

COURSE SYLLABUS
GEOL4420 – Sedimentary Rocks
Fall 2018

Instructor Information:

Instructor: Brandon McElroy

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Office: GEO 309

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Office Hours: Wed 9-10 AM

Wed 3-4 PM

Thu 1-2 PM

Course Information:

Meetings: GEO 311G, MWF, 8-8:50

Lab Meetings: GEO 202, T, 12:10-1
R, 12:10-1

Prerequisites: GEOL 2100 Stratigraphy and Sedimentation, GEOL 2020 Petrology. This course covers aspects of the chemical and physical processes of sedimentary environments and their mathematical representation. Beyond the content of GEOL 2020 and GEOL 2100, the preparedness to examine detailed scientific concepts at the 4000-level is expected.

Course Description: Encompasses origin, classification and interpretation of sedimentary rocks including sandstones, mudrocks and carbonates. Topics also include depositional environments and basin analysis.

Field trip required: Friday, September 14th – Sunday, September 16th.

Objectives/Outcomes/Standards: The objective of this course is to develop the laboratory and field methodologies to explore the geological histories and processes recorded by sedimentary rocks. We will read and interpret scientific literature, develop intuition to explore current hypotheses in sedimentary geology, analyze stratigraphic data within these contexts, and learn to prepare scientific manuscripts in the format of standard peer-reviewed journals.

Text(s) and Readings: No texts are required in this course. There is an electronic coursepack that will be available on WyoCourses. Readings will include a wide range of scientific literature regarding depositional environments and their interpretation from the stratigraphic record. We will read and discuss papers from prominent international scientific journals on a weekly basis.

Required Materials: Although no texts are required, you will need to equip yourselves as geologists for this course in order to conduct field work. The most important items are a hand lens (10x magnification), a rock hammer (point-tip or chisel-tip), and materials for taking notes. These materials are also the 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.

Course Requirements/Assignments: This course consists of a series of 42 lecture periods and a weekly lab period. There will be lectures to introduce themes, discussion of weekly readings, and field and lab work to apply the concepts from lecture & discussion. The culmination of this course will be individual write-ups (20 pages with figures and references) that describe the field work, its analysis and interpretation. There will also be a cumulative final exam.

Reading Assignments: Each student will be responsible for preparing summaries and leading discussions of two readings. These will be formally graded based on the presentation of the summaries and on the outcomes of the discussions

Manuscript: A principle graded exercise for this course will be preparation of a manuscript in standard scientific format that brings together the background, methods, analysis and results, discussion, and conclusions of each student's field work. The analysis will be discussed as a group during the second half of the semester, but each student is responsible for their own, individual drafting of a manuscript. A first draft will be due approximately two weeks before the last day of classes, and a final draft will be due on the last day of class.

Final Exam: There will be one exam, the final exam. It will be cumulative and consist of no more than 4 essay style questions with possible mathematical/theoretical derivations and calculations.

Lab Overview: Along with lectures are weekly laboratory meetings that will help you develop skills in observing, describing, and identifying 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 an exam given during the last lab meeting.

Grading Standards:

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

Final Exam:	15%
Lab Assignments:	30% (10 x 3%)
Manuscript:	35% (15% + 20%)
Readings:	10% (2 x 5%)
Lab Exam:	10%

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.