INTRODUCTORY PHYSICAL GEOLOGY GEOL101-001
SPRING 2025 Syllabus

Lecture type: on Campus – INNOVATION HALL 103

Lecture time: Monday AND Wednesday 5:55 to 7:10 PM

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

Office Hours: Wednesday, 3:30 to 5:30 PM in Exploratory Hall 3413.

Instructional Material

LMS: Blackboard

Textbook you have options. Keep in mind that a textbook is necessary, but no textbook can substitute for effective studying habits. To help your studying efforts, here are the following textbook options, choose what you think works best for you:

- **Essentials of Geology,** 13/E Lutgens, Tarbuck, and Tasa, Prentice Hall editor. Used, and/or loose-leaf copies are acceptable. The 12th edition of the textbook is also acceptable. Ancillary material from the publisher is not required nor suggested.

OR

- **Open source (free) two options**:
  - ✓ An Introduction to geology by C. Johnson, M. Affecter, P. Interbrand, and C. Mosher
  - ✓ Physical geology, second edition by S. Earle https://opentextbc.ca/physicalgeology2ed/

Additionally, you will find the lectures' PowerPoint slides, notes, course materials, tests, outlines, and similar materials posted on **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 them in any format outside the class.*

Course Description/Overview:

This course provides an introductory knowledge of the Physical Geology of the Earth System. The course introduces the basic knowledge about minerals, the origin and variety of rocks, their importance as resources, and the Earth processes that shape our world. The course covers the main natural geologic hazards and their related risks. Plate Tectonics theory is presented within a framework of scientific reasoning, including case studies for examination of how scientific ideas evolve with societal changes and technological improvements. The course includes a final module on planetary geology.

Course Learning Outcomes

Students who apply themselves to the study of the course material develop an appreciation of how Earth system components interplay to provide both resources and challenges to our livelihood. Students become conversant about the multidisciplinary nature of the Earth Sciences. Successful students will be able to reason about natural processes that characterize the dynamic nature of the Earth and consequently to make informed decisions regarding personal and societal actions.

This course fulfills the Mason Core Learning Outcomes for Natural Sciences.

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

GEOL 101 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. Exams are all multiple-choice style; each consists of fifty questions; all exams are 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 101 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 Extra credit available. No individualized assignment for extra credit is available.
- 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%.

NOTE: If you need a four credit- science with a laboratory, you must enroll in BOTH GEOL 101 and GEOL 103.

General Course Policies

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

Attendance to class: Coming to class is the best use of your time when you study geology, you already know what to focus on. Attendance, however, is NOT mandatory. Attendance is not taken.

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 Requirements 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 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 resolving 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, 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*

Spring 2025 Course Calendar*

Date	Lecture topic	
Jan. 22	Part 1: Earth Structure and materials	The structure of Earth
Jan. 27		Main rock-forming minerals
Jan. 29		Igneous rocks
Feb. 3		Volcanoes
Feb. 5		Surface processes, environments, and soils
Feb. 10		Sedimentary rocks
Feb, 12		Metamorphic rocks and the rock cycle
Feb. 17		Study day
Feb. 19	**EXAM 1 - ONLINE**	
Feb. 24	Part 2: Surface processes, hazards, and climate	Mass Wasting
Feb. 26		Rivers
Mar. 3		Flooding
Mar. 5		Groundwater
Mar. 17		Glaciers
Mar. 19		Coastlines
Mar. 24		Climate
Mar. 26		Anthropogenic Hazards
Mar. 31		Study day
Apr. 2	**EXAM 2 - ONLINE**	
Apr. 7	Part 3: Earth's internal processes. Planetary geology	Geologic structures
Apr. 9		Earthquakes
Apr. 14		Seismic hazard
Apr. 16		Plate Tectonics Theory
Apr. 21		The Geology of the sea floor
Apr. 23		Geology of resources
Apr. 28		Geology of the Solar System part 1
Apr. 30		Geology of the Solar System part 2
May 5		Study day - Open floor Q&A
May 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 GEOL101

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

1 – Attendance, though not mandatory, is a very smart thing to do. Complete the homework assignments shortly after they are assigned. Do not wait long.

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 as class.

3 - There is a considerable amount of material to know for GEOL 101, 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 Physical 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. Enjoy learning about your home planet's rich history!

Additional resources can be found at: University Life for students.