

# INTRODUCTORY PHYSICAL GEOLOGY GEOL101-007

## FALL 2023 Syllabus

**Lecture type:** on Campus – Enterprise 80

**Lecture time:** T-TR 7:20-8:45 PM

**Instructor:** Dr. G. Mattietti; **E-mail:** [gkysar@gmu.edu](mailto:gkysar@gmu.edu)

**Office Hours:** Thursday 10 AM – Noon. Exploratory Hall 3413 or by appointment.

### **Instructional Material**

Textbooks are necessary but no textbook can substitute for effective studying habits. To help you learn, here are your 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 are not required nor suggested.

- Open source (free) two options:

An Introduction to geology by C. Johnson, M. Affolter, P. Inkenbrandt, and C. Mosher

<http://opengeology.org/textbook/>

Physical geology, 2nd 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 in any format outside the class.*

### **Course Objectives and Learning Outcomes:**

This course provides an introductory knowledge of the Physical Geology of the Earth System. The course introduces basic knowledge about minerals, the origin and variety of rocks and 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. This course fulfills the [Mason Core Learning Outcomes for Natural Sciences](#).

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.

## **Course requirements and Grading**

GEOL 101 grade is based on the combination of three Lecture exam and Homework assignments.

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 and there is only 1 attempt for each exam (no re-takes). NO lowest score exam will be dropped, all exams count.

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 ups of exams without proof of extenuating circumstances carry a 20% 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 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 <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 101 and GEOL 103.*

## **General Course Policies**

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

- Attendance to class: It is not mandatory, but it is the best use of your time when you study, you already know what to focus on.
- Communications: email is the official way of communicating with students. Any email from me will come from blackboard directly or from [gkysar@gmu.edu](mailto: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 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 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](mailto: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	<b>Part 1: Earth Structure and materials</b>	The structure of Earth
Aug. 24		Main rock forming minerals
Aug. 29		Igneous rocks
Aug. 31		Volcanoes
Sept. 5		Surface processes, environments and soils
Sept. 7		Sedimentary rocks
Sept. 12		Metamorphic rocks and the rock cycle
Sept. 14		Study day - no class - homework
<b>Sept 19</b>		<b>EXAM 1 - ONLINE</b>
Sept. 21	<b>Part 2: Surface processes, hazards and climate</b>	Mass Wasting
Sept. 26		Rivers
Sept. 28		Flooding
Oct. 3		Groundwater
Oct. 5		Glaciers
Oct. 12		Coastlines
Oct. 17		Climate
Oct. 19		Anthropogenic Hazards
Oct. 24		Study day - no class - homework
<b>OCT. 26</b>		<b>EXAM 2 - ONLINE</b>
Oct. 31	<b>Part 3: Earth's internal processes. Planetary geology</b>	Geologic structures
Nov. 2		Earthquakes
Nov. 7		Seismic hazard
Nov. 9		Plate Tectonics the birth of a Theory
Nov. 14		Geology of the seafloor
Nov. 16		Geology of resources
Nov. 21		Geology of the solar system - 1
Nov. 28		Geology of the solar system - 2
Nov. 30		Study day - Open floor Q&A
<b>Dec. 12</b>	<b>EXAM 3 - ONLINE</b>	

\* 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 strategy for doing well in this class:

1 – Come to class, it is not mandatory, but it is a very smart thing to do. DO 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 of 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, 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.](#)