

HISTORICAL GEOLOGY LABORATORY

GEOL 104-201 - Fall 2024 Syllabus

Laboratory Room: Exploratory Hall - Room 1309

Laboratory time: Tuesday, 10:30 AM to 1:10 PM

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

Office Hours: Tuesday, 3:30 to 5:30 PM. If you have classes during those time, you can ask for an appointment at a different time/day.

Instructional Material

- Historical Geology Workbook, 6th edition, 2024, ISBN: 9798385128136. Can be found at the GMU bookstore or directly from the [publisher](#)
- Supporting documents, if needed, for each lab are available the day before class through Blackboard*.

** PowerPoint slides, notes, tests, outlines, overall, any course materials posted on blackboard are protected by U.S. copyright law and/or are intellectual property of GMU and/or the course instructor. You may 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:

Historical geology laboratory is an ancillary course of Historical Geology. The historical geology laboratory course provides a series of activities and hands-on assignments to learn about the rock cycle, sedimentary rocks, sedimentary environments, stratigraphic principles, and their application to their understanding of deep time and Earth's evolution. The second part of the laboratory course focuses on fossils and in general the evolution of life on Earth.

The class is organized with 13 lab exercises and 2 laboratory exams (see calendar).

Course Learning Outcomes

This course fulfills the [Mason Core Learning Outcomes for Natural Sciences](#). Specifically learning outcome 5: Students will participate in scientific inquiry and communicate the elements of the process, including a) making careful and systematic observations, b) developing and testing a hypothesis, c) analyzing evidence, and d) Interpreting results.

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

Course Assessment (a.k.a. grading)

GEOL 104 grade is based on the combination of the following elements:

- in class COMPLETION of twelve laboratory exercises (36% - each assignment is worth 3% of the final grade). You are allowed 1 lab make-up with a waived absence if lab is made up with permission of the instructor.
 - Laboratory exercises are graded on completion and correctness. All exercises are due at the end of the lab period unless otherwise indicated at the beginning of each lab. Late submissions incur a 50% penalty for that laboratory (i.e., the score is worth 1.5% instead of 3%).
- Complete and correct submission of the assignment at the Museum of Natural History (4%).
- Laboratory exams: Lab exam 1 (on campus) 30%, Lab exam 2 (online) 30%. Exams are taken as scheduled and are timed to 90 minutes (1.5 hours). Missing an exam 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.

The final grade for GEOL 104 is calculated as follows, with no exceptions:

30% (1st exam) + 30% (2nd exam) + 40% (laboratory assignments) =100%.

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

- 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%.

Letter Grade	Percent Grade
A+	97-100
A	93 to <97
A-	90 to <93
B+	87 to < 90
B	83 to <87
B-	80 to < 83
C+	77 to <80
C	73 to <77
C-	70 to < 73
D	65 to <70
F	<65

General Course Policies

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

- Attendance to class: **It is mandatory**, it is part of the grade as you do the exercise in class.
- Communications: email is the official way of communication at GMU. 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 assessment 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 (see assessment section above)

GMU POLICIES that Apply to this course:

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 adjudicating 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 104 - Course Calendar*

Lab Session	Topic *	Date
1	Review of major rock forming minerals, rocks, and the rock cycle	9/3
2	Sedimentary rocks, sedimentary environments, and structures	9/10
3	The sedimentary archive under the microscope. Sands and microfossils	9/17
4	Stratigraphy, unconformities– Relative dating	9/24
5	Radiometric dating and the geologic time scale	10/1
6	Lithostratigraphic Correlations -The geologic time scale – Review	10/8
Exam 1 ON CAMPUS		10/15
7	Modes of fossilization - Reef builders: Sponges, Corals, Bryozoans and Brachiopods	10/22
8	Mollusks, Arthropods and Echinoderms	10/29
ELECTION DAY – no classes		11/5
9	Geology of Virginia and Fairfax – Geologic maps	11/12
10	Dinosaur Biomechanics (Museum project assigned)	11/19
11	Pollen in the Fossil record (online)	11/26
THANKSGIVING RECESS		11/27-12/3
12	Human Paleontology	12/3
EXAM 2 ONLINE		12/17

* Instructor reserves the right to change lecture topic and order to fit class needs and learning objectives.

Best practices for effective studying for GEOL 104

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

- 1 – [Read the syllabus](#) completely and carefully so you know what to expect and what is expected of you.
- 2 – The laboratory starts on time, hence, come on time and do not miss lab.
- 3 – Pay careful attention to the procedures and the information you learn for each lab. Take good notes because you will be able to use them at the exam.
- 4 - What is going to be in the lab exams? The exams are designed exactly like the labs; what you learn to do during each lab, you will be asked to do for the exam.
- 5 – After the general laboratory presentation, I will be moving around the class to assist students in doing the lab correctly. Ask for help/clarification if you need any!

Additional resources can be found at: [University Life for students.](#)