



GEOS4534: Sedimentology & Stratigraphy

Fall 2020, Section 101

Lecture: M W F 9:00-9:50 AM | **Lab:** W 3:00-5:00 PM | **Location:** BO 125

Course Description

Analysis of depositional environments based on the physical and chemical formation of sediment, the physics of sediment transport, and post-depositional diagenetic changes. Also includes the study and interpretation of stratified sedimentary rocks, including their identification, description, and modes of origin. Fundamental principles of lithostratigraphic and sequence stratigraphic analysis, mapping, and correlation are also presented.

Course Goals

Sedimentary rocks are rich not only in economic resources such as oil and gas, but contain many details about the history of the Earth. In lecture and lab, you will learn how these rocks are formed and how to interpret the paleoenvironmental, stratigraphic and tectonic data contained within them. By the end of the course, you will be able to describe and identify sedimentary rocks in the lab and field, interpret sedimentary and stratigraphic data, and be able to express your understanding of the topic through different media. You will think critically, manage projects, work in groups, and become a strong writer and communicator. These skills are important not only in geology, but in any career.

Instructor Information

Professor: Anna M. Weiss, Ph.D.
Please call me: Anna; Dr. or Professor Weiss (Pronounced like “Rice” but with a “W”)
Pronouns: (she/her)
Email: anna.weiss@msutexas.edu (expect a response in 24-36 hours)
Office Location: Office hours will be held virtually on Zoom
Office Hours: M 3 - 4 PM ; T 2-4 PM ; W & R 11 AM - 12 PM ; or by appointment (email me!)
Ask me about: anything related to the class, doing STEM research or outreach, graduate school, geology or environmental science careers

I do my best to have an open-door policy and strongly encourage students to come see me with questions even if it is not my office hours. If you are having trouble with a concept or a section of the class please come see me before it becomes a bigger problem.

Student responsibilities

1. In order to pass this course, students will be expected to develop an understanding of and familiarity with sedimentary geology and stratigraphy, including processes, rock identification, and application.
2. Class participation: This course is not a passive lecture course. I will use a variety of classroom activities, student presentations and discussions to ensure students take an active role in learning. Students are expected to participate to the best of their ability. Additionally, students are expected to be respectful of one-another in their interactions in the classroom, lab and on-line.
3. Class preparation: The lectures, discussions, and activities for this course are designed to build on and synthesize knowledge that students glean from the assigned texts, primary literature readings, and assignments. These discussions and activities will be more meaningful when everyone shows up prepared. Students are expected to complete readings and assignments ahead of class.
4. Group projects: In lab and lecture, there will be assignments where you will work as a team. Please be a good team-mate, complete assigned tasks and help others when needed.
5. If you are struggling in class, please ask for help! If you cannot attend office hours, email me to make an appointment.

Instructor responsibilities

1. To provide an inclusive, equitable environment conducive to active learning and discussion.
2. To guide students in the process of scientific inquiry.
3. To enhance students' understanding of sedimentology and stratigraphy.
4. To assess students' knowledge through TopHat questions, assignments and exams, and to provide timely feedback on assessments.

Course Materials

Required Text

All required reading will be posted as a PDF on D2L. This includes a PDF of *Principles of Sedimentology and Stratigraphy – 4th ed.*, by Sam Boggs Jr.

For further reading in Sedimentology, I recommend:

Sedimentary Environments: Processes, Facies and Stratigraphy, by Harold Reading

For further reading in Stratigraphy, I recommend:
Principles of Sequence Stratigraphy, by Octavian Catuneanu

All books are available in the library course reserves except for Catuneanu which is a PDF on D2L.

Lecture

Pencil/pen

Notebook (or laptop to take notes)

All assigned reading should be done in advance of class. Bring your notes, and be prepared for discussion!

Lab

Pencil

Face Shield

Hand Lens

Grain Size Card

Tophat account

This course will also use TOP HAT (<https://tophat.com/>), an app that will foster in-class participation, discussion, and knowledge testing. The app is available for iPhones, Android, flip-phones, and can be accessed via any computer or tablet.

Desire-to-Learn (D2L)

All readings, assignments, etc. will be announced in class and posted on D2L. Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Grading

Table 1: Points allocated to each assignment

| Assignments | Percentage of grade |
|-------------------------------------|---------------------|
| Quizzes | 10% |
| Class Participation and Discussions | 10% |
| Exam 1 | 10% |
| Exam 2 | 10% |
| Final Exam | 20% |
| Lab Overall Grade | 40% |

Table 2: Total points for final lab grade

| Assignments | Percentage of grade |
|---------------|---------------------|
| Labs | 60% |
| Participation | 10% |
| Final Project | 20% |

Table 3: Total points for final grade.

| Grade | Points |
|-------|---------------|
| A | 90 + % |
| B | 80 to 89.9% |
| C | 70 to 79.9% |
| D | 60 to 69.9% |
| F | Less than 60% |

Homework

You will occasionally be assigned in-class assignments. In the event that these are not finished by the end of the class period, the assignment will become homework and will be due the following class.

Metacognition “Quizzes”

After each class, there will be a quick quiz on D2L for you to fill out within 24 hours. These quizzes are more like reflections on the class for the day, including what you learned and found interesting, what concepts you are struggling with, and whether you have any questions remaining. Research has shown that metacognition quizzes help students retain information, and will help me monitor the class’

progress and any quickly address any misunderstandings. The sooner you fill it out, the more helpful it is for you! These will be factored into your class participation and discussion grade (3/10 points).

Quizzes

Three quizzes will be given through the semester. Quizzes may be long/short answer, fill-in-the-blank, diagram labeling, etc, with occasional few multiple choice questions. Quizzes will begin at the start of the class period and will take approximately 15 minutes. The quiz dates are as follows:

Friday 9/25; Wednesday 10/14; Monday 11/16

Exams

Two exams will be given during the semester. The exams will be cumulative and will generally be short and long answer, with some diagram labelling, drawing or other task. Do not expect a multiple-choice test. Exams will last the length of the class period. The exam dates are as follows:

Exam 1: Friday 10/23; Exam 2: Wednesday 12/2

Exam scores will be returned with the exams the week following the exam. If you feel there was an error made in the evaluation of your exam, **you must bring this up within 10 days of the return of the mid-term exams or immediately in the case of the last exam.** If you wish to check on your current lab, quiz, and exam points at any point during the semester, check the D2L website or come to office hours. It is preferred that you email me and indicate you would like to see this summary before meeting so we can have the information ready to go.

Final Exam

The final exam will be cumulative. It will take place on Monday 12/7 from 8:00 – 10:00 AM. The exam will be a combination of short and long answer, with some diagram labelling, drawing or other problem solving. Do not expect a multiple choice test.

Exam scores will be returned with the exams the week following the exam. If you feel there was an error made in the evaluation of your final exam, **you must bring this up immediately.**

Late Work

Normally, late work would be accepted but with a 5 point penalty per day it is late. However, given COVID-19 I am going to be more lenient and am willing to work with students on late work, especially given extenuating circumstances. If you are having trouble keeping up or need extra time on an assignment, please contact me as early as possible.

Make Up Work/Tests

I am willing to be flexible (within reason) with make-up work given COVID-19. If you need to miss work, quizzes or exams due to extenuating circumstances, please see me as soon as possible to discuss a new deadline.

Extra Credit

I do not accept individual extra credit assignments. However, I will provide several opportunities for everyone to get extra credit throughout the semester (such as in class, on exams, as take-home assignments, for pertinent seminars) and will provide ample advanced notice of the assignments.

Instructor Class Policies

Attendance

Attendance will not be taken, however there will be daily in-class quizzes and discussions that will make up 10% of your final grade. You will be able to participate in lecture as well these quizzes and discussions virtually, so if you are not feeling well or cannot physically attend lecture for another reason, I urge you to stay home and participate virtually without fear of penalty.

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. Please notify me at least fourteen days prior to the classes scheduled on dates you will be absent to observe a religious holy day.

Cell phones and Computers

Cell phones and computers may be used in specific contexts, such as when using TopHat or taking notes, but I ask you to respect myself and your fellow students and not text, use social media, email or other non-class related websites. If you are found doing this during lecture or lab, a warning will be given, then you will be asked to leave.

Food and Drink

Food and drink will not be allowed in lecture space or lab. Please refrain from eating or drinking during this period, or step outside if absolutely necessary.

COVID-19, Social Distance and Hygiene

This semester will look different from others. When in the building, you are required to wear an approved face covering. You will also receive a face shield for when you need to work in closer groups. This is your shield for the semester, please take care of it and keep track of it.

When you arrive at the classroom, do not crowd at the door as you wait for the previous group to dismiss. There will be hand sanitizer, as well as hand soap and water, available in the front of the class for you to clean your hands as you arrive. Again, be mindful not to crowd at the sink or sanitizer station.

In lab, the goal is to complete the activity and leave in the allotted time, so please come prepared to work, and leave your phones in your pockets as we need as few distractions as possible. As you work, please be aware of your surroundings and try not to crowd around one another. After you finish the activity, you will sanitize your workspace and leave.

If you are feeling ill or have been in contact with someone with coronavirus, please do not come to class or lab. Email me as soon as possible to coordinate virtual or make-up work.

Services for Students With Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

Academic Misconduct Policy & Procedures

[Student Handbook 2019-20](#)

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

Refer to: https://msutexas.edu/student-life/_assets/files/handbook.pdf

Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor. Modalities of instruction may change given developments in COVID-19. Instructor will inform students in writing of any changes to be made prior to making them.