

INTRODUCTORY HISTORICAL GEOLOGY GEOL102-001

FALL 2023 - Syllabus

Lecture type: ON CAMPUS, Horizon Hall 2009

Lecture time: T-TR 7:30-8:45 AM

Instructor: Dr. G. Mattiotti; **E-mail:** gkysar@gmu.edu

Office Hours: Thursday 10 AM – Noon. Exploratory Hall 3413

Instructional Material

- Suggested Textbook: [Earth Through Time](#) by Harold Levin and David T. King Jr. Students need only the textbook, no the ancillary material from the publisher. Cheaper option is to rent the e-book. Used, and/or loose-leaf copies and earlier editions are acceptable. Additional readings are linked through Blackboard.
- Pdfs of the lecture-course notes, lecture activities, test and test practice are available to the students through Blackboard*. Notes for each lecture are posted the day before class.

**Lecture powerpoint slides, notes, any course materials, tests, outlines, and similar materials posted on blackboard are protected by U.S. copyright law and/or are intellectual property of the course instructor. You may take notes and make copies of course materials for your own use but you cannot repost on the web or distribute in any format outside the class.*

Course Objectives and Outcomes

Historical geology is a discipline of geology that seeks to understand the history of planet Earth and its life by using principles and the knowledge acquired from paleontology and physical geology.

The course starts with the hypothesis about the origin of Earth and uses what is learned from the geologic evidence of the past and the observation of the present to reconstruct the history and evolution of the Earth System. The course includes an overview of the evolution of the homo species and the search for life on other planets. At various time throughout the semester, the course presents the historical development of the fundamental ideas of modern geology.

Students who apply themselves to the study of the course material will gain the foundation requirement of core knowledge of Natural sciences for a better understanding of how science approaches the knowledge of our world.

This course fulfills the [Mason Core Learning Outcomes for Natural Sciences](#)

Therefore, this course will provide students with an understanding that:

1. Scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding: • evolves based on new evidence • differs from personal and cultural beliefs
2. There are scope and limits of science.

Additionally, students will be able to recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., climate change, etc.) and evaluate scientific claim (e.g., distinguish primary and secondary sources, assess credibility and validity of information).

Course requirements and Grading

GEOL 102 grade is based on the combination of three Lecture exam and Homework.

Exams are taken online, on blackboard through with Respondus Lockdown browser. Exams are all multiple choice, 50 questions, non-cumulative. Exams are timed to 75 consecutive minutes and are taken individually. NO lowest score exam will be dropped. There is no final exam, however, exam 3 is taken on the day of the final exams as scheduled by the registrar and will be limited to 75 minutes

Missing exams results in a score of zero. Make up of exams without proof of extenuating circumstances carries a 15% penalty.

Homework consists of assignments designed to further the understanding of the lecture topics; homework assignments can be repeated until all answers are correct. Homework comes with deadlines: late submissions on assignments carry a penalty of 15%.

The final grade for GEOL 102 is calculated as follows, with no Exceptions: 25% (1st exam) + 25% (2nd exam) + 25% (3rd exam) +25%(homework) =100%.

Grading scale: Final grade is based on the following scale, with no exceptions:

A+ ≥99% and above;	A ≥94% to <99%;	A- ≥90% to	
<94%	B+ ≥87% to <90%;	B ≥83% to <87%;	B- ≥80%
to <83%	C+ ≥75% to <80%	C ≥70% to <75%;	C- ≥65%
to <70%	D ≥ 50% to <65%;	F <55%	

- No score curve, unless the end-of-semester the MEDIAN for the whole class (based on all lecture exams and homework scores) falls below 80%
- NO Extra-credit available. No individualized assignment for extra credit will be granted to any student because individualized extra credit is unfair to the rest of the class.

NOTE: If you need a 4 credit- Science with laboratory course, you must enroll in both GEOL 102 and GEOL 104.

General Course Policies

By staying enrolled in this course, you agree to the following course policies:

- Attendance to class: It is not mandatory, but saves you a lot of study time.
- Communications: email is the official way of communicating with students. Any email from me will come from gkysar@gmu.edu; in accordance with protection of privacy best practices, I will not respond to email sent from non GMU official account. It is your responsibility to make sure that your GMU email is set up properly and to check your email regularly. Your email must have a subject because emails without subject are sent to spam mail.
- Class etiquette: everybody in the class has the right to a welcoming and safe learning environment. Mute your cell phones, refrain from carrying out conversations during lecture, be respectful of everybody in your class community. Disruptive behavior will incur in disciplinary action.
- Course Assessment: See Course requirement and grading section above
- Extenuating circumstances might occur that prevent you from taking an exam. If such circumstances can be justified, a make-up session will be arranged. Should you realize that you can not take an exam as scheduled, inform the professor immediately. A make up for unjustified absence/failure to take an exam or submit homework on time carries a penalty of 15% on the score.

All GMU Policies apply to this course:

- [Academic Integrity](#) It is expected that students adhere to the George Mason University Honor Code as it relates to integrity regarding coursework and grades. The Honor Code reads as follows: "Student members of the George Mason University community pledge not to cheat, plagiarize, steal and/or lie in matters related to academic work." More information about the Honor Code, including definitions of cheating, lying, and plagiarism, can be found at the Office of Academic Integrity website at [pdf of the honor code](#)
- [Disability Accommodation](#). If you need special accommodations/arrangement for the class and the exams, you must first file with the [Office of Disability Services](#) (ext: 993-2474)
- [Diversity](#) and [Inclusion](#): Faculty, staff and students in this course welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and disability.
- As a faculty member I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's [Title IX Coordinator](#) (703-993-8730; email titleix@gmu.edu) per [university policy 1412](#). If you wish to speak with someone confidentially, please contact the [Student Support and Advocacy Center](#) (703-380-1434) or [Counseling and Psychological Services](#) (703-993-2380).
- Privacy: [Student privacy](#) is governed by the [Family Educational Rights and Privacy Act \(FERPA\)](#) and is an essential aspect of this course. Students must use their MasonLive email account to receive important University information, including communications related to this class. In accordance with FERPA regulation, I will not respond to messages sent from or send messages to a non-Mason email address.

Course Calendar*

See Academic Calendar for standard holidays

Date	Lecture topic	
Aug. 22	Part 1: Principles of historical geology –	The Earth system: lithosphere, rock cycle and climate
Aug. 24		The sedimentary archives: from environments to sedimentary rocks
Aug. 29		The sedimentary archives: Sedimentary Structures
Aug 31		Reading the archives: stratigraphic principles
Sept 5		Deep time – radiometric ages
Sept 7		Recording life on Earth: the science of fossils
Sept. 12		Correlations: building the geologic time scale
Sept 14		Study day - no class - homework
Sept 19		EXAM 1 - ONLINE
Sept. 21	Part 2: The PreCambrian Eons and the Paleozoic Era	The early Solar system: Hadean Eon
Sept. 26		The Archaean and Proterozoic Earth System - Early Life
Sept. 28		Paleozoic Geology – 1 - Laurentia
Oct. 3		Paleozoic Geology 2 – building Pangea
Oct. 5		Paleozoic climate and resources
Oct. 12		Paleozoic Life 1 – biodiversity explosion – life of the shallow seas
Oct. 17		Paleozoic Life 2 - from water to land
Oct. 19		Paleozoic Life 3 – plants - Evolution and extinction
Oct. 24		Study day - no class - homework
OCT. 26		EXAM 2 - ONLINE
Oct. 31	Part 3: the Mesozoic and Cenozoic Eras	Mesozoic Geology and climate
Nov. 2		Mesozoic life at sea
Nov. 7		Mesozoic life on Land: dinosaurs
Nov. 9		Cenozoic Geology and climate worldwide
Nov. 14		Cenozoic Geology of North America
Nov. 16		Life of the Cenozoic – Mammals radiation; Avian dinosaurs
Nov. 21		Primates – Human origin
Nov. 28		Life beyond Earth
Nov. 30		Course wrap-up/ Q&A for exam 3
Dec. 12	EXAM 3 - ONLINE	

* Instructor reserves the right to change lecture topic and order to fit class needs and learning objectives.

Best practices for effective studying for GEOL102

The following are suggestions from tried and true strategy for doing well in this class:

1 – Come to class, it is not mandatory, but it is a very smart thing to do.

2 - For each hour of lecture, spend at least one hour studying on your own. Spread that time during the week. The most effective way to study is to review your class notes on the same day of class.

3 - There is a considerable amount of material to know for GEOL 102, many technical terms and names to remember and fit in the big picture of the understanding of geological processes. It is not wise to count on scoring high on an exam by binge-studying the night before; Mega study sessions tend to result in huge headaches and memory blackouts at exam times. One of the best strategies is to review what you have learned at the end of each week, make note of what is unclear and ask for clarifications at office hours or during lectures during Q&As.

4 – How to know if something is going to be in the exam? All geology topics discussed in class can be in the exam questions. The course will not cover all that is in the book, but all that is in the notes AND has been covered in class can be material for the exam.

5 - It is a good thing to have questions and doubts about the class materials; it means your brain is working at understanding and elaborating the knowledge. Ask questions during class as well as take advantage of office hours (it is like free tutoring).

6 - Engage with the topics of Historical geology. Talk about what you learned in class, create study sessions with your classmates, talk about geology with family and friends. Make observations of the world around you, pay attention when geology-related topics come up in the news. Above all, enjoy learning about your home planet's rich history!

[GMU Resources](#) has additional resources for your academic success; among others [University Life for students](#).