

CARBONATE PETROLOGY - GEOL 5326

Fall 2026

TueThrs 9:30 – 10:45 am

Geology Program; Natural Sciences Department; ALPS College; Sul Ross State University

Dr. E Measures

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432-837-8117

WSB 315

Office hours:

MonWed 3 to 5

Thrs 2:30 to 5

can't make these times?

call or email to make an appointment;

weekly schedule is posted next to office door

COURSE DESCRIPTION

Origin, classification, and diagenesis of ancient and modern carbonate rocks and sediment.

From SRSU Catalog

Carbonate petrology deals with the origin, description, classification, and interpretation of limestones and dolostones. The emphasis will be on carbonate description, interpretation, facies and microfacies usage, and stratigraphy. Local and regional examples will be examined.

METHODS OF INSTRUCTION

Course consists of 3 hours of lecture per week and several optional one-day trips. While the emphasis of the course is on carbonate depositional environments, some petrographic exercises will be required including an independent project which will require collecting and preparation of samples. Outside readings and discussions of the articles are also a part of the course.

FIELD TRIPS

Up to four, one-day to half day, field trips will be offered and will examine local carbonates.

TEXTS (most on reserve in Library)

Origin of Carbonate Sedimentary Rocks. 2016. James and Jones. Wiley

Carbonate Sedimentology. 1991. Tucker and Wright. Wiley-Blackwell.

Carbonate Depositional Environments, AAPG Memoir 33. 1983. Scholle & others, eds.

Carbonate Facies in Geologic History. 1975. Wilson. Springer-Verlag.

Readings/homeworks will be assigned from these texts.

Articles from geologic journals will be assigned.

MATERIALS

Notebook/paper

pens & pencils

STUDENT RESPONSIBILITIES STATEMENT

All full-time and part-time students are responsible for familiarizing themselves with the **Student Handbook** and the **Undergraduate & Graduate Catalog** and for abiding by the **University rules and regulations**.

Additionally, students are responsible for checking their **Sul Ross email as an official form of communication from the university**. Every student is expected to obey all federal, state, and local laws and is expected to familiarize him/herself with the requirements of such laws.

ATTENDANCE POLICY

Attendance is expected in lectures. Come on time and do not leave during class or leave class early. Lecture exams and exercises missed cannot be made up at a later time **unless** prior arrangements are made. If you are going to miss an exam/homework/deadline for a legitimate reason, let the instructor know AHEAD of time. Be sure to have documentation.

Use of electronic devices, not specifically related to taking notes or recording lecture, is not acceptable.

You are expected to check your Sul Ross e-mail and to access Blackboard.

DISABILITIES ACCOMMODATION ADA statement (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. To help protect confidentiality, students seeking accessibility/accommodation services must submit the **Accommodation Request Form** (located on the Counseling and Accessibility Services website). For questions regarding the process, SRSU's Accessibility Services can be reached at 432-837-8203. 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.*

Any accommodations will be sent as an email to the course instructor.

GRADING/METHODS OF ASSESSMENT/EVALUATION

The semester grade/assignments:	Grading Scale:	
66% from lecture exams (3)	100-90.00	A
10% from homework assignments	89.99-80.00	B
24% from term research reports/projects (2)	79.99-70.00	C
	69.99-60.00	D

Exams will occur about every 4 to 5 weeks. Various formats will be used for the questions. Samples will also be included on exams

Homework will be from text/article readings.

Term research reports/projects: 1) a literature search and synthesis of a topic related to carbonates presented in a written report; 2) an original research project based on sample collection, preparation, description, and interpretation of carbonates resulting in a written report and an oral presentation.

COURSE SCHEDULE tentative

Wk 1	TueThrs	25 Aug, 27 Aug	Intro & Review of Carbonate sedimentation
Wk 2	TueThrs	1 Sept, 2 Sept	Classification of Carbonate Rocks I
Wk 3	TueThrs	8 Sept, 10 Sept	Classifications II; Modern Carbonates I
Wk 4	TueThrs	15 Sept, 17 Sept	Microfacies; Carbonate Platforms
Wk 5	TueThrs	22 Sept, 24 Sept	readings discussions
Wk 6	TueThrs	29 Sept, 1 Oct	Techs of Carbonate Petrography; Exam 1
Wk 7	TueThrs	6 Oct, 8 Oct	Carbonate Depo Environments
Wk 8	TueThrs	13 Oct, 15 Oct	Reefs; Permian Reef Complex
Wk 9	TueThrs	20 Oct, 22 Oct	readings discussion
Wk 10	TueThrs	27 Oct, 29 Oct	Bahamas; Persian Gulf
Wk 11	TueThrs	3 Nov, 5 Nov	readings discussions; Exam 2
Wk 12	TueThrs	10 Nov, 12 Nov	Dolomite; Diagenesis
Wk 13	TueThrs	17 Nov, 19 Nov	Modern Carbonates I; Ancient Carbonates
Wk 14	TueThrs	24 Nov	Ancient Carbonates
Wk 15	TueThrs	3 Dec	Presentation
Wk 16	XXXDAY	X Dec	TBA Exam 3

Field trip dates: to be announced in class

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 and describe carbonate hand samples and thin sections using carbonate rock classification schemes (SLO 1 & SLO 3)
- * interpret and explain the depositional environments (sedimentary processes and settings) that produce various types of carbonate rocks from examination of hand samples and thin sections (SLO 1 & SLO 3)
- * collect carbonate samples and prepare them in the lab (SLO 3)
- * writing a paper describing and interpreting a suite of carbonates and then orally presenting the paper (SLO 4)

GEOLOGY MASTER OF SCIENCE STUDENT LEARNING OUTCOMES (SLO's)

1. The student will be able to apply diverse bodies of Geologic information in the area of advanced sedimentary geology.
2. The student will be able to apply diverse bodies of Geologic information in the area of advanced igneous/metamorphic processes, structure and tectonics.
3. The student will be able to apply diverse bodies of Geologic information to field and lab research and techniques.
4. The student will be able to communicate diverse bodies of Geologic information through the standard scientific format of an oral presentation based on a written paper.

GEOLOGY MASTER OF SCIENCE STUDENT MARKETABLE SKILLS

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

WARNING ABOUT GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

Be aware that many generative AI tools (e.g., ChatGPT, Google Gemini, Microsoft Copilot) store user input and may use this data to train future models. For this reason, never upload or share personal, confidential, or identifiable information – such as names, ID numbers, health data, or assignment submissions containing such details – into any generative AI platform. IF using AI tools, verify whether the tool complies with student privacy standards, as indicated by the SRSU. Ultimate responsibility for data protection rests with users. SRSU is not liable for any adverse experience or impact when students interact with these tools.

LIBRARY

The Bryan Wildenthal Memorial Library and Archives of the Big Bend offers FREE resources and services to the entire SRSU 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 in person, by email (srsulibrary@sulross.edu) or by 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. Any violation of academic integrity is called academic dishonesty or cheating.

Examples of academic dishonesty (cheating) 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 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.**

Many of these examples are also considered plagiarism.

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.

Use of AI is considered to be academic dishonesty in this course. Use of AI will result in a final grade of "F" in this course.