

COURSE SYLLABUS
GEOL 2100 – Stratigraphy and Sedimentation
Spring 2017

Instructor Information:

Instructor: Brandon McElroy

Phone: 766-3601

Office: GEO 309

E-mail: bmcelroy@uwyo.edu

Office Hours: Wed 9-10 AM

Wed 3-4 PM

Thu 1-2 PM

Course Information:

Meetings: GEO 216, MWF, 10-10:50

Lab Meetings: GEO 311G, Thu, 11-12:50

1:20-3:10

4:10-6

Website: <http://geoweb.uwyo.edu/geol2100>

Syllabus: <http://geoweb.uwyo.edu/geol2100/Syllabus.pdf>

Prerequisites: GEOL 2010 Mineralogy. This course is an introductory survey of the study of sedimentology and stratigraphy. Topics in quantitative reasoning, physics and chemistry will be reviewed as necessary to cover the relevant materials.

Course Description: Introduces principles of stratigraphy and materials and processes common to sedimentary systems. Laboratory instruction includes study and interpretation of sedimentary rocks, sedimentary structures and stratigraphic techniques. *Field trip required, Saturday, April 8th.*

Objectives/Outcomes/Standards: The objective of this course is to provide access to the empirical and theoretical background that forms the modern basis for evaluating and understanding sediment transport systems, their observable processes, and their geologic products. Students who fully participate and complete this course can expect to be prepared to conduct scientific and professional inquiry into the sedimentary evolution of Earth's surface, its stability, and its dominant processes.

Text(s) and Readings: No texts are required in this course. There is an electronic coursepack that will be available on the website. The following recommendations are excellent sources to augment lectures and can be found in the library.

Sedimentary Geology, D. Prothero & F. Schwab

Sedimentology and Sedimentary Basins, M. Leeder

Required Materials: Although no texts are required, you will need to equip yourselves as geologists for this course. The most important item is a hand lens (10x magnification) this is **absolutely necessary** for the labs and the field trip. You will need a good ruler with metric units and a 3H pencil in the lab and on field trips. Softer pencils smudge and pens make a mess; nobody likes that. These items are all available in the bookstore. You should get a rock hammer (point-tip or chisel-tip) for the field trip, and these can be purchased for ~\$30 at a variety of places (Ace, True Value, Murdoch's, etc.). These materials are fundamental tools of a professional geologist. Most of you are studying for a degree in geology or a closely related field, and skill in the use of these items will serve you for your careers. Now is the time to start.

Course Requirements/Assignments: This course consists of a series of 42 lecture periods that explore the processes and products of the evolution of Earth's surface and shallow subsurface- highlighting the

sedimentary cover. Approximately 10 assignments will be given that focus on concepts given in the weekly lectures. There will be 2 non-cumulative exams during lecture periods covering roughly 4-5 weeks of material each. There will also be a cumulative final exam that incorporates the final portions of class material with all previous material. In addition 4 unannounced quizzes will be given during regular lecture meetings. The schedule of exams is given below along with a list of lecture topics. As part of the course, there will be a **mandatory field trip on Saturday, 4/8**.

Lecture Assignments: Topical assignments will be given approximately once per week. These will help reinforce learning of lecture material, and each will be graded with a weight of 1% of your final grade. They will always be due two class periods after they are assigned at the beginning of class (e.g. if assigned on Wednesday, then due the following Monday). No late assignments will be accepted beyond those exceptions allowed by university policy. I will always answer questions about the homework before they are due.

Lecture Quizzes: Four unannounced quizzes will be given during lecture periods throughout the semester. Quizzes will be based on recent material and the geologic timescale. Missed quizzes cannot be made up except those due to approved University absences.

Lecture Exams: Two exams will be given during regular lecture hours. Notes, calculators, rulers, etc. will not be needed nor allowed in exams. The 2 non-cumulative exams are worth 30% of your grade. Whichever exam you score higher on will account for 17%, and the other will account for 13%. There are good days and bad days for us all... I want to help you average them out. With the exception of approved university absences, missed exams cannot be made up.

Lab Overview: Along with lectures are weekly laboratory meetings that will help you develop skills in observing, describing, and interpreting sediments and strata. Lab exercises will be assigned each week, and they will be due at the beginning of the lab meeting one week after they are assigned. Because a large majority of the lab material builds upon mastery of previous topics, it is very important to keep up with the lab exercises, and no late lab exercises will be accepted beyond those exceptions allowed by university policy. In addition the lab will be open and materials will be accessible during normal hours except when other classes and/or lab sections occupy the room. To avoid conflicts and difficulty keeping up, do not put off completing your lab until the last minute. There will be two exams given during the lab meetings.

Grading Standards:

Grades will be based on exams, lab exercises, and quizzes as follows.

Final Exam:	20%
Section Exams:	30% (17% +13%)
Quizzes:	10% (4 x 2.5%)
Lecture Assignments:	10% (10 x 1%)
Lab Exercises:	18% (12 x 1.5%)
Lab Exams:	12% (2 x 6%)

Final grades will be assigned on a standard scale based on weighted (and possibly curved) scores from exams, assignments, quizzes, and lab:

90-100 A; 80-90 B; 70-80 C; 60-70 D; <60 F

Only in very exceptional circumstances will incomplete grades be allowed, and all coursework must be completed in accordance with university policy to receive a passing grade.

Attendance/Participation Policy:

University sponsored absences are cleared through the Office of Student Life. Lectures form the primary content of the course, and therefore attendance and participation is mandatory. If you must be absent, please have a university sponsored absence, or see me first (e.g. if you are to attend a conference, etc.). In general material cannot be made up for absences.

Academic Honesty:

UW Regulation 6-802. The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated [from the University Catalog]. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head, or dean. Other University regulations can be found at http://www.uwyo.edu/generalcounsel/_files/docs/uw-reg-6-802.pdf

Disability Statement:

If you have a physical, learning, sensory or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 330 Knight Hall.

The instructor may make changes to the syllabus as the course proceeds. If necessary, these changes will be announced in class. Substantive changes made to the syllabus shall be communicated in writing to the students. The most up-to-date syllabus can always be found online <http://geoweb.uwyo.edu/geol2100/Syllabus.pdf>

Lecture Topics

Weathering
Sediment Transport
Glacial Environments
Fans
Rivers
Deltas
Coasts
Deepwater Systems
Aeolian Systems
Chemical Sediments
Carbonate Chemistry
Carbonate Constituents
Platforms
Peritidal Environments
Evaporites
Carbonates through time
Sedimentary Cycle
Other Stratigraphy

Lab Topics

Siliciclastic Materials
Siliciclastic Rocks
Invertebrate Fossils
Carbonate Constituents
Carbonate Rocks
Rivers
Deltas
Deepwater
Measuring Strata
Interpreting Strata

Exam Dates

Lecture Exam 1	Fri, Feb 24th
Lecture Exam 2	Fri, April 7th
Lab Exam 1	Thurs, March 9 th
Lab Exam 2	Thurs, May 4th

Field Trip

Saturday, April 8, 8 AM – 5 PM

Final Exam

Wednesday, May 10th, 10:15 AM – 12:15 PM, GEO 216