



## **GEOS3534: Invertebrate Paleobiology**

**Spring 2021, Section 101**

**Lecture:** M W F 9:00-9:50 PM | **Location:** BO 125 or **Zoom ID:** 923 7786 0651

### **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](mailto:anna.weiss@msutexas.edu) (expect a response in 24-36 hours)  
**Office Location:** Office hours will be held virtually on Zoom ID: 941 4881 9584  
**Office Hours:** M & W 11 AM – 12 PM; T 3- 5 PM; R 1-2 PM; 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 strongly encourage students to come to me with questions during office hours and/or by email. If you are having trouble with a concept or a section of the class, please see me before it becomes a bigger problem.

### **Course Description**

An introduction to quantitative, theoretical, and descriptive invertebrate paleobiology. Topics include speciation, extinction, paleoecology, biostratigraphy, and systematics. Laboratory emphasizes hands-on analysis of fossil specimens and applied biostratigraphy.

### **Course Goals**

Paleontology is the study of the history of life and ancient environments. Historically, paleontologists focused on the description and classification of fossil species. Recently, paleontologists have begun to apply rigorous quantitative techniques to analyze the fossil record. Fossils are now frequently used in interdisciplinary studies to answer a variety of questions such as the nature and tempo of evolution, divisions of geological time, and how organisms respond to climate change events. This class will introduce students to the diversity

of life in the past, important questions and concepts in paleontology, and the importance of a quantitative, interdisciplinary approach to this exciting subject.

My goal is for students to learn how to identify fossil organisms (or at least know where to go to figure out the taxa of a fossil) as well as *why* and *how* we use the fossil record to solve academic and applied problems. Specifically, students will leave this course having learned the following:

1. The geological and biological significance of fossils
2. The major lineages of organismal life and their place in geological history
3. The major events and long-term trends in the history of life
4. Critical issues in evolution and ecology
5. The important roles of artifacts and biases when evaluating data, analytical methods, and scientific conclusions
6. The application of quantitative paleontological techniques such as cladistics and morphometrics

### **Student Responsibilities**

1. In order to pass this course, students will be expected to develop an in-depth understanding and familiarity with invertebrate paleobiology and paleoecology.
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.
3. Class preparation: The lectures, discussions, and activities for this course are designed to build on and synthesize knowledge that students glean from the textbook, 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: The final project will be a group effort and practice for working in a team. Please be a good teammate, complete assigned tasks and help others when needed. Failure to work with your teammates will result in a failing grade for the project.
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 environment conducive to active learning and discussion.
2. To introduce students to the process of scientific inquiry.
3. To enhance students' understanding of paleontology, the fossil record and the history of life.
4. To assess students' knowledge through Mentimeter questions, assignments and exams, and to provide timely feedback.

## Course Materials

### Required Text

- There is no required textbook for this class. All required readings will be posted on D2L. All assigned reading should be done in advance of class. Bring your notes, and be prepared for discussion! If assigned for the day, bring a printed or virtual copy of activity.

### Lecture

Pencil/pen

Notebook (or laptop to take notes)

### 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%
Exams	20%
Final Exam	20%
Lab Overall Grade	40%

Table 2: 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 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 unless otherwise indicated by the instructor.

## In-class quizzes

Specific questions will be discussed in class each day. To ensure participation from students no matter how they attend class, the questions will be posted as quizzes on D2L. Completing these quizzes (regardless of whether you attended synchronously, in-person, or not) will account for your Class Participation and Discussions grade (up to 10 points per day). They can be completed as we go through class, up to 36 hours after.

## Quizzes

Four 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 be open-book and take-home. They will open after class on the listed date and stay open for ~2.5 days. Quizzes should take approximately 20 minutes to complete. The quiz dates are as follows:

*Monday 1/25;      Monday 2/8;      Wednesday 3/10;      Monday 3/29*

## 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: Monday 2/22;      Exam 2: Monday 4/12*

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 (or your TA) 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 Wednesday 4/28 from 10:30 am -12:30 pm. 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. This needs to be done in advance of the due date.

### **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. This needs to be done in advance of the due date.

### **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 must 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 completing quizzes 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. 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.

If you are feeling ill or have been in contact with someone with coronavirus, please do not come to class or lab. Email Dr. Weiss and your TA 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

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). Specifically,

*"a. The term "cheating" includes, but is not limited to:*

*(1) use of any unauthorized assistance in taking quizzes, tests, or examinations;*

*(2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;*  
*or*

*(3) the acquisition without permissions, of tests or other academic material belonging to a member of the university, faculty, or staff.*

*b. The term "plagiarism" includes, but is not limited to, the use by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.*

*c. The term "collusion" means collaboration with another person in preparing work offered for credit if that collaboration is not authorized by the faculty member in charge." From [Student Handbook 2019-20](#)*

I do not tolerate academic dishonesty of any kind. If you are caught cheating, colluding or plagiarizing, you will be given a zero on the assignment and a written warning. If you are caught twice, you will receive an F in my class.

Additional guidelines on procedures in these matters, including appeals, 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.