

Geology 5328
Advanced Sedimentation
Spring 2021, Sul Ross State University

Instructor: David Rohr, WSB 314B, x8167; Office hours 9:30-11:30 MWF, or by appointment.

Description and Objectives: The course will emphasize the nature, observation, and analysis of clastic depositional environments.

Course Outline: (details on BlackBoard)

Week 1: Nature of clastic sedimentation

2. Glacial
3. Fluvial
4. Eolian
5. Lakes
6. Transitional marine and non-marine
7. Shallow marine, beach
8. Shallow marine, barrier islands
9. Shelf
10. Slope, turbidites
11. Deep Marine
12. Sequence stratigraphy
13. Tectonics and sedimentation

Class attendance policy: Attendance is expected in lectures. Exams and exercises missed cannot be made up at a later time unless prior arrangements are made with the instructor. If you are going to miss a lecture exam for a legitimate reason, let the instructor know AHEAD of time.

Grading and examinations: The semester grade is based on three exams plus five homework assignments, plus a term project.

Exams are about every 5 weeks. Each exam counts 25 percent.

Each homework counts 2 percent.

Term project/presentation counts 15 percent.

Texts: Sandstone Depositional Environments, AAPG Memoir 31.

Reference Materials: Handouts and outside readings will be provided.

METHODS OF ASSESSMENT/EVALUATION – Learning outcome assessment will be made on the basis of three Exams. The exams will assess the application of critical reasoning and problem solving skills through short answer questions and multiple choice questions (with some diagrams). The graded exams will be reviewed, by discussing the logic of the answers to and content of the questions. Homework assignments will assess student problem solving skills in applying, describing, and explaining principles and processes of Earth processes and on Earth by using, in part, online resources.

CONDUCT: Students are expected to observe the University's Code of Student Conduct (see Student Handbook, <http://www.sulross.edu/pages/3633.asp>). Please turn OFF all electronics.

DISABILITY: 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. Students seeking accessibility services must contact Mary Schwartz, M. Ed., L.P.C., in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8691. E-mail: mschwartz@sulross.edu .

EXPECTED LEARNING OUTCOMES/OBJECTIVES – Outcome 4

A student graduating with the MS Geology is expected to demonstrate that (s)he is able to identify, compare/contrast, synthesize and apply bodies of information of Geology in the areas of advanced stratigraphy, paleontology and sedimentary processes.

The SLO for Geology are 1. Earth history and materials, 2. Mineralogy and petrology, 3. Structural geology and tectonics, 4. Stratigraphy, 5. Field techniques. This advanced course emphasizes 1 and 4, with secondary content in 2,3,5. Upon completion of this course, the student will be able to apply critical reasoning and problem solving skills to: 1. Identify, describe, and apply the basic stratigraphic principals for evaluating relative time relationships. 2. Explain the processes of sedimentation and relate the associated features 3. Explain the relationship between depositional environments and related facies. 4. Apply the basic classification schemes for discrimination of sedimentary rocks. See course outline above.

METHODS OF ASSESSMENT/EVALUATION – Learning outcome assessment will be made on the basis of two (2) Exams and one (1) Final Exam. The exams will assess the application of critical reasoning and problem solving skills through short answer questions and multiple choice questions (with some diagrams). The graded exams will be reviewed, by discussing the logic of the answers to and content of the questions missed by a majority of the class. Homework assignments will assess student problem solving skills in applying, describing, and explaining principles and processes of stratigraphy and sedimentology. A final report and oral presentation will apply the principles of sedimentology to an actual formation.