

INTRODUCTORY HISTORICAL GEOLOGY

GEOL102– 001

Fall 2019

Syllabus

Lecture room: Blueridge Hall 129

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

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

Office: Exploratory Hall, Room 3413

Office Hours: Thursday 9-11 AM or by appointment

Instructional Material: [Earth Through time](#), Harold Levin, 11th edition. Available also as e-book for rent. Previous edition of this textbook are acceptable.
Additional readings will be available on blackboard.

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 stratigraphic principles and the knowledge acquired from paleontology and physical geology.

In GEOL 102 is centered on the evolution of the world in which we live, 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.

GEOL 102 will provide students who apply themselves to the study of the course material with the foundations requirement of quantitative reasoning and with the core requirement knowledge of Natural sciences for a better understanding of how science approaches the knowledge of our world.

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, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).

The laboratory associated with this course will provide additional information and exercises to reinforce understanding of the basic principles, processes and patterns discussed in lecture. Laboratory activities will provide the opportunity to carry out careful and systematic observations, to develop and test a hypothesis, to analyze evidence and to interpret the results

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

Course requirements and Grading

GEOL 102 grade is based on Lecture and Laboratory scores. Assessment of the lecture section is based on the results of 3 equally weighted exams. There is no final exam, each exam covers 1/3 of the semester and it is NOT cumulative. Exams are all multiple choice and taken individually. Online exams are available on blackboard through with Respondus lockdown browser only. The final grade for GEOL 102 is calculated as follows, with no Exceptions:

$25\% (1^{\text{st}} \text{ exam}) + 25\% (2^{\text{nd}} \text{ exam}) + 25\% (3^{\text{rd}} \text{ exam}) + 25\% (\text{lab score}) = 100\%$.

Grading scale:

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

A+ ≥99% and above;	A ≥95% to <99%;	A- ≥90% to <95%
B+ ≥85% to <90%;	B ≥80% to <85%;	B- ≥75% to <80%
C+ ≥70% to <75%	C ≥65% to <70%;	C- ≥60% to <65%
D ≥50% to <60%;	F <50%	

Please note:

- ⊙ No lowest exam score will be dropped, all 3 exams will contribute to the grade.
- ⊙ No curving unless the end-of-semester final average for the whole class (based on all lecture exams and lab scores) falls below 80%

General Course Policies

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: "To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the University Community have set forth this: 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](#)

- ⊙ **Attendance to class:** it is the best strategy for success.
- ⊙ **Be considerate:** please mute your cell phone during lecture time. Do not disturb fellow students, come to class on time, but if you are late or need to leave earlier be noiseless and invisible.
- ⊙ Canceled class:
- ⊙ **Communications:** **email** is the official way of communicating with students, phone calls, printed/handwritten notes are not official form of communication for this class. Make sure that your GMU email is set up properly and it is working. Emails must have GEOL102- in the subject. Any email without subject will be filed as spam mail and deleted without opening it.
- ⊙ **Exams** will be taken as scheduled⊙ All exams are taken during the 75 minute time frame of the class, with no exceptions unless students have certified ODS arrangements. Absence/fail to submit an exam will result in a 0 (zero) score for that exam. No make-ups granted unless extenuating circumstances occur (see below).
- ⊙ **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 you cannot take an exam as scheduled, inform the professor immediately. If extenuating

circumstances occur that prevent a student to take exam 3, an Incomplete grade for the semester will be assigned.

⊙ Extra-credit. **None available**, but there will be in-class opportunities that will boost lecture exam scores by allowing you to work at active and collaborative learning activities. These will be the sole opportunities for additional course points. Class activities are available exclusively to students attending the class on the day the activity is offered. To count as extra credit they must be turned in at the end of class.

No individualized assignment will be offered to any student under any circumstance.

⊙ Disability Statement If you need special accommodations/arrangement for the class and the exams, you must first file with the [Office of Disability Services](#)(SUB I, Rm. 222; 993-2474)

⊙ Instructor is available at office hours and by appointment. All official communication with the instructor must be via email.

⊙ GMU Resources additional resources for your academic success; among others: [Academic success workshops](#) (see calendar), [University Life for students](#).

Studying for GEOL102

If you to want earn a good grade in this course follow these simple rules:

1 – come to class and add your own notes to those posted on blackboard, engaging with the learning material will help you remember better.

2 - For each hour of lecture, spend at least one hour studying on your own. That is 2.5 hours a week, minimum. 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; and unless you have super powers or you are extremely lucky, you will not ace an exam by binge- studying the night before; Mega study sessions tend to result in huge headaches and memory blackouts at exam times.

4 - It is a good thing to have questions and doubts as you study, it means your brain is working at understanding and elaborating the knowledge. So ask questions, take advantage of office hours (it is like free tutoring), It is very important to study actively, one of the easiest way is to talk about what you study, take your own notes e revise them, now and then have study sessions with your classmates, form a study group, etc.

5 – Enjoy learning about the evolution of your home planet!

Course Calendar*

Date	Lecture topic	
Aug. 27	Part 1: Principles of historical geology – The Precambrian	The Science of Historical Geology – stratigraphic principles
Aug. 29		Time in Geology
Sept.3		The sedimentary archives: rocks and facies 1
Sept.5		The sedimentary archives: rocks and facies 2
Sept 10		Fossils and life
Sept.12		The Hadean and the Archaean - the baby solar system
Sept.17		Proterozoic Geology
Sept 19		Precambrian Life ushering the Paleozoic: Burgess Shale FM
Sept 24		Review of geologic principles of deep time investigation and the Origin of Earth
Sept 26	EXAM 1	
Oct. 1	Part 2: Paleozoic and Mesozoic	Early Paleozoic Geology
Oct. 3		Late Paleozoic building Pangea- Paleozoic climate
Oct. 8		Paleozoic Life 1 – from water to land
Oct. 10		Paleozoic Life 2 - plants
Oct. 17		Mesozoic Geology
Oct. 22		Mesozoic Life 1
Oct. 24		Mesozoic Life 2 – intro to dinosaurs
Oct. 29		Dinosaurs – Biomechanics case studies-
Oct. 31		Review
Nov. 5	EXAM 2	
Nov. 7	Part 3: Cenozoic, life beyond Earth	Cenozoic Geology of North America
Nov. 12		Cenozoic Geology of the rest of the World
Nov. 14		Life of the Cenozoic – Megafaunas case studies
Nov. 19		Case studies: evolution of flight in vertebrates –
Nov. 21		Primates – Human origin
Nov. 26		Climate of the Cenozoic
Dec 3		Life beyond Earth - – the search for life on other planets
Dec. 5		Review
Dec. 17	EXAM 3	

* instructor reserves the right to change lecture topic to fit class needs and learning objectives. Changes of schedule can happen in the event of extenuating circumstances such as, but not limited to, extreme weather.