INTRODUCTORY PHYSICAL GEOLOGY GEOL101-001

Spring 2024
Syllabus

Lecture type: on Campus – Lecture Hall 1

Lecture time: M-W 5:55-7:10 PM

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

Office Hours: Wednesday 3:30 to 5:30 PM - Exploratory Hall 3413

Instructional Material

Textbooks are 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 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 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. 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 Assessment:

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.

Note: 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 <50%	

- 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 is available.

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. 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) 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	
Jan 17	Part 1: Earth Structure and materials	The structure of Earth
Jan 22		Main rock forming minerals
Jan 24		Igneous rocks
Jan 29		Volcanoes
Jan. 31		Surface processes, environments and soils
Feb. 5		Sedimentary rocks
Feb. 7		Metamorphic rocks and the rock cycle
Feb. 12		Study day - homework
Feb. 14	**EXAM 1 - ONLINE**	
Feb. 19	Part 2: Surface processes, hazards and climate	Mass Wasting
Feb. 21		Rivers
Feb. 26		Flooding
Feb. 28		Groundwater
Mar 4-10		Spring Recess
Mar. 11		Glaciers
Mar. 13		Coastlines
Mar. 18		Climate
Mar. 20		Anthropogenic Hazards
Mar. 25		Study day - homework
Mar. 27	**EXAM 2 - ONLINE**	
Apr. 1	Part 3: Earth's internal processes. Planetary geology	Geologic structures
Apr. 3		Earthquakes
Apr. 8		Seismic hazard
Apr. 10		Plate Tectonics the birth of a Theory
Apr. 15		Geology of the seafloor
Apr. 17		Geology of resources
Apr. 22		Geology of the solar system - 1
Apr. 24		Geology of the solar system - 2
Apr. 29		Study day - Open floor Q&A
May 6	**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 strategy for doing well in this class:

1 – Attendance, though not mandatory, 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 our 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.