

Sedimentary Rocks (GEO 416M)

Fall 2012

Lecture: MWF 1-2 PM, BUR 108

Instructor: Dr. Wonsuck Kim, delta@jsg.utexas.edu
Office: EPS 3.154, Office hours: M 2-3 PM & F 2-3 PM & by appointment

Teaching Assistant:

Nataleigh Vann (MW 8-10; TTh 10-12): nataleigh.vann@gmail.com
William Betts (MW 10-12; TTh 4-6): wbetts@mail.utexas.edu
Maren Mathisen (TTh 8-10; TTh 2-4): marenmathisen@utexas.edu

Laboratory: Meets in EPS 2.136. There are two laboratory exercises each week. TA will hand out laboratory manual in each session.

Date	Lecturer	Topic	Reading*
29-Aug	WK	1. Class Intro: Overview of Sedimentary Deposits	B (Intro), B6
31-Aug	WK	2. Sediment Production (Weathering)	B3
5,7-Sept	WK	3. Grain Parameters	B1
7,10-Sept	WK	4. Grain Mineralogy	B5
12-Sept	WK	5. Sediment Transport	B2
14-Sept	WK	6. Bedforms	B4
17,19-Sept	WK	7. Other Sedimentary Structures	B4
21-Sept	WK	8. Aeolian Systems	B8.3
24-Sept		Review Session	
26-Sept	WK	EXAM 1 (Ch 1-8)	
28,1-Sept	WK	9. Rivers and Alluvial Fans	B8.2
3-Oct	WK	10. Deltas	B9.2
5,8-Oct	WK	11. Shoreface and Deepwater Sedimentation	B10
10,12-Oct	WK	12. Stratigraphic Concepts	B13, B16
15-Oct	WK	13. Paradox of Drowned Platforms	Kim et al 2012
17-Oct	WK	14. Chemical Sediments	P&S 13 & 14
19,22-Oct	WK	15. Carbonates Mineralogy and Geochemistry	T&W 1.3
24-Oct	WK	16. Carbonate Factories	P&S 12.1
26-Oct		Review Session	
29-Oct	WK	EXAM 2 (Ch 9-16)	
31,2-Oct	WK	17. Carbonate Constituents: Skeletal Grains	T&W 1.2
5,7-Nov	WK	18. Carbonate Constituents: Non-skeletal Grains	T&W 1.4 & 1.9
9-Nov	WK	19. Carbonate Mud & Porosity	T&W 1.7
12,14-Nov	WK	20. Carbonate Classification and Facies	B11, T&W 2
16-Nov	WK	21. Modern Carbonate Facies and Depositional Systems	T&W 4; S 14
19-Nov	WK	22. Carbonate Depositional Systems: Peritidal	T&W 4.3; S 14
21-Nov	WK	23. Carbonate Depositional Systems: Slopes	T&W 2.10
26-Nov	WK	24. Carbonate Depositional Systems: Reefs	T&W 4.5
28-Nov	WK	25. Modern Carbonates	T&W 3
3-Dec		Review Session	
5-Dec	WK	EXAM 3 (Ch 17-25)	

LABS

Date	Topic
27-Aug, 3-Sept	No Lab
10-Sept	1. Grain Parameters
17-Sept	2. Grain Mineralogy
24-Sept	3. Bedform Sedimentary Structures
1-Oct	4. Other Sedimentary Structures
8-Oct	5. Reconstruction of Sediment Transport Conditions in Waller Creek (field trip)
15-Oct	1 LAB Exam
22-Oct	7. Stratigraphic Correlation
29-Oct	8. Core Logging
5-Nov	9. Deep-water Stratigraphy (seismic)
12-Nov	6. Sandstone Diagenesis
19-Nov	10. Carbonate Rocks and Classification
26-Nov	11. Carbonate Rocks in Thin Sections
3-Dec	2 LAB EXAM

Final Exam: None

Required course materials:

- **B: Boggs, *Principles of Sedimentology and Stratigraphy (4th edition)***
- **Hand lens** (10X triplet recommended), a ruler, and colored pencils are required for lab. Both the textbook & hand lens are available at the University Coop.
- **iClicker: version 1 or 2**

***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***
- P&S: Prothero, D.R. and Schwab, F. (2004), *Sedimentary Geology*.**

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 has been a very strong correlation between exam grades and attendance.

- There will be three lecture exams; each will consist of multiple-choice questions and will be worth 100 points. These three lecture exams will constitute 50% of the final class grade.
 - o There are no make-up lecture exams in this class. Please look at the exam schedule above and make sure that you do not miss any exams.
- There will be one or two iClicker questions during each lecture. Questions will be multiple-choice and will be worth 100 points. A correct answer will earn 100 points. An otherwise incorrect answer will still earn 50 points. The iClicker questions will make up 20% of the final class grade.
 - o There are no make-up iClicker quizzes in this class. This is also for improving attendance.
- There will be 2 laboratory exams worth a total of 100 points. The lab score will constitute 30% of the final class grade.
 - o Make-up lab exams will be oral examinations and are at the discretion of your TA.
- LAB ATTENDANCE POLICY – More than 3 absences will result in a 10-point deduction in the final lab score; an additional 5 points will be deducted for each additional 2 absences.
- There are no extra credit assignments in this class.
- Whole letter grades (no +/-) are assigned at the end of the semester based on the following:
 - o ≥ 80 : A
 - o < 80 & ≥ 70 : B
 - o < 70 & ≥ 60 : C

- < 60 & >= 50: D
- < 50: F

COURSE EXPECTATIONS

• **Laptop Use Policy** – Laptops are to be used 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>