

Sedimentology GEOL 3326-3126

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Office Hours M-W 12:00—1:00
Th 2:00-3:00

Text Boggs, Principals of Sedimentology 3rd, 4th or 5th edition.

Goals: On completion of the class you should be able to:

- 1: identify and describe sedimentary rocks in field and hand specimen,
- 2: describe a stratigraphic section, correlate stratigraphy both in outcrop and the subsurface,
- 3: Interpret depositional processes and depositional environments.
- 4: You should have a thorough understanding of the physics of sediment transport and how this is reflected in sedimentary rocks.
- 5: You should be able to interpret depositional environments from rocks.

I want you to be able to look at a rock and interpret the processes active based on the sedimentary structures, then interpret the environment based on the processes you infer.

Methods: There are three parts to this class. (1) Learning about sedimentology and stratigraphy in the lecture part of the class. (2) Learning practical field and laboratory skills. You must demonstrate a complete knowledge of sedimentary rocks and how to describe them. Much of this will be graded as pass-fail, either you do it or you don't. (3) Application of class material and practical skills to solve field problems. The last lab sections are devoted to a major field problem which you will write up as a paper.

Grading: Four Exams 60%; Labs and field Projects 25% Final Project or Final Exam 15%

Notes: **Read each chapter before attending the lecture on it.** Take notes and ask yourself questions while reading. Attendance is not mandatory; however there are no make-ups for labs, field problems, or exams unless prior permission is obtained. Some laboratories may incorporate lectures.

Graduate Student Requirements – Graduate students are required to complete all of the assignments required of undergraduates and in addition must – 1) write 3 reports on field laboratory studies written in the style of professional journals and that include references from recent articles on the type of deposit studied. They are required to demonstrate a greater degree of understanding on the midterm and final exams and will be expected to score 5 points higher than the undergraduates for a comparable grade on each exam.

	Date	Topic / Laboratory	Assigned Reading
Sediments and sedimentary rocks			
Week 1		Intro to Class, What is sedimentology? Sedimentary particles and textures, Lab 1 – Sediment Textures Field Trip 1 Friday	p. xvii, p. 2, Chapt. 3
Week 2		Labor Day Sedimentary Structures Siliciclastic Sediments Carbonate Rocks. Chemical and biological factors in sedimentology FT 2-- Description of Sed Rocks, Describing a Strat Section	Chpt. 4, Chpt. 5 Chpt 6, Chpt. 7
Week 3		Lab 2 -- Sedimentary Structures Start Lab 3 Clastic Rocks Do these labs on your own time. Class time will be spent teaching how to identify and classivy	
Week 4		Stokes Law, Bernoulli's eqn. The Physics of flow and particle movement, bed load and suspended load transport Test on Sedimentary Fabrics and Structures and Sedimentary Rocks	Chpt 2
Section 2 Physics of Sedimentation			
Week 5		Field Trip 1 -- Three day field trip to Indio and Guadalupe Mountains	Chpt 2 cont.

Week 6	Current flow and sed structures ripples, dunes, antidunes Field Trip 5 Cristo Rey2 FT - 4 Breaking out and Describing Facies	Chpt 2 cont.
Week 7	Environmental Analysis-- Walther's Law, Facies Models Field Trip to Big Bend October 12-14	Chpt. 8
Section 3 Depositional Environments		
Week 8	Second Exam Physics of Flow	
Week 9	Coastal Deposition Marine Environments Fluvial and Eolian Deposition	Chpt 9, to p. 306 Chpt. 10, 11 to p. 398
Week 10	Deep sea and Carbonate deposition	Chpt 11 p. 398 to end, Chpt 12 Readings on final project
Section 4 Stratigraphy		
Week 11	Lithostratigraphy/ START Final Project GSA	Chpt 13
Week 12	Exam 3 on depositional Environments Seismic Stratigraphy	Chpt 14
Week 13	LAB 5 Seismic Stratigraphy Lab/	Chpt 15
Week 14	Seismic Stratigraphy Cont.	To be announced
Week 15	Last Exam Final Project Due Dead Day Friday Dec 3	

Final Exam Wednesday Dec 12th 10:00-12:45

Make-up Policy: No make up exams or quizzes will be allowed except with proper documentation, i.e. doctor's note, hospital's note, or UTEP excused absence document. Homework is due on specified due dates no exceptions.

Attendance Policy: Students are strongly recommended to attend all classes and field trips.

Academic Integrity Policy: Cheating on a Test or Quiz must be dealt with in accordance with University regulations. This means automatic referral to and adjudication by the Dean of Students. During a Test or Quiz, you must present yourself in a manner that reflects an understanding of the traditional standards of academic honesty. You may not use notes, your text, or an unauthorized calculator, and you may not at any time speak to other students or refer to their papers.

Civility Statement: Please turn off Cell phones when you enter class and participate in class, active participation in this class is a vital part of your success. If a cell phone goes off in class or if a distraction occurs because of texting in class, we will have an immediate quiz for credit.

Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

Military Statement:

If you are a military student with the potential of being called to military service and /or training during the course of the semester, you must contact me as soon as possible so that we can prevent potential difficulties.

Supplies Needed

- Colored Pencils
- Calculator
- 2 protractors
- 2 rulers with a metric scale
- Field notebook
- Marking Pen
- Sharp mechanical pencil
- Water bottles
- Hammer