Course Syllabus: Physical Geology - Online

McCoy College of Science, Mathematics, and Engineering
GEOS 1134 Section MX1
Summer Mini 2025

Contact Information

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Course Description

This course is a lecture-based overview of the Earth, its mineral and rock components, and the variety of surface and subsurface physical processes that have operated over Earth's long history. Lectures are limited and cover only the most essential aspects of the 24 topics that comprise this course. These topics cover various components of the Earth, including minerals, igneous rocks, sedimentary rocks, and metamorphic rocks and their associated mineral and energy deposits. We will also look at the various surface processes that largely shape the Earth's surface, such as weathering, erosion, and mass movement due to water, wind, and gravity. We will examine the subsurface processes that affect us, such as earthquakes and volcanic activity, and their associated hazards. The theory of plate tectonics that was put forward as a hypothesis in the early 1900s and became widely accepted about 50 years ago will be examined.

The Lab course includes projects ranging from mineral and rock identification (using pictures and videos to display properties) to using and understanding maps to studying key surface processes such as mass wasting (landslides and rock falls), the impact of water as an agent of weathering and transport medium, and the impact of geological processes such as earthquakes and volcanoes.

Course Overview

This course will be presented in a fully online format. Lectures, labs, and other assignments will be posted in D2L. Lectures include voice-over video files and PowerPoint Slides. Roughly 50-minute lectures will be posted in D2L for you to watch. The PowerPoint slides used in the lectures will also be posted. ***Please note that more information is given in the videos than in the slideshows.** The slideshows are provided to help you follow along, not to replace the video lectures. Lab exercises may include slideshows, videos, and/or prerequisite

readings depending on the needs of the individual lab. All exams and quizzes are administered online through D2L. See the course schedule at the end of the syllabus for further information about deadlines. If you have any questions about the course schedule, please contact the instructor by email or during office hours.

This course is asynchronous. You may work ahead of the course schedule whenever possible, although exams and quizzes will be open on set days.

Textbook & Instructional Materials (not required)

No textbooks will be required for this course. Some required supplemental readings may be provided in D2L as PDFs. If you wish to purchase a copy of the textbook used in this course for supplemental reading and reference, you are welcome to do so. Below are the textbooks that will be used in this course.

Tarbuck, Edward J., and Lutgens, Frederick K. 2016. Earth: An Introduction to Physical Geology, 12th edition. ISBN: 9780134074252

Cronin, Vincent S., and Tasa, Dennis G. 2017. Laboratory Manual in Physical Geology, 11th edition. ISBN: 9780134610931

Grading

The formal grade for this course is determined by your completion and performance on lecture exams, lab activities, lab quizzes, and major projects. Assignments are graded on a point-based system, with 55 points being equivalent to one letter grade (or 10 percent out of 100). The lowest lab activity will be dropped in this course. All assignments will be graded after their due date (so even if you finish early, it will not be graded sooner).

Table 1: Points allocated to each assignment type. Details about each assignment type will be described below.

Assignments	Points
Lecture Exams (3)	150
Lab Activities (11/12)	220
Lab Quizzes (3)	90
Documentary Project	30
Research Projects (2)	60
Total Points	550

Table 2: Total points for final grade.

Grade	Points
A	495 and above
B	440 to 494
C	385 to 439
D	330 to 384
F	Less than 330

Lecture Exams

There will be three noncumulative lecture exams throughout the semester. They will be worth 50 points each. The exams make up a total of 150 points, or about 27 percent of the total grade. These exams will be a mix of multiple choice and ordering of events. Tests will have an hour-long time limit, and the number of questions will be based on perceived difficulty and length (ordering events typically require a longer time than multiple choice). You may not take the exam with multiple people or share answers. All exams will be online through D2L. Exams will be open for about one week. Lecture exams are due by 11:59 pm on the dates indicated on the last page of this syllabus.

Lab Activities

The physical geology course includes a lab component. All labs will be open to complete on the students' own time. Lab activity materials will be posted in D2L. Lab activities are due by 11:59 pm on the dates indicated on the last page of this syllabus.

Labs are submitted through a quiz on D2L or a D2L Dropbox, depending on the specific activity. The quizzes are not timed, but they are due by 11:59 pm on their scheduled due date. Lab activities are completed based on the speed you work at. Because in-person labs are scheduled to take two hours to complete, plus possible homework, do not be surprised if your labs also take two or more hours to complete.

Lab activities are worth 20 points each. Twelve labs will be given, but the lowest lab grade will be dropped.

Lab Quizzes

Three lab quizzes will be given to test your understanding of the lab activities. The first lab quiz will cover mineral specimens (labs 1 through 3). The second lab quiz will cover rock specimens (labs 4 through 6). The final lab quiz will cover geologic processes, mapping techniques, and dating of rocks (labs 7 through 12).

The quizzes will be multiple choice. Each quiz is worth 30 points. Lab quizzes will be timed based on the number and difficulty of the questions. Lab quizzes will be open for about one week. You may not take the quiz with multiple people or share answers.

Documentary Project

There are many sources of scientific information available beyond the classroom. With the large number of streaming services and online video platforms available, this project is designed to broaden students' perspectives on geologic processes. You will choose which documentary you wish to watch, but it must have scientific merit and be related to a geologic topic discussed in this course.

This should be at no extra cost to you. You will watch one geology-focused documentary and write a summary describing what you have learned. The documentary must be longer than 40 minutes in length. Your summary should be submitted as a Word document or PDF and written with Times New Roman, 12-point font, and double-spaced. Further details will be provided in D2L. The project will be worth 30 points.

Research Projects

There will be two research projects done over the course of the semester. The first is to describe two rocks. Because this course is fully online, there are no physical specimens for the students to touch and observe. To give you a more hands-on experience, you will classify two different rocks or minerals that you find based on the information you have learned in this class – specifically the lab portion. These can be rocks you own or found somewhere outside. You will prepare a PowerPoint slideshow, where you will describe the specimens and show pictures you take of the specimens. The rock must be naturally occurring. It cannot be concrete, asphalt, linoleum, or any other man-made material. This project is expected to be completed after lab 6.

The second research project will be to describe a geologic process. This can be any process covered in the course, or any geologic process not covered in the course. You will prepare a PowerPoint slideshow describing and showing examples of the process you choose. This project is expected to be completed by June 5, but you are encouraged to work on it throughout the semester.

The research projects are worth 30 points each, for a total of 60 points (about 11 percent of your total grade).

Extra Credit

Extra credit assignments will be given to the entire class, not individual students. Extra credit assignments may be given as the semester progresses at the discretion of the instructor. If the extra credit assignment is not completed by the due date, no extra credit will be given.

There is one planned extra credit activity called "Introduce Yourself Extra Credit." You will see details in D2L.

Late Work

Missed labs and exams may be made up with paper-documented excuses.

Late work will be accepted for any lab activity or project, but each assignment's highest possible grade will drop 10% for each day past the due date. E.g. if an assignment is turned in one day late, the highest grade that can be made is 90%, but if the assignment is graded as an 85%, the grade will not be changed.

For exams and quizzes, if you do not have a paper-documented excuse, you make take the test for up to 50% or the lowest grade made by students who completed the exam on time – whichever is lower. This opportunity will be open for a week after the test's original due date. After that, the highest possible grade for the text will drop 10% for each day past the new due date.

Make Up Work/Tests

Labs, quizzes, and exams can be made-up with a legal, paper-documented excuse. Whenever possible, make-up work should be arranged before the deadline. When given make-up work, the instructor will give you a new deadline based on what was missed. ***No make-up work (lecture or lab) will be given beyond 10 days past the original deadline.**

Because the documentary and research projects will be open for most of the semester, no make-up work will be given.

Important Dates

Last Day to drop with a grade of "W:" May 28 at 4:00 pm
Refer to: Drops, Withdrawals & Void

Instructor Class Policies

Because this class is asynchronous, you are not expected to watch lectures or participate at a designated time during the week. However, all assignments, quizzes, and exams are expected to be completed by their deadlines. You are expected to finish the required readings and lectures before you complete these assignments, so plan accordingly.

If you believe there is an error in either your final grade or an individual assignment grade, please reach out. I do not mind recalculating grades or confirming that an assignment is graded correctly. The only way to bump your grade is through extra credit given to the whole class.

I understand that life is chaotic. If there are any issues, make sure to reach out to me. Exceptions to late work and make-up work are done on a case-by-case basis, and assignments may be difficult. I encourage you to ask questions if you are confused or need help. Remember, the more you communicate with me, the easier I can work with and help you.

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 to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. Office of Student Conduct

The use of any artificial intelligence (AI) in completing course assignments is NOT allowed. AI in this sense is any technology that summarizes, writes, or answers questions on its own. Recent court rulings have allowed lawsuits to go forward against Chat GPT and other AI operators because it directly plagiarizes the use of others. College is about you learning to write, you developing your voice, and you learning how to process, summarize, and properly cite information. Any use of AI is considered a violation of this academic honesty policy.

If a student is caught cheating, colluding, plagiarizing, or using artificial intelligence on an assignment the grade for that assignment will be a zero. Multiple violations could result in a failure of the course.

Desire-to-Learn (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.

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential by the faculty member. In those classes where attendance is considered as part of the grade, the instructor should so inform students of the specifics in writing at the beginning of the semester in a syllabus or separate attendance policy statement. An instructor who has an attendance policy must keep records on a daily basis. The instructor must give the student a verbal or written warning prior to being dropped from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. **Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into D2L**.**

Student Handbook

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

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this Moffett Library webpage to explore these resources and learn how to best utilize the library.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

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.

College Policies

Campus Carry Rules/Policies
Refer to: Campus Carry Rules and Policies

Smoking/Tobacco Policy
College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated smoking areas at each location.

Alcohol and Drug Policy
To comply with the Drug-Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibit the unlawful possession, use, or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state, and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Campus Carry
Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License-to-carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit Campus Carry.

Active Shooter
The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by the MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit MSUReady – Active Shooter. Students are encouraged to

watch the video entitled "*Run. Hide. Fight.*" which may be electronically accessed via the University police department's webpage: *"Run. Hide. Fight."*

Grade Appeal Process

Grade appeals should first be discussed with your instructor following appropriate procedure. Students who wish to appeal a grade should consult the Midwestern State University Undergraduate Catalog.

Notice
Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

Course schedule details are given on the next three pages. Due to this course being fully asynchronous, the first table lists a recommended timeline to complete lectures. The second table lists due dates for lab assignments, quizzes, projects, and exams.

It is highly recommended that you work ahead whenever possible.

Notice
Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor. Any changes will be communicated to the class through D2L. Please make sure to pay attention to course news. You can also allow email notifications through D2L, so you stay up to date to any changes.

Lecture Course Recommended Schedule

Day	Lecture Topics
Day 1 **5/19** **(Monday)**	<u>Lectures 1-5:</u> Course Intro What is Science Geology Overview Earth as a System Internal Structure of the Earth
Day 2 **5/20** **(Tuesday)**	<u>Lectures 6-9:</u> The Basics of Minerals Minerals, the Details Plate Tectonics Introduction Plate Tectonics Continued
Day 3 **5/21** **(Wednesday)**	<u>Lectures 10-12:</u> Igneous Rocks Magmas and Intrusive Igneous Activity Volcanoes
Day 4 **5/22** **(Thursday)**	<u>Lectures 13-15:</u> Weathering and Soil Formation Deposition and Sedimentary Environments Sedimentary Rocks
Day 5 **5/23** **(Friday)**	<u>Lectures 16-18:</u> Metamorphism Metamorphic Rocks Time and Geology
Day 8 **5/26** **(Monday)**	**No classes – Memorial Day**
Day 9 **5/27** **(Tuesday)**	<u>Lectures 19-21:</u> Time and Geology II Crustal Deformation Earthquakes

Lecture Course Recommended Schedule (Continued)

Day	Lecture Topics
Day 10 5/28 (Wednesday)	Lectures 22-24: Earthquakes II Earth's Interior The Ocean Floor
Day 11 5/29 (Thursday)	Lectures 25-27: Running Water Groundwater Shorelines
Day 12 5/30 (Friday)	Lectures 28-30: Mountains Mass Wasting Deserts
Day 15 6/2 (Monday)	Lectures 31-33: Glaciers Mineral Resources Energy Resources
Day 16 6/3 (Tuesday)	Lectures 34-37: Energy Resources II Climate Change Climate Change II Brief History of Earth
Day 16 6/4 (Wednesday)	Catch up on any lectures or assignments
Day 17 6/5 (Thursday)	Last day of classes Catch up on any lectures or assignments

Course Due Dates in Chronological Order

The following table lists the due dates of each assignment in the course. All assignments will be due at 11:59 pm on their listed deadline. Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Due Date	Assignment
Tuesday, May 20	Lab 1. Mineral Identification Part I
Wednesday, May 21	Lab 2. Mineral Identification Part II
Thursday, May 22	Lab 3. Mineral Identification Part II
Friday, May 23	Lab 4. Igneous Rocks Exam 1
Saturday, May 24	Lab 5. Sedimentary Rocks Documentary Project Lab Quiz 1
Tuesday, May 27	Lab 6. Metamorphic Rocks
Wednesday, May 28	Lab 7. Dating Geologic Events
Thursday, May 29	Lab 8. Topographic Maps
Friday, May 30	Lab 9. Geologic Maps Exam 2
Saturday, May 31	Lab 10. Earthquakes Research Project 1: Find Two Rocks Lab Quiz 2
Monday, June 2	Lab 11. Water
Tuesday, June 3	Lab 12. Dry Environments
Thursday, June 5	Research Project 2: Geologic Processes Exam 3 Lab Quiz 3