

Sedimentary Rocks (GEO 416M)

Spring 2011

Lecture: Meets MWF 10-11 AM, JGB 2.324

Instructors: Dr. William Fisher, wfisher@jsg.utexas.edu
Office: JGB 6.130, Office hours: MWF 1 – 3 PM
Dr. Wonsuck Kim, delta@jsg.utexas.edu
Office: EPS 3.154, Office hours: MW 11 AM – noon & by appointment

Teaching Assistants:

Eric Anderson – MW 4-6, MW 6-8, mr_anderson@mail.utexas.edu
Katherine Delbecq – TTh 8-10, WF 12-2, delbeka@mail.utexas.edu
Nathaniel Jones – TTh 5-7, TTh 12-2, bear8u@paulinebjones.com
Ellen Reid – MF 8-10, TTh 10-12, e.reid@mail.utexas.edu
Molly Kent – TTh 2-4, MW 2-4, kentm@mail.utexas.edu

Laboratory: Meets in JGB 3.106. There are two laboratory exercises each week. TA will hand out laboratory manual in each session.

Date	Lecturer	Topic	Reading*
19-Jan	WK	Class Intro: Overview of Sedimentary Deposits	B3, B6, B12
21-Jan	WK	Production of Siliciclastic Sediment	B1, B3
24-Jan	WK	Styles of Sediment Transport	B2
26-Jan	WK	Sedimentary Structures	B4
28-Jan	WK	Sedimentary Structures	B4
31-Jan	WK	Controls on Sediment Deposition	
2-Feb	WK	Classification of Siliciclastic Rocks	B5
4-Feb	WK	Sandstone Diagenesis	B5
7-Feb	WK	Aeolian Systems	B8.3
9-Feb	WK	Alluvial Fans	B8.2
11-Feb	WK	Rivers	B8.2
14-Feb	WK	EXAM 1	
16-Feb	WF	Deltas 1	B9.2
18-Feb	WF	Deltas 2	B9.2
21-Feb	WF	Lacustrine	
23-Feb	WF	Shorezone and Shelf	B9, B10
25-Feb	WF	Slope 1	B10
28-Feb	WF	Slope 2	B10
2-Mar	WF	Litho -, Bio- & Chrono-Stratigraphy, Facies Models	B12, B14, B15
4-Mar	WF	Seismic Stratigraphy	B13
7-Mar	WF	Sequence Stratigraphy 1	B13, B16
9-Mar	WF	Sequence Stratigraphy 2	B16
11-Mar	WF	EXAM 2	
March 14–19, Spring Break, No Classes			
21-Mar	WK	Paradox of Drowned Carbonate Platforms	
23-Mar	WK	Chemical Sediments	T&W 1.1 & 2.1

25-Mar	WK	Carbonates Mineralogy and Geochemistry	T&W 1.3
28-Mar	WK	Carbonate Factory and Skeletal Grains	T&W 1.3
30-Mar	WK	Carbonate Constituents: Skeletal Grains 1	T&W 1.2
1-Apr	WK	Carbonate Constituents: Skeletal Grains 2	
4-Apr	WK	Carbonate Constituents: Non-skeletal Grains	T&W 1.4 & 1.9
6-Apr	WK	Carbonate Mud & Porosity	T&W 1.7
8-Apr	WK	Isotopes: Trace Elements	T&W 9
11-Apr	WK	Paleoclimate and Carbonate Cycle	T&W 9
13-Apr	WK	EXAM 3	
15-Apr	WF	Carbonate Facies and Classification	B11, T&W 2
18-Apr	WF	Modern Carbonates 1	B1, T&W 3
20-Apr	WF	Modern Carbonates 2	B1, T&W 3
22-Apr	WF	Tidal and Near Shore	B11, T&W 4
25-Apr	WF	Reefs 1	B11, T&W 4
27-Apr	WF	Reefs 2	B11, T&W 4
29-Apr	WF	Platform Slope and Deep Water	B11, T&W 5
2-May	WF	Dolomite and Diagenesis	B6, T&W 7-8
4-May	WF	Evaporites	B7, T&W 7
6-May	WF	EXAM 4	

LABS

Date	Topic
Week of 17-Jan	No Lab
Week of 24-Jan	Grain Parameters
Week of 31-Jan	Grain Mineralogy
Week of 7-Feb	Bedform Sedimentary Structures
Week of 14-Feb	Other Sedimentary Structures
Week of 21-Feb	1 LAB Exam
Week of 28-Feb	Fluvial Facies Models and Stratigraphy
Week of 7-Mar	Deltaic Facies Models and Stratigraphy
Week of 21-Mar	Shallow Marine Facies Models and Stratigraphy
Week of 28-Mar	Deep Marine Facies Models and Stratigraphy
Week of 4-Apr	2 LAB Exam
Week of 11-Apr	Diagenesis
Week of 18-Apr	Carbonate Grains
Week of 25-Apr	Carbonate Diagenesis
Week of 2-May	3 LAB Exam

Final Exam: none

***Required course materials:**

- B: Boggs, *Principles of Sedimentology and Stratigraphy* (4th edition or 5th edition)

***Other texts (library reserve):**

T&W; Tucker, M.E. and Wright, V.P. (1990), *Carbonate Sedimentology*.

S: Wolfgang Schlager, (2005), *Carbonate Sedimentology and Sequence Stratigraphy*

Lecture notes: Lecture notes and readings from other texts can be found on Blackboard (<http://courses.utexas.edu>).

Class policy, procedures and grading: Historically, there is a very strong correlation between exam grades and attendance.

- There will be 4 lecture exams; each will consist of multiple-choice questions and will be worth 100 points. The best 3 scores from the 4 lecture exams will constitute 65% of the final class grade.
 - o There are no make-up lecture exams in this class. If you miss an exam, that becomes the exam grade that is dropped. Only one missed lecture exam can be substituted for in this manner.
- There will be four unannounced in-class quizzes. These short quizzes will consist of multiple-choice questions and each will be worth 100 points. The best 3 scores from the 4 unannounced in-class quizzes will constitute 10% of the final class grade.
 - o There are no make-up quizzes in this class. If you miss a quiz, that becomes the quiz grade that is dropped. Only one missed unannounced in-class quiz can be substituted for in this manner.
- There will be 3 laboratory exams worth a total of 100 points. The lab score will constitute 25% of the final class grade.
 - o Make-up lab exams are at the discretion of your TA and will be oral examinations.
 - o LAB ATTENDANCE POLICY – More than 3 absences and the final lab score will be deducted 10 points; an additional 5 points will be deducted for each additional 2 absences.
- There are no extra credit assignments in this class.
- Full letter grades are assigned at the end of the semester based on the distribution of accumulated points (no +/-).

COURSE EXPECTATIONS

• **Laptop Use Policy** – Classroom Laptop use for taking notes related to this course only. Laptop activities unrelated to this course will lead to dismissal from class. **Repeat offenses will result in a filing of a report of academic problems.**

• **Other Electronic Devices (Cell phone, Blackberry, I-Phone, etc.) Use Policy** – **All devices must be turned off during class.** Any use of these devices, including texting, web-surfing, etc. will lead to dismissal from class. **Repeat offenses will result in a filing of a report of academic problems.**

IMPORTANT INFORMATION ON UNIVERSITY POLICIES

The University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Religious Holidays – Religious holy days sometimes conflict with class and examination schedules. If you miss an examination, work assignment, or other project due to the observance of a religious holy day you will be given an opportunity to complete the work missed within a reasonable time **after** the absence. It is the policy of The University of Texas at Austin that **you must notify each of your instructors at least fourteen days prior to the classes scheduled on dates you will be absent** to observe a religious holy day.

Documented Disability Statement - Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities at 471-6259 (voice) or 1-866-329-3986 (Video Phone) as soon as possible to request an official letter outlining authorized accommodations. See Website below for more information: <http://deanofstudents.utexas.edu/ssd/providing.php>

Use of Blackboard

This course uses Blackboard, a Web-based course management system in which a password-protected site is created for each course. Blackboard can be used to distribute course materials, to communicate and collaborate online, to post grades, to submit assignments, and to take online quizzes and surveys.

You will be responsible for checking the Blackboard course site regularly for class work and announcements. As with all computer systems, there are occasional scheduled downtimes as well as unanticipated disruptions. Notifications of these disruptions will be posted on the Blackboard login page. Scheduled downtimes are **not** an excuse for late work. However, if there is an unscheduled downtime for a significant period of time, we will make an adjustment if it occurs close to the due date.

Blackboard is available at <http://courses.utexas.edu>. Support is provided by the ITS Help Desk at 475-9400 Monday through Friday 8 a.m. to 6 p.m., so plan accordingly.

**University Electronic Mail Notification Policy
(Use of E-mail for Official Correspondence to Students)**

All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at <http://www.utexas.edu/its/policies/emailnotify.html>.

In this course e-mail will be used as a means of communication with students. You will be responsible for checking your e-mail regularly for class work and announcements. Note: if you are an employee of the University, your e-mail address in Blackboard is your employee address.