

GG 309/W - Sedimentology and Stratigraphy - Spring, 2006

Lecture: TR 10:30 – 11:45 am (POST 703); Lab: W 1:30 – 4:20 pm (POST 703)

Instructor: Dr. Craig Glenn: POST 720A; 956-2200; glenn@soest.hawaii.edu. Office Hours after class or any time!

Teaching Assistant: Adam Johnson: POST 719A, 956-7748, adamgj@hawaii.edu

REQUIRED TEXTS:

- (1) Boggs, Principles of Sedimentology and Stratigraphy/2006, 4th Edition (2001, 3rd Edition is acceptable)
- (2) Bates & Jackson, Dictionary of Geological Terms/Paperback, any edition is acceptable**
- (3) Strunk & White, The Elements of Style/Paperback*, any edition is acceptable

REQUIRED SUPPLIES: 10 or 20X Hand Lens; 1 complete set colored pencils

Course Grade: 3 Midterms + Quizzes 60%, Labs 25%, Term Paper 10%, Class Participation 5+%

Note: This course is designated as Writing Intensive. UHM requires that students must complete all writing assignments to pass the course with a D or better; students who do not complete all writing assignments will fail the course.

Date	Topic	Readings in Boggs, 4 th Edition (3ed Ed. in parentheses when different)
Part I: Principles of Stratigraphy		
Jan. 10 (Tue)	Introduction, discussion of course. Quiz.	p.xvi-xix, 513-520 (3ed Ed. p. xvi-xviii, 581-590)
11 (Wed)	Lab: Microscope Review & Assignments	
12 (Thu)	Stratigraphy Overview; Lithostratigraphy	Chaps. 15 & 12 (3ed Ed. 18 & 13)
18 (Tue)	Lithostratigraphy / Biostratigraphy (Time Scale Quiz)	Chap. 14 (3ed Ed. 17)
19 (Wed)	Lab: Lab: Writing a Scientific Manuscript	
20 (Thu)	Magnetostratigraphy/Oxygen Isotope Stratigraphy	Chap. 13, 15.4 (3ed Ed. 16, 18.5)
24 (Tue)	Oxygen Isotopes/Milankovitch Cycles/Sr. Isotopes	12.4, 18.5 (3ed Ed. 13.4, p. 607-617)
25 (Wed)	Lab: Exercise in Physical Stratigraphy & Correlation	
26 (Thu)	Seismic Sequence Stratigraphy	Handout. Scan Ch. 13 (3ed Ed. Scan Ch. 14 & 15)
31 (Tue)	Sequence Stratigraphy (Film) Approved Paper Topic Due (title, focus, format, 5 References)	As above and Handout
Feb. 01 (Wed)	Lab: Exercise in Physical Stratigraphy & Correlation Continued	
02 (Thu)	Review for Midterm – Come with questions! (5 Paper References Due)	
07 (Tue)	MIDTERM EXAMINATION I: The Various Elements of Stratigraphy	

	08 (Wed)	Lab: Dr. Johanna Resig - Biostratigraphy Practicum	Chap. 14 (3ed Ed. 17)
Part II: Sedimentary Environments and Processes			
	09 (Thu)	Weathering Reactions and Soils 15 Paper References Due w/brief summary of each	Chap. 1
	14 (Tue)	Sedimentary Textures	Chap. 2&3
	15 (Wed)	Lab: Sedimentary Textures	Chap. 2&3
	16 (Thu)	Particle Transport and Bedforms	Chap. 2&4
	21 (Tue)	Primary Sedimentary Structures	Chap. 4
	22 (Wed)	Lab: Sedimentary Structures	
	23 (Thu)	Primary Sedimentary Structures Outline of Paper Due with Reference List	Chap. 4
	28 (Tue)	Alluvial and Fluvial Environments	p. 241-257 (3ed Ed. p. 267-284)
Mar.	01 (Wed)	Lab: Sedimentary Structures	
	02 (Thu)	Marginal Marine Environments Paper Intro Due	Chap. 9 (3ed Ed. Chap. 10)
	07 (Tue)	Shelf Environments	Chap. 10 (3ed Ed. Chap. 11)
	08 (Wed)	Lab: Sedimentary Structures Continued	
	09 (Thu)	Shelf/Deep Marine Environments	As above, Handouts
	14 (Tue)	Deep Marine Environments	As Above, Handouts
	15 (Wed)	Lab: Siliciclastic Shelves Exercise	
	16 (Thu)	Deep Marine Environments (Deep Sea Fan Film) (GG 302 Midterm Today) Paper Discussion Due	
	21 (Tue)	Midterm Review: Come with questions!	
	22 (Wed)	Lab Period: MIDTERM EXAMINATION 2	
	23 (Thu)	Introduction to Siliciclastic Rocks/ Ss Provenance Studies	Chap. 5
	27 – 31	Spring Break (Yippee! GG 305 Mainland Field Trip!)	
Part III: Rocks Can Talk!			
Apr.	04 (Tue)	SS Prov. Rev., Qtz Arenites, Arkoses, Litharenites	Chap. 5
	05 (Wed)	Lab: Siliciclastics Lab 1	
	06 (Thu)	Graywackes and Siliciclastic Diagenesis	Chap. 5
	11 (Tue)	Carbonate Minerals & Carbonate Rock Classifications Paper Draft Due	Chap. 6
	12 (Wed)	Lab: Carbonate Lab 1	

	13 (Thu)	Carbonate Environments and Communities	Chap. 11 (Chap. 12)
	18 (Tue)	Carbonates: Arid vs. Humid Revised Paper Draft Due	
	19 (Wed)	Lab: Carbonate Field Trip to Barbers Point	
	20 (Thu)	Carbonate Diagenesis	Chap. 6.8 (6.9), Handouts
	25 (Tue)	Dolomites	Chap. 6
	26 (Wed)	Lab: SedRock Synthesis Exercise (GG305 project due)	
	27 (Thu)	Dolomites/Evaporites Final Complete Paper Draft Due	Chap. 6 / 7
May	03 (Tue)	When Evaporite Giants Ruled	Chap. 7
	03 (Wed)	<i>The Good, The Bad & The Ugly</i> : Phosphorites Feed the Earth, Notions of Stinking Oceans & Stinky Muds, Stinky Skies Revised Final Paper Due	Chap. 7
	09 (Tue)	FINAL EXAM 9:45 – 11:45	

The following web links are supplemental and may not be used in lieu of hard copies of the required texts

(*www.bartleby.com/141/)

** <http://www.webref.org/geology/geology.htm>

<http://geology.com/geology-dictionary.shtml>

<http://www.geotech.org/survey/geotech/dictiona.html>