

Course Syllabus Final: Historical Geology Online
McCoy College of Science, Mathematics, and Engineering
GEOS 1234 Section X10
Fall 2022

Contact Information

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Course Instructional Mode

This course is presented fully online. All lectures and course reviews are in D2L as voice-over .mp4 files and standard printable .pdf files. All Lab Exercises Lectures, Course Reviews, Homework, and Self-Assessments are provided in D2L. Other course materials that may be used (e.g. videos) will be posted in D2L. All exams are administered online using D2L. All assignments must be submitted to the appropriate D2L dropbox. If you have questions that are course schedule or content related please contact the instructor by email. You may work ahead of the course schedule given in this document as your schedule permits. There are penalties, however, should you fall behind schedule (see grading section for more information).

Note that all D2L-related issues and technical problems should be handled via D2L support at this link: <https://msutexas.edu/distance/online-courses.php>

Course Description

A Lecture-based overview of the geological and biological history of the Earth. Introductory topics include an overview of "science" in the broad sense, a "big" picture overview of geological materials (minerals and rocks), the bulk structure of earth and plate tectonics, its mineral and rock components, and the variety of physical processes, both surface and subsurface that have operated over the long history of Earth. We will move through the physical and biological history of the Earth. Lectures, by their very nature are of limited length and cover only the most essential aspects of the topics that comprise this course. These topics include the various components of the earth including minerals, igneous rocks, sedimentary rocks, and metamorphic rocks. We will also look at the major geological and biological processes and how they have impacted both the physical as well as the biological realm over time. Running throughout the course and providing a unifying theory for much of geology is the theory of plate tectonics originally put forward as a hypothesis in the early 1900's and only became widely accepted about 50

years ago. The main objective of the course is to provide an overview of the biological, climatological, and physical changes over the 4.5 billion years of the Earth's history. A special focus will be placed on understanding the impact of climate and plate tectonics as the principle drivers of "change over time". The first part of the course focusses on major concepts and the second part of the course on Earth's physical and biological history. The course will wrap-up with a look at the impact of climate change on Earth's biological and physical processes and how that impact may be reduced or eliminated.

In addition to the PowerPoint-based lectures, you are also expected to read the appropriate chapters in the required course "textbooks". Note that "classic" or formal historical geology textbooks may be found online. This course outline/syllabus contains a detailed schedule including a list of specific topics and corresponding readings. Sources available online will also be used.

The Lab portion of the course includes projects ranging from mineral and rock identification to fossil identification to modeling climate change to understanding and applying basic associated geological "tools" to understand how geologists and other scientists use field and lab work to understand Earth's change over 4.5 billion years – physically and biologically.

Textbook & Instructional Materials

Required books for this course are popular (as opposed to technical) books including:

A (Very) Short History of Life on Earth: 4.6 Billion Years in 12 Pithy Chapters by Henry Gee (ISBN-10: 1250276659 ISBN-13: 978-1250276650, 288 pages.

A Brief History of Earth: Four Billion Years in Eight Chapters by Andrew Knoll

In addition to the lectures there will be additional assigned readings and/or videos to view. Note that many students find a "traditional" textbook as a good "reference" substitute. There are many very good online "traditional" free textbooks at <https://open.umn.edu/opentextbooks/textbooks/physical-geology>

Student Handbook

Refer to: <https://msutexas.edu/student-life/assets/files/handbook.pdf> or most recent MSUTexas Student Handbook

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). Additional guidelines on procedures in these

matters may be found in the Office of Student Conduct also in the Student Handbook.

Grading

There will be three lecture exams, the first two will each determine 15% of your final grade and the third ("final") exam will determine 20% of your course grade. Note that all lecture exams are "cumulative and comprehensive"; all prior material covered in lecture and lab, textbook readings, and any assigned readings will be included on exams. The "lecture" portion of the course will account for 50% of your final course grade. The "lab/homework" portion of your grade will account for a total 40% of your final course grade. Completion of all lab assignments on time is expected. Lab assignments are posted in D2L. Completed lab assignments are submitted via D2L drop boxes and due per the syllabus. Labs submitted after the due date are subject to a late penalty of 10% for one week past due; 20% for two weeks past due; 30% for three weeks past due). After three weeks, a missed lab may be given a grade of zero. All labs are provided in D2L. Homework assignments are also given during the semester. The homework assignments are posted in D2L. The homework assignments include questions that focus on both lecture and lab content. The homework assignments have a due date as listed in the syllabus and a grade penalty assessed for late assignments as follows: 10% for one week past due; 20% for two weeks past due; after three weeks a grade of zero for the missed homework may be recorded. Homework will be submitted via D2L (look for assignment specific dropboxes!). Homework due dates are listed in the syllabus at the end of this document. Finally, your Research Paper (details in separate section below) will account for the remaining 10% of your final grade. An electronic (MSWord or .pdf) version of your completed Research Paper is due per the syllabus schedule. The penalty for late submission of the research paper via D2L is as follows: 10% for one day past due; 20% for two days past due; 30% for days weeks past due; after three days a grade of zero may be recorded for the Research Paper grade. The topic for your Research Paper is due per the syllabus schedule. Note: No work may be submitted after 12/4/2022. Note that grades are normally rounded up to the nearest integer before assigning the final course letter grade. This means, for example, that a final calculated course grade of 89.8% will be rounded up to a final course grade of 90%.

Table 1: Points allocated to the various graded items or item groups

Graded Items	Contribution to the Final Course Grade
Exams 1 and 2 (each)	15%
Exam 3 (Final Exam)	20%
Lab Assignments (11 in total)	30% (total)
Homework Assignments (12 in total)	4% (total)
Research Paper	10%
Discussion Questions	2% (if applicable)
Assessments (12 in total)	4% (total)

Table 2: Final grades determination)

Grade	Calculated Points or Percent (%)
A	90
B	80-89
C	70-79
D	60-69
F	Less than 60

Homework

See Grading Section for details – All Homework must be submitted via the appropriate and specific D2L dropbox.

Lab Assignments

See Grading Section for details – All Lab Assignments must be submitted via the appropriate and specific D2L dropbox.

Exams

See Grading Section for details – All Exams will be provided in D2L. Details regarding the “open” period for completing the exams are provided in the Grading Section above. All exams will have a time limit of 50 minutes for the two “midterm” Exams and 110 minutes for the final Exam. The exams will be open for a minimum of 24 hours. Student who have worked with DSS may be given additional time to complete exams.

Research Paper

Research paper grade is 10% of final course grade. Research papers must be between 2250 and 3250 words (about 6-8 pages of text based on 11-pt or 12-pt font; word count per MSWord’s word count tool) and be no longer than thirteen total pages including illustrations and title page. Figures and/or tables (with captions) may be included within text or at end of paper (proper credit must be given for figures, maps, pictures that you include in your report). Format for the

report is MS Word or pdf file. The digital copy to be submitted per the course schedule/syllabus via D2L. **Your paper must be organized as follows:**

1. Title and author name on front page. Nothing else on the front page, please!
2. Abstract – 250 word limit summarizing your paper including a sentence on why you chose the particular topic.
3. Introduction – Opening paragraphs of your paper that describe the topic in general, its importance or application to you and the community, and why you choose the particular topic.
4. Main Body – Discussion of what your research revealed to you and what you want to share. Note that references are also required in the Main Body, usually one or more per paragraph.
5. Conclusion(s) – The key messages or “take-away” points that you expect the reader to remember.
6. References – List of references you used to research and write your paper. The minimum number of references is three.

Failure to follow the organizational and heading structure given above is an automatic 10% grade deduction! Failure to meet the length requirement may result in additional 10% grade deduction. Failure to properly cite your sources (in both the text and figures/illustration captions) may result in a 10% grade reduction. Please make sure that for any map, picture, graph, or other illustrations that you have used in your paper that you provide the source/reference in the item's caption.

Papers are due as per the syllabus schedule. Grade penalties of one letter grade per day late may apply. All papers must be submitted via D2L.

Note: No work may be submitted after 4/30/2022. All Research Papers must be submitted in Microsoft Word or PDF format via the appropriate and specific D2L dropbox.

Extra Credit

There are no Extra Credit opportunities in this course though that may be changed by the instructor without notice.

Late Work

Late work will be accepted through 12/4/2022. However, the following penalties will apply in all cases of late submittals (unless other arrangements have been made in advance): 10% for one week past due; 20% for two weeks past due; 30% for three weeks days past due. Submissions four weeks overdue may be given a grade of zero. No course assignments will be accepted after 12/4/2022. All assignments missing as of 12/4/2022 will be given a grade of zero.

Important Dates

Last Day to drop with a grade of “W:” 4pm, March 21, 2022

Refer to: [Drops, Withdrawals & Void](#)

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.

Online Computer Requirements

Taking an online class requires you to have access to a computer with reasonable (quality/speed/dependability) 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 must be submitted by the due date or late penalties may apply, and personal computer technical difficulties may not be considered as a reason for the instructor to allow students extra time to submit assignments, tests, homework, labs, 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 by email if you are having computer/internet 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](#).

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 a 100% 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, or by phone at (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 are given here: [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 prohibits 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.

Grade Appeal Process

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. Changes will be communicated to all students through [D2L](#). Please check the course news on a regular basis for schedule updates.

Course Schedule

The course schedule detail is given on the next five pages. The first table lists lecture topics and associated textbook readings. The second table lists the dates for the three exams as well as the lab, research paper, homework, and self-assessment assignments submission deadlines. **Note that the course schedule may be changed by the instructor at any time. Changes will posted in D2L and significant changes will also be in an updated syllabus in D2L.**

Course Schedule – Lecture Topics and Exams, Text Reading (Page 1 of 3)

Date	Topic and Topic Number	Textbook Pages or Other Required Reading
22-Aug	Course Overview. What is Science? What is the Scientific Method? Geology as a Science. Why Study Geology? (Topic 1)	
24-Aug	Time and Geology - Relative Time, Absolute Time, Age of the Earth. (Topic 2)	TBA
26-Aug	Seismology and the Gross Internal Structure of the Earth (Topic 3)	TBA
29-Aug	MLK Day Holiday – No Class	
31-Aug	Plate Tectonics - Part 1 (Topic 4)	TBA
5-Sep	Plate Tectonics – Part 2 (Topic 4)	TBA
7-Sep	Mineralogy - Basic Concepts (Topic 5)	TBA
9-Sep	Igneous Rocks (Topic 6)	TBA
12-Sep	Igneous Rocks (Topic 6)	TBA
14-Sep	Metamorphic Rocks (Topic 7)	TBA
16-Sep	Metamorphic Rocks (Topic 7)	TBA
19-Sep	Weathering and Erosion and Introduction to Sedimentary Rocks (Topic 8)	TBA
21-Sep	Clastic Rocks (Topic 9)	TBA
23-Sep	Carbonate Rocks (Topic 10)	TBA
26-Sep	Sedimentary Rocks - Textures and Depositional Environments (Topic 11)	TBA
28-Sep	Sedimentary Rocks - Diagenesis and Lithification (Topic 12)	TBA
30-Sep	Review 1	None
3-Oct	Review 1	None
5-Oct	FIRST EXAM (will cover all material through September 28) - 15% of grade. Exam open/close time TBA.	None
7-Oct	Sedimentary Rocks – Paleoecology (Topic 13)	TBA

Course Schedule – Lecture Topics and Exams, Text Reading (Page 2 of 3)

Date	Topic and Topic Number	Textbook Pages
10-Oct	Biological Evolution and the Fossil Record (Topic 14)	TBA
12-Oct	Precambrian Earth/Life(Topic 15)	Knoll 1, 2 Gee 1
14-Oct	Precambrian Earth/Life (Topic 15)	Knoll 3, 4 Gee 1
17-Oct	Early Paleozoic Earth/Life (Topic 16)	Knoll 5 Gee 2-5
19-Oct	Early Paleozoic Earth/Life (Topic 16)	Knoll 5 Gee 2-5
21-Oct	Middle and Late Paleozoic Earth and Life (Topic 17)	Knoll 5 Gee 2-5
24-Oct	Middle and Late Paleozoic Earth and Life (Topic 17)	Knoll 5 Gee 2-5
26-Oct	NO CLASS	
28-Oct	Early Mesozoic Earth and Life (Topic 18)	Knoll 6 Gee 6-8
31-Oct	Early Mesozoic Earth and Life (Topic 18)	Knoll 6 Gee 6-8
4-Nov	Late Mesozoic Earth and Life (Topic 19)	Knoll 6 Gee 6-8
7-Nov	Review 2	None
9-Nov	SECOND EXAM (will cover all material presented or assigned through Nov 4) - 15% of grade. Exam open/close time TBA.	None
11-Nov	Late Mesozoic Earth and Life (Topic 20)	Knoll 7 Gee 9
14-Nov	Mass Extinctions – Fossil Record (Topic 21)	Knoll 7 Gee 9
16-Nov	Cenozoic – Mammals (Topic 23)	Knoll 8 Gee 10-12
18-Nov	Cenozoic - Mammals (Topic 23) Research Paper Topic is due	Knoll 8 Gee 10-12
23-25 Nov	No Class – Thanksgiving Break	None
28-Nov	Climate Change - Experimenting on a Small Planet (Topic 24)	Knoll 8
30-Nov	Climate Change Mitigation -Topic 25	
2-Dec	Review 3. Last Day to Submit Assignments for Credit	None
6-Dec	THIRD EXAM (comprehensive) 20% of grade. Exam open/close time TBA. 20% of grade.	None

Schedule for Labs and Homework on next page

Course Schedule –Due Dates for Labs, Homework, Research Paper, and Assessments by Week. Assignments are due in the appropriate D2L Dropbox by 11pm of the Dates listed below.

Date – Week Starting. Assignments are Due by week’s end	Lab Assignment Due Dates	Homework (HW) Due Dates
8/22/2022	No lab Due	None
8/29/2022	Lab A: Geological Age Dating – Relative and Actual/Real Time	HW 1
9/5/2022	Lab B: Mineral Identification	HW 2
9/12/2022	Lab C: Igneous Rocks	HW 3
9/19/2022	Lab D: Metamorphic Rocks	HW 4
9/26/2022	Lab E: Sedimentary Rocks	HW 5
10/3/2022	No lab Due	HW 6
10/10/2022	Lab F: Precambrian Life/Fossils	HW 7
10/17/2022	Lab G: Paleozoic Life/Fossils	HW 8
10/24/2022	No Lab Due	None
10/31/2022	Lab H: Early Mesozoic Life/Fossils	HW 9
11/7/2022	Lab I: Middle/Late Mesozoic Life/Fossils	HW 10
11/14/2022	Lab J: Cenozoic Life/Fossils	HW 11
11/21/2022	No Lab Due	HW 12
11/28/2022	Lab K: Introduction to Climate Modeling	HW 13
12/2/2022	Research Paper Due by 4pm.	
12/5/2022	Last Day to Submit Any Late Assignments by 11pm. Grade penalties per the course syllabus may apply.	
12/5/2022	THIRD EXAM (course comprehensive) 20% of grade. Exam open/close time TBA.	