GEOLOGY 4401 - SEDIMENTARY PETROLOGY

Fall 2025

Geology Program, Natural Sciences Dept, ALPS College
Sul Ross State University

MonWedFri 10:00-10:50 Lab Wed 2-5

Dr. Elizabeth Measures
office WSB 315
837-8117
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Geology Program office WSB 314
Geology Program office 837-8112

OFFICE HOURS

MonTue 2:30 pm to 5 pm
Thrs 2:30 pm to 5 pm
or by appointment; call or email to arrange;
weekly schedule is posted next to office door

COURSE DESCRIPTION

The course covers the characteristics, classification, composition, occurrence, history, and origin of sediment and sedimentary rocks.
Laboratory work consists of examination, classification, and interpretation of hand samples and thin sections of sediment and sedimentary rocks.

PREREQUISITES/CO-REQUISITES

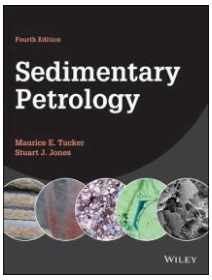
Optical Mineralogy (GEOL 2405)
Stratigraphy and Sedimentation (GEOL 3408)

METHODS OF INSTRUCTION

The course consists of three hours of work during the scheduled lab time. Open lab hours will be offered.
One to two, required, day-long field trips on a weekend. Other day trips or weekend trips possible and optional.

TEXT

No lab manual.
Lecture text will be used in lab
Sedimentary Petrology **ISBN 978-1-118-78649-9**.
4th ed, 2023
M. Tucker & S. Jones.



REFERENCE BOOKS/TEXTS

Books to be used for reference will be available in the lab.

MATERIALS

Notebook/paper pencils map pencils hand lens stapler

CLASS ATTENDANCE AND CONDUCT - EXPECTATIONS AND REQUIREMENTS

- ✯ Be on time to lecture and lab, attend all lectures and labs, and stay throughout the entire designated period.
- ✯ Be engaged, awake, and on task.
- ✯ Do not work on another class during this class.
- ✯ Keep instructor informed either before anticipated absence or after unplanned absence.
- ✯ Where possible, schedule routine medical/dental appointments around lecture/lab times.
- ✯ If you are going to miss a lecture, or have missed a lecture, written notification (email) and documentation must be provided as soon as possible. Be sure to get the notes from another student in the class.
- ✯ Legitimate reasons for tardiness, leaving and returning during class, or leaving class early are, but are not limited to, illness, appointment with specialist, family emergency, caregiver duties, and emergency responder calls.
- ✯ Inform instructor prior to class if conditions exist that may cause you to leave periodically during class or leave before the end of class.
- ✯ Arrangements for missed assignments must be made, and the make-up done, within one week of the scheduled due date. Points will be deducted for late work.
- ✯ Late assignments will not be accepted once graded papers are returned.
- ✯ You are expected to observe the University's Code of Student Conduct (see the Student Handbook).

ELECTRONICS POLICY

- Texting, checking email, playing games, surfing the internet, working on another class during lectures is not acceptable.
- Smart phones, cell phones, i-pods, laptops, earbuds (etc.) are to be turned OFF during lectures.
- If taking notes on an electronic device is your preferred method, please discuss this with the instructor.
- If electronics are to be used for recording audio or for taking images of material written on the board, please discuss this with the instructor. DO NOT post any class recordings on any social media/web site.
- If you need access to your electronics during lectures (e.g., caregiver, emergency responder), for purposes other than note taking, audio recording, or obtaining images of material written on the board, discuss this with the instructor.
- Points will be deducted from exams for violation of the electronic policy during lectures.
- Electronics may be used during lab and for purposes of lab.
- Multitasking is not a good idea.
- **If electronics are accessed during an exam, then the exam will receive a grade of zero.**
- If an electronic device makes an audible noise during an exam, then the exam will receive a grade of zero.
- **Use of any AI on any assignment will result in a grade of zero on the assignment.**

FIELD TRIP(S)

One to two, day-long field trip(s) and field exercise(s) are required.

GRADING AND ASSIGNMENTS

The semester grade:

50%	weekly lab assignments
30%	lab practicals
10%	quizzes and lab attendance
10%	field exercise(s)

Grading Scale

100-90.00%	A	
89.99-80.00%	B	
79.99-70.00%	C	
69.99-60.00%	D	(D and lower does not count for Geology major credit)
<59.99%	F	

Any curving, or dropping of grades, will be done after the last exam (scheduled during finals week).

Lab grade will be included in final grade for the entire course. It will only count 30% toward the total final course grade.

Weekly lab Assignment – total of 12; Examination, description, analysis of sediment, rocks, and thin sections.

Lab Practical – total of 2; Examination, description, analysis of sediment, rocks, and thin sections.

Quizzes – 10 or less; over chapter material pertinent to daily lab; over previous week's lab

Field exercises – Hands-on application of content knowledge and methodologies to a real world project.

DISABILITIES ACCOMMODATION **ADA (Americans with Disabilities Act)**

Sul Ross State University (SRSU) is committed to equal access in compliance with the 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 for accessibility services. Students seeking accessibility/accommodation services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email mschwartze@sulross.edu, or contact Ronnie Harris, LPC, Counselor at 432-837-8203 or email Ronnie.harris@sulross.edu. The office is located on the first floor of Ferguson Hall, room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas, 79832.

<u>You will be provided with an accommodation letter which must be given to the instructor as early as possible in the semester.</u>

SCHEDULE IS TENTATIVE AND SUBJECT TO CHANGE

WEDNESDAY	
Aug 27	Lecture - Particle Parameters
Sept 3	Particle Parameters/Granulometrics
Sept 10	Clastics 1 – Conglomerate/Breccias
Sept 17	Clastics 2 – Sand & Sandstones **Exam 1 Applied Granulometrics**
Sept 24	Clastics 3 – Sandstones
Oct 1	Clastics 4 – Sandstones
Oct 8	**Lab Practical 1**
Oct 15	Carbonates 1
Oct 22	Carbonates 2
Oct 29	Carbonates 3
Nov 5	Carbonates 4
Nov 12	Miscellaneous Sedimentary Rocks 1 & 2 Clastics 5 – Mudrocks
Nov 19	Miscellaneous Sedimentary Rocks 1 & 2 Clastics 5 – Mudrocks
Nov 26	**Thanksgiving Holiday** **No Class**
Dec 3	**Lab Practical 2**

GEOLOGY UNDERGRADUATE PROGRAM (BS) 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.

EXPECTED COURSE LEARNING OBJECTIVES:

At the end of the semester, the successful student will be able to apply critical reasoning and problem-solving skills to:

- Identify, describe, and apply the basic classification schemes for identification of the sedimentary rock types (clastics, carbonates, cherts, evaporites, coals, phosphates, and iron deposits), in hand sample and thin section. (SLO 2)
- Interpret and explain mechanisms and modes of transportation, deposition, and environment from examination of sediment and sedimentary rocks, in hand sample and thin section. (SLO 2)
- Use basic geologic lab equipment (handlens, stereomicroscope and petrographic microscope) correctly and safely for the examination, description, and interpretation of sediment and sedimentary rocks. (SLO 2)
- Integrate different lithologies into a facies model and use the mode, and stratigraphic relationships, to interpret the depositional history of a region. (SLO 1 and SLO 2 and SLO 4)
- Summarize and synthesize all aspects of sedimentary petrology in a class capstone field exercise that requires analysis of a sedimentary rock outcrop through the design and creation of a descriptive measured section. (SLO 2 and SLO 5)

GEOLOGY UNDERGRADUATE (BACHELOR OF SCIENCE) STUDENT MARKETABLE SKILLS:

- The student will be able to conduct fieldwork.
- The student will be able to use field equipment.
- The student will be able to use lab equipment.
- The student will be able to use library resources.
- The student will be able to communicate in written and oral format.

LIBRARY

The Bryan Wildenthal Memorial Library offers FREE resources and services to the entire community. The library's website, library.sulross.edu, has information on how to borrow or electronically access books, articles, and more. Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for coursework and can be reached by email (srsulibrary@sulross.edu) or phone (432-837-8123).

ACADEMIC INTEGRITY

Students are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. Students should submit work that is their own. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation contributes to learning.

Examples of academic dishonesty include, but are not limited to:

- Turning in work as original that was used in whole or in part for another course and/or professor;
- Turning in another's person's work as one's own;
- Copying from professional works or internet sites without citation;
- Collaborating on a course assignment, exam, or quiz when collaboration is forbidden;
- Using AI for an assignment.

Violations of academic integrity can result in failing an assignment, failing the class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall.

CLASSROOM CLIMATE OF RESPECT

This class fosters free expression, critical investigation, and open discussion of ideas. Everyone in the class must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, all people in the class must learn how to probe, oppose, and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Discourse will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.