INTRODUCTORY HISTORICAL GEOLOGY

GEOL102-001 Fall 2024 Syllabus

Lecture type: on Campus – EXPLORATORY HALL Classroom L004

Lecture time: Tuesday and Thursday 7:30 to 8:45 AM

Instructor: Dr. G. Mattietti, PhD; **E-mail:** gkysar@gmu.edu

Office Hours: Tuesday, 3:30 to 5:30 PM, please make an appointment during that time. Additional times can be available upon request.

Instructional Material

- LMS: Blackboard
- This is a course with a significant amount of material presented in class; a textbook is useful, but no textbook can substitute for effective studying habits. If you require a textbook, the suggested Textbook is: **The Earth Through Time** by Harold Levin and David T. King Jr., the latest is the 11th edition. Do not purchase any additional ancillary material from the publisher. A cheaper option is to rent the e-book. Used, and/or loose-leaf copies and earlier editions are fine.
- Pdfs of the lecture-course notes, lecture activities, test and test practice are available to the students through Blackboard˚. Notes for each lecture are available the day before class.

Course Description/Overview:

Historical geology is a discipline of geology that seeks to understand the history of planet Earth and its life by using stratigraphic principles and the knowledge acquired from paleontology and physical geology. GEOL 102 is centered on the evolution of planet Earth, starting from the formation of the solar system. We will consider the hypothesis about the origin of Earth and learn from the geologic evidence of the past and the observation of the present. The course includes an overview of the evolution of the homo species and the search for life on other planets. Throughout the course, we will consider the historical development of the fundamental ideas of modern geology.

Course Learning Outcomes

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. Specifically:

1. Understand how 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. Recognize the scope and limits of science.
3. Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health, conservation, sustainability, energy, natural disasters, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).

NOTE: If you need a four credit- science with a lab course, you must enroll in BOTH GEOL 2 and GEOL 104.

Course Assessment (a.k.a. grading schema and weights):

GEOL 102 grade is based on the combination of three Lecture exams and a set of Homework assignments. Exams are taken online on Blackboard with Respondus Lockdown browser. All exams' format is multiple choice style, consisting of fifty questions, non-cumulative. Exams are timed to seventy-five consecutive minutes and are taken individually.
Note: there is only one attempt for each exam (no re-takes). No lowest score exam will be dropped, all exams count. There is no final exam, however, exam three is taken on the day of the final exams as scheduled by the registrar and will be limited to 75 minutes. Missing any of the exams results in a score of zero for the missed exam. Make-ups of exams without proof of extenuating circumstances carry a 20% penalty and must be arranged within a week of the exam-scheduled date.
Homework consists of a set 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 20%.
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 <50%	

- Final score rounds up to next integer at 0.5 or higher (e.g., 79.74% rounds up to 80%)
- NO individualized Extra-credit available.
- No score curve unless the end-of-semester total course score MEDIAN for the whole class (based on all lecture exams and homework scores) falls below 80%.

General Course Policies

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

Attendance: it is not strictly required, but you are expected to attend class regularly. It saves you a significant amount of time when studying.

Communications: email is the official way of communicating with students. Any email from me will come from blackboard directly or from gkysar@gmu.edu. In accordance with protection of privacy best practices, I will not respond to emails sent from non-GMU official accounts. 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 a subject go directly to spam mail.

Class etiquette: everybody in the class has the right to a welcoming and safe learning environment. Mute your cell phone; 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 could 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 20% on the score.

GMU POLICIES that Apply to this and any course at GMU:

In accordance with Catalog Policy AP.2.5, the following apply to this Course:

Academic Standards

Academic Standards exist to promote authentic scholarship, support the institution's goal of maintaining high standards of academic excellence, and encourage continued ethical behavior of faculty and students to cultivate an educational community that values integrity and produces graduates who carry this commitment forward into professional practice.

As members of the George Mason University community, we are committed to fostering an environment of trust, respect, and scholarly excellence. Our academic standards are the foundation of this commitment, guiding our behavior and interactions within this academic community. The practices for implementing these standards adapt to modern practices, disciplinary contexts, and technological advancements. Our standards are embodied in our courses, policies, and scholarship, and are upheld in the following principles:

• **Honesty**: Providing accurate information in all academic endeavors, including communications, assignments, and examinations.

• **Acknowledgement**: Giving proper credit for all contributions to one's work. This involves the use of accurate citations and references for any ideas, words, or materials created by others in the style appropriate to the discipline. It also includes acknowledging shared authorship in group projects, coauthored pieces, and project reports.

• **Uniqueness of Work:** Ensuring that all submitted work is the result of one's own effort and is original, including free from self-plagiarism. This principle extends to written assignments, code, presentations, exams, and all other forms of academic work. Violations of these standards—including but not limited to plagiarism, fabrication, and cheating—are taken seriously and will be addressed in accordance with university policies. The process for reporting, investigating, and judging violations is outlined in the university's procedures. Consequences of violations may include academic sanctions, disciplinary actions, and other measures necessary to uphold the integrity of our academic community. The principles outlined in these academic standards reflect our collective commitment to upholding the highest standards of honesty, acknowledgement, and uniqueness of work. By adhering to these principles, we ensure the continued excellence and integrity of George Mason University's academic community.

Student responsibility: *Students are responsible for understanding how these general expectations regarding academic standards apply to each course, assignment, or exam they participate in; students should ask their instructor for clarification on any aspect that is not clear to them*.

Link to the GMU honor Code document

Accommodations for Students with Disabilities

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit https://ds.gmu.edu/ for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu. Phone: (703) 993-2474.

Student responsibility: *Students are responsible for registering with Disability Services and communicating about their approved accommodations with their instructor in advance of any relevant class meeting, assignment, or exam.*

FERPA and Use of GMU Email Addresses for Course Communication

The Family Educational Rights and Privacy Act (FERPA) governs the disclosure of education records for eligible students and is an essential aspect of any course. Students must use their GMU email account to receive important University information, including communications related to this class. Instructors will not respond to messages sent from or send messages regarding course content to a non-GMU email address.

Student responsibility: *Students are responsible for checking their GMU email regularly for course-related information, and/or ensuring that GMU email messages are forwarded to an account they do check.*

Title IX Resources and Required Reporting

As a part of George Mason University's commitment to providing a safe and non-discriminatory learning, living, and working environments for all members of the University community, the University does not discriminate based on sex or gender in any of its education or employment programs and activities. Accordingly, all non-confidential employees, including your faculty member, have a legal requirement to report to the Title IX Coordinator, all relevant details obtained directly or indirectly about any incident of Prohibited Conduct (such as sexual harassment, sexual assault, gender-based stalking, dating/domestic violence). Upon notifying the Title IX Coordinator of possible Prohibited Conduct, the Title IX Coordinator will assess the report and determine if outreach is required. If outreach is required, the individual the report is about (the "Complainant") will receive a communication, likely in the form of an email, offering that person the option to meet with a representative of the Title IX office. For more information about non-confidential employees, resources, and Prohibited Conduct, please see University Policy 1202: Sexual and Gender-Based Misconduct and Other Forms of Interpersonal Violence. Questions regarding Title IX can be directed to the Title IX Coordinator via email to TitleIX@gmu.edu, by phone at 703-993-8730, or in person on the Fairfax campus in Aquia 373.

Student opportunity: *If you prefer to speak to someone confidentially, please contact one of Mason's confidential employees in Student Support and Advocacy (SSAC), Counseling and Psychological Services (CAPS), Student Health Services (SHS), and/or the Office of the University Ombudsperson*

GEOL 102 - Course Calendar*

Date	Lecture topic	
Aug. 27	Part 1: Reading the past, the beginning of Earth	Earth's system: climate, and tectonic plates. The Wilson cycle
Aug. 29		Earth's history archive: the rock cycle; sedimentary rocks.
Sept. 3		Reading the sedimentary Archive: environments, trace fossils
Sept. 5		The science of fossils and evolution
Sept. 10		Deep time: stratigraphic principles, sequencing events
Sept. 12		Deep time: the numerical age. Geologic correlation and the time scale
Sept. 17		Earth begins: the Hadean Eon
Sept 19		Study/homework day
Sept. 24	**EXAM 1 - ONLINE**	
Sept. 26	Part 2: Archaean and Proterozoic Eons. The Paleozoic	Precambrian geology and climate: the Archaean
Oct. 1		Precambrian geology and climate: the Proterozoic
Oct. 3		PreCambrian Life
Oct. 8		Paleozoic geology and climate: the making of Pangea
Oct. 10		Paleozoic resources
Oct. 15		Paleozoic life part 1: Life at sea
Oct. 17		Paleozoic life part 2: life on land, plants, and animals
Oct. 22		Paleozoic Life part 3: Radiations and extinctions
Oct. 24		Study day - homework
Oct. 29	**EXAM 2 - ONLINE**	
Oct. 31	Part 3: The Mesozoic and Cenozoic Eras. The history of us. Life beyond Earth	Mesozoic Geology and climate: destroying Pangea
Nov. 5		NO CLASS: ELECTION DAY
Nov. 7		Mesozoic Resources
Nov. 12		Mesozoic life part 1: at sea and on land
Nov. 14		Mesozoic life part 2: Dinosaurs
Nov. 19		Cenozoic Geology and climate
Nov. 21		Cenozoic Life part 1: modern life
Nov. 26		Cenozoic life part 2: Human Paleontology
Nov. 27-Dec.		Thanksgiving break
Dec. 3		What about other planets and Life beyond Earth?
Dec. 5		Homework/study day
Dec. 17	**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 GEOL 102

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

1 – Read the syllabus completely and carefully.

2 – Attendance, though not mandatory, is a very smart thing to do. DO THE HOMEWORK ASSIGNMENTS shortly after they are assigned. Do not wait long.

3 - 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 as class.

4 - 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.

5 – 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.

6 - 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).

7 - Engage with the topics of Historical geology. Talk about what you learned in class, create study sessions with your classmates, and 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!

For GMU resources for Academic success see: University Life for students.