

Text: Principles of Sedimentology and Stratigraphy, 2006 (4th ed), Sam Boggs, Jr.

Instructor: Dr. Ronald L. Martino

Office: S174; Office Hours: : M: 8-9, 3-5; T: 8-10; W: 8-9, 3-5

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Course Description: Stratigraphy & Sedimentation-(GLY 325, 4 hrs)

Formation, organization, sequence, and correlation of sedimentary rocks; study of the origin, transportation, and deposition of rock-forming sediments.

Prerequisite Courses: GLY 201 and 211L or permission

Desired Learner Outcomes: Students should be able to:

- 1) describe the lithology and sedimentary structures of sedimentary rocks and interpret the physical, biological and chemical processes responsible for their origin;
- 2) recognize, describe, and interpret sedimentary facies, the basic building blocks of stratigraphic sequences;
- 3) understand and utilize various types of stratigraphic correlation;
- 4) describe and analyze sedimentary strata in the field and in the subsurface;
- 5) use the geologic literature in research projects;
- 6) improve technical writing skills;
- 7) develop an understanding of the interaction of climate, tectonics, and sea level changes in the development of sedimentary sequences.

Grading Procedure

<u>Lecture</u>	<u>Lab</u>
Exams 1, 2, 3: 20 % each	20 % Exercises
Final Exam: 40 %	50 % Lab Final
	30 % Lab Project

Final Grade in Course = 50 % lecture, 40 % lab, 10 % attendance/participation

Attendance/Participation Policy

Attendance will be kept by taking roll at the beginning of each class. If a student comes in late, it is their responsibility to notify the instructor at the end of class. Attendance during exams is mandatory. Only legitimate and verifiable excuses will be considered (serious medical, legal, or military reasons, or death in the immediate family).

Students should complete the assigned reading prior to coming to class or lab and be prepared to answer questions and participate in class and lab discussions.

Lab Exercises

There will be approximately 7 lab exercises during the semester. They will involve collection and presentation of data, as well as analysis and interpretation. The writing portion will typically include 2-3 pages. The objectives of these exercises will be to familiarize students with various methods of data acquisition and to develop the ability to analyze and interpret these data in a logical manner.

Course Outline (Tentative)

<u>Week No.</u>	<u>Lecture Topic</u>	<u>Assignment</u>
1	Sedimentary Textures	C. 3
2	Transport & Deposition of Clastic Sediments	C. 2
3	Sedimentary Structures	C. 4
4	EXAM # 1	
5	Siliciclastic Sedimentary Rocks	C. 5
6	Carbonate Sedimentary Rocks	C. 6
7-8	Continental (Terrestrial) Environments/Facies	C. 8+
9	EXAM # 2	
[Oct. 27 = last day to drop courses with "W"]		
10	Marginal Marine Environments/Facies	C. 9
11	Siliciclastic Marine Environments/Facies	C. 10
12	Carbonate and Evaporite Environments/Facies	C. 11
13	EXAM # 3	
14-15	Stratigraphy	C. 12 +
____FINAL EXAM ____ (comprehensive)_____		

TENTATIVE LIST OF LAB TOPICS/ACTIVITIES

<u>Week</u>	<u>Topic</u>
1	Sieve Analysis of Sand
2	Hydrometer Analysis of Mud
3	I. D. & Interpretation of Sedimentary Rocks and Structures
4	I.D. and Interpretation of Biogenic Sedimentary Structures
5	Paleocurrent Analysis
6	Measuring/Describing Stratigraphic Section (outcrop) w/ Component Facies
7	Subsurface Stratigraphic Analysis (geophysical logs)
8	Lab Final October 10
9-15	Field Project Stratigraphy, Paleoenvironmental Reconstruction

Field Trips (including a 2-day field trip w/ camping out) Oct 20-21 (tentative)

Field Project due 12/5/06 at 4:00. This is a firm deadline. No projects will be accepted after this time.