibility Services, Ferguson Hall (Room 112) at 432.837.8203 (leave a message and they will get back to you as soon as they can during working hours) or email mcshwartz@sulross.edu. Mailing address is PO Box C-122, Sul Ross State University, Alpine, Texas, 79832. Students receive letter with accommodations and then need to contact the instructor as soon as possible to initiate the recommended accommodations.

Grading/Course Requirements

Requirements:

Exams (3)	75%
Other	25%
quizzes	
homeworks	
field trip	
classroom behavior and other assignments	

Standard grading scheme:

A	≥90%
B	80-89%
C	70-79%
D	60-69%
	(D does not count for majors)
F	≤59%

Exams – covers the previous 4 to 4.5 weeks of material; 100 points each; material is the basic vocabulary, symbology, notation, and concepts/theory of Physical Geology; some material carries through so exams are comprehensive to some extent; types of questions include true-false, matching, multiple choice, short answer, sketching diagrams, labeling diagrams, discussion/essay and samples. If you will miss an exam for a scheduled Sul Ross activity then arrangements need to be made with the instructor to take the exam before the event. If you miss an exam because of an emergency (documentation required) then arrangements need to be made ASAP to take the exam within the exam week. If arrangements are not made, then any make-up exams will be given during Dead Day and will consist entirely of essay questions.

Homework/Projects – could include questions related to the chapter readings; internet exercises over modern, observable processes; collection of earth materials; written analysis of Geology events in the news or other media

Quizzes – short questions over the chapter readings; questions over the previous class day's lecture; homeworks and notes may be used on quizzes

Field trip – attend one day-long, or half-day long, trip offered during the semester; applies identification/interpretation of minerals and rocks, basic Geology principles of plate tectonics, relative dating principles, and surficial processes

Course/Learning Objectives

At the end of the semester, the successful student will be able to:

- ✦ know terminology associated with earth materials, such as minerals and rocks; *Geology SLO 2*
- ✦ interpret mechanism of formation of a rock, as well as summarize it's history; *Geology SLO 1*
- ✦ demonstrate knowledge of, and familiarity with, basic geologic tools such as topographic maps and cross-sections, and geologic maps and cross-sections; *Geology SLO 5*
- ✦ order geologic events and explain Earth history from examination of geologic maps, geologic cross-sections; *Geology SLO 1*
- ✦ explain how tectonics operates and has changed the Earth through time; *Geology SLO 3*

BS Geology Student Learning Outcomes (SLO's)

1. The student will be able to apply a diverse body of Geologic information in the area of Earth history.
2. The student will be able to apply a diverse body of Geologic information in the area of mineralogy and petrology.
3. The student will be able to apply a diverse body of Geologic information in the area of structural geology and tectonics.
4. The student will be able to apply a diverse body of Geologic information in the area of stratigraphy.
5. The student will be able to apply a diverse body of Geologic information in the area of field techniques.

Geology BS Marketable Skills

1. Student will be able to conduct field work.
2. Student will be able to use field equipment.
3. Student will be able to use lab equipment.
4. Student will be able to use library resources.
5. Student will be able to communicate in written and oral format.

Core Assessment

- Critical Thinking – Students will develop critical thinking skills to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- Empirical & Quantitative Skills – Students will develop empirical and quantitative skills to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusion.

Schedule is subject to change as lecture, class participation,
and class comprehension is a very organic, fluid dynamic,
and evolves during the semester

MONDAY		WEDNESDAY		FRIDAY	
Jan 10	Intro; Science & Geology (C 1)	Jan 12	Science & Geology (C 1) Atoms and Minerals (C 9)	Jan 14	Atoms and Minerals (C 9)
Jan 17	HOLIDAY – NO CLASS	Jan 19	Atoms and Minerals (C 9) Igneous (C 10 & 11)	Jan 21	Igneous (C 10 & 11)
Jan 24	Igneous (C 10 & 11)	Jan 26	Igneous (C 10 & 11)	Jan 28	Igneous (C 10 & 11)
Jan 31	Sedimentary (C 12 & 14)	Feb 2	Sedimentary (C 12 & 14)	Feb 4	Sedimentary (C 12 & 14)
Feb 7	Sedimentary (C 12 & 14)	Feb 9	Metamorphic (C 15)	Feb 11	Metamorphic (C 15)
Feb 14	EXAM 1	Feb 16	Plate Tectonics (C 2 to 7)	Feb 18	Plate Tectonics (C 2 to 7)
Feb 21	Plate Tectonics (C 2 to 7)	Feb 23	Plate Tectonics (C 2 to 7)	Feb 25	Plate Tectonics (C 2 to 7)
Feb 28	Plate Tectonics (C 2 to 7)	Mar 2	Plate Tectonics (C 2 to 7)	Mar 4	Plate Tectonics (C 2 to 7)
Mar 7	SPRING BREAK	Mar 9	SPRING BREAK	Mar 11	SPRING BREAK
Mar 14	Plate Tectonics (C 2 to 7)	Mar 16	Geologic Time (C 8)	Mar 18	Geologic Time (C 8)
Mar 21	EXAM 2	Mar 23	Deserts (C 18)	Mar 25	Deserts (C 18)
Mar 28	Coasts (C 20)	Mar 30	Coasts (C 20)	Apr 1	Streams (C 16)
Apr 4	Streams (C 16)	Apr 6	Streams (C 16)	Apr 8	Mass Wasting (C 13)
Apr 11	Ground Water (C 17)	Apr 13	Ground Water (C 17)	Apr 15	HOLIDAY – NO CLASS
Apr 18	Ground Water (C 17)	Apr 20	Glaciers (C 19)	Apr 22	Glaciers (C 19)
Apr 25	Resources (C 21)	Apr 27	Climate	Apr 29	EXAM 3 10:15-12:15