

G442: Architecture of sedimentary deposits - Fall, 2011
 Instructor: Marc Hendrix; 243-5278; marc.hendrix@mso.umt.edu

Tentative syllabus and grading scheme

Date	Lecture Topic	<u>Reading</u>
8/29	Introduction to architectural analysis Review of fluid types, shear stress & strain	Reading, Ch. 1 & 2
8/31	Reynold's and Froude numbers; Velocity profiles, Boundary layers; Problem Set 1 assigned	
9/5	NO CLASS - Labor Day Holiday	
9/7	Burst and sweep events; Secondary flow; Flow visualization; Bernoulli's equation, Bed roughness; PROB. SET 1 DUE;	
9/12	Grain movement; Stoke's Law, Sediment transport; LAB 1 assigned	
9/14	Sedimentary textures; Unidirectional flow bedforms	
9/19	Bidirectional flow bedforms; LAB 1 DUE	
9/21	Bedforms in cohesive sediment; Review Lab 1; Lab 2 assigned	
9/26	Sediment gravity flows - <i>Hofmann guest lecture</i>	
9/28	Alluvial processes - <i>Hofmann guest lecture</i>	Reading, Ch. 3
10/3	Alluvial processes, cont.; LAB 2 DUE	
10/5	Lakes; Review lab 2; Lab 3 assigned;	Reading, Ch. 4
10/10	GSA Meeting - Hendrix in Minneapolis Work on Lab 3; get ahead in class reading	
10/12	GSA Meeting - Hendrix in Minneapolis Work on Lab 3; get ahead in class reading	
10/15 (Sat.)	Field Trip - Drummond/Garrison region	
10/17	Lakes, cont.; Aeolian systems; Lab 3 DUE Final project topic due	Reading, Ch. 5
10/19	Clastic coasts	Reading, Ch. 6
10/24	Clastic Coasts, cont.; Review lab 3;	
10/26	MIDTERM EXAM	
10/31	Review midterm exam; Shallow clastic seas	Reading, Ch. 7
11/2	Shallow clastic seas, cont.; Lab 4 assigned	
11/7	Arid shorelines and basins; Marine evaporites Final project abstract due (250 word max)	Reading, Ch. 8
11/9	Arid shorelines and basins; marine evaporites, cont.	
11/14	Shallow-water carbonate environments; Lab 4 DUE	Reading, Ch. 9
11/16	Carbonate environments, cont.	
11/21	Deep sea sedimentation	Reading, Ch. 10
11/23	NO CLASS - THANKSGIVING HOLIDAY	
11/28	Glacial sediments	Reading, Ch. 11
11/30	Glacial sediments, cont.	
12/5	Volcanic sedimentation	Reading, Ch. 12
12/7	Volcanic sedimentation	
12/15 (Th.)	Final Exam at 8:10-10:10AM	comprehensive

Grading Scheme and other commentary:

Grading Scheme:

The grading scheme will be based on the following:

Exams = ~50% (approximately equally weighted at 25% each)

Labs = ~30% (4 at about 8% each)

Problem set = ~5%

Independent Research Paper = ~15%

Penalty for late work: Late assignments drag down the entire class and make it difficult to move forward with the material at a constant pace. Therefore, late assignments will not be accepted. Any assignments turned in after the due date will not be graded and will automatically receive a zero.

Reading: You will be required to do a significant amount of reading for this class. The majority of reading in this class will be from H. G. Reading's *Sedimentary Environments: Processes, Facies and Stratigraphy*. In addition to the reading in Reading, I will assign multiple published papers as required reading throughout the semester.

Field Trip: We will have one field trip to the Drummond/Garrison region on October 15 (Saturday). This all-day field trip is mandatory for all students enrolled in the course unless excused by instructor *a priori*.

Independent Research Project: Each student will be required to formulate an independent research topic (selection due Oct. 17) and develop an independent research paper. The paper length should not exceed 5000 words, excluding references. Following is a list of potential topics; you may certainly elect to discuss something other than the items listed below:

playa lakes

gilbert deltas of Lake Bonneville

non-marine sequence stratigraphy

lahars

lake varves

contourites

paleosols

tidal rhythmites

Final Exam: The final exam for this course will be **Thursday, December 15 from 8:00-10:00 AM**. This is the only time the exam will be given unless you have three exams scheduled for this day, in which case an alternative schedule can be made for the final exam.

Web Page: Over the course of the semester, I expect to transition electronic materials for this class to Moodle (the campus-wide on-line course content delivery system). In the meantime, I will maintain an active web page for this class until the Moodle transition is complete. The (pre-Moodle) web site address for the course is:

<http://www2.umt.edu/Geology/faculty/hendrix/g432/g432.htm>

An important note about academic misconduct:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

All students need to be familiar with the official UM Student Conduct Code. The Code is available for review online at the following web address: <http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf>