

**Geology 102-002
Historical Geology
Spring 2025 Syllabus**

Meeting Times and Location

Tuesdays and Thursdays 10:30 – 11:45 am
Innovation Hall 222 (in-person)

Instructor

Dr. Jules Goldspiel
Department of Atmospheric, Oceanic and Earth Sciences (AOES)
Office: Exploratory Hall 3414
Office Hours: Mondays 3:00 – 5:00 pm
 Thursdays 12:00 – 1:00 pm
 Other days and times by appointment
e-mail: jgoldspi@gmu.edu (best contact method)

Course Information

3 Credits

Recommended Prerequisite: GEOL 101 (Physical Geology)

This course is part of the Mason Core curriculum and fulfills requirements for the Natural Science category, which is listed in the Exploration Courses section. The goals of natural science core courses are to engage you in scientific exploration, foster your curiosity, enhance your enthusiasm for science, and enable you to apply scientific knowledge and reasoning to personal, professional and public decision making.

This course will focus on understanding how Earth processes, when placed in a broad historical context, chart the geologic history of Earth, record the biologic history of Earth, account for the current geologic landscape, and help explain current geologic activity across the globe. Topics will include geologic time, rocks and minerals, sedimentation principles, structure of Earth, plate tectonics, development and evolution of continents, crustal deformation, mountain building events, changes in Earth's global environment, creation and evolution of different regional environments, fossils, and the history of life on Earth. The course will also cover the formation of Earth itself, and how the geologic history of Earth compares to the histories of other planetary bodies.

The goals of this course are for students to:

- Appreciate the range of physical, chemical and biological processes that have been active throughout Earth's history
- Understand how different processes have left their mark on Earth, and understand how the remnants of these processes help document the history of Earth
- Know how old Earth is, and understand how relative and absolute geologic ages are determined
- Understand the timescales of major geologic events and eras on Earth
- Understand the timescales of the development and evolution of life on Earth, and appreciate the wide range of past and present life on Earth
- Appreciate the properties and natural history that make Earth unique among planets
- Understand that scientific inquiry is based on collection of evidence, and the testing and analysis of theories against the collected evidence
- Understand that scientific knowledge and theories evolve based on collection of new evidence and new understandings of old evidence, and that scientific inquiry differs from personal and cultural beliefs

- Evaluate scientific information and learn to distinguish primary and secondary sources, and to assess the credibility and validity of the information
- Recognize and articulate the relationship between the natural sciences and society, and how science can be applied to societal challenges
- Recognize the scope and limits of science

This is a Natural Science Overview (non-lab) course. The course works in coordination with GEOL 104, which is a separate 1-credit Natural Science Laboratory course. If you need to fulfill a Natural Science Laboratory course requirement, you must be enrolled in GEOL 104 in addition to GEOL 102. Please consult with your Academic Advisor if you are unsure about the Laboratory course requirement for your major.

Course Textbook

The Earth Through Time, 11th Edition, 2017, H. L. Levin and D. T. King, Jr., John Wiley & Sons.
(Recommended)

Available in print and electronic formats. See GMU Bookstore for purchasing and renting options. Ancillary materials are also available from the publisher's web site at no additional cost (<https://www.wiley.com/en-us>). These extra materials are not required but may be helpful.

Required Coursework & Grading Weights

The required coursework consists of weekly online quizzes and three exams. The weights of the graded items are as listed in the table at right.

Quizzes will be released online on most weeks that class meets (see Tentative Course Schedule). Each quiz will cover the most recent topics discussed since the last quiz. The quizzes will be time-limited and scored for accuracy.

Weight	Coursework
25%	Quizzes (all combined)
25%	Exam I
25%	Exam II
25%	Exam III (Final Exam)

Exams will not be cumulative; they will only cover the material discussed in the preceding third of the class (see Tentative Course Schedule). The exams will be time-limited and scored for accuracy.

In addition to the required coursework, extra credit points may be earned by answering questions and participating in exercises during class. Participation in these exercises is not required. There is no other opportunity for extra credit.

Grade Scale

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Weighted Score (%)	≥ 99%	92.0 – 98.9%	90.0 – 91.9%	88.0 – 89.9%	82.0 – 87.9%	80.0 – 81.9%	78.0 – 79.9%	67.0 – 77.9%	65.0 – 66.9%	50.0 – 64.9%	< 50%

Course grades will be determined by the weighted percentage of total points possible (see Required Coursework & Grading Weights). The standard grade scale is as indicated in the table above. The grade scale is subject to change, but if any changes are made, it will be favorable to students (i.e., if the scale is changed, the cutoff for a grade would be at lower percentage not higher).

Tentative Course Schedule

Semester	Week	Date	Topic	Textbook Chapter
1	*	01/21	Course Information & Introduction to Historical Geology	1
		01/23	Time and Geology	2, 3
2	*	01/28	Rocks and Minerals	4
		01/30	Sedimentary Archives	5
3	*	02/04	Fossils and Life on Earth	6
		02/06	Fossils and Life on Earth	
4	*	02/11	Earth's Interior and Plate Tectonics	7
		02/13	Review 1	
5		02/18	<i>Exam I (10:30 – 11:45 am)</i>	
		02/20	Formation of the Solar System (Earth's Earliest History)	8
6	*	02/25	Early Earth: Hadean and Archean Eons	
		02/27	Proterozoic Eon	9
7	*	03/04	Paleozoic Era: Events (Early Paleozoic)	10
		03/06	Paleozoic Era: Events (Late Paleozoic)	11
8		03/11	<i>Spring Break (No Class)</i>	
		03/13	<i>Spring Break (No Class)</i>	
9	*	03/18	Paleozoic Era: Life	12
		03/20	Paleozoic Era: Life	
10		03/25	Review 2	
		03/27	<i>Exam II (10:30 – 11:45 am)</i>	
11	*	04/01	Mesozoic Era: Events	13
		04/03	Mesozoic Era: Events & Life	14
12	*	04/08	Mesozoic Era: Life	
		04/10	Cenozoic Era: Events	15
13	*	04/15	Cenozoic Era: Life	16
		04/17	Cenozoic Era: Life	
14	*	04/22	Quaternary Period: Events	17
		04/24	Quaternary Period: Events & Life	
15		04/29	Planetary Geology	
		05/01	Review 3	
16		05/13	<i>Exam III (Final Exam) (10:30 – 11:45 am)</i>	

* Online quiz released

Note: Course content and schedule may be modified by the instructor as the semester progresses.

Key Add/Drop/Withdrawal Dates

Jan 28 Last day to add classes

Feb 04 1st drop deadline (full tuition refund, no record on transcript)

Feb 11 2nd drop deadline (50% tuition refund, no record on transcript)

Feb 25 Last day for unrestricted Self-Withdrawal (no tuition refund, W on transcript)

Mar 31 Last day for Selective Withdrawal (no tuition refund, W on transcript)

Course Policies

Electronic Devices: The use of electronic devices (computer, tablet, phone and the like) is permitted during class. While in class, your phone ringer and any other audible alerts on your devices must be off. Be respectful of your peers and instructor and do not use your electronic devices to engage in activities that are unrelated to the class while class is in session. The instructor reserves the right to prohibit the use of electronic devices by any student whose use of a device is unrelated and/or disruptive to the class.

Except for the device used to take the online exams themselves, no other use of electronic devices is allowed during exams. You may not use any device to access notes or any other information during exams.

Earbuds and headphones may not be worn at any time during class or during exams without an approved accommodation or prior approval from the instructor.

All standard university policies apply to the use of George Mason University computers and computer systems for this course. Please see the GMU policies website for a summary of the university computer policies (<https://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).

Course Materials and Presentations: All course materials and presentations (e.g., lecture outlines, lecture slides, exams, quizzes, exercises, demonstrations) are for course use only. ***These materials may not be shared, posted or in any way redistributed outside of the course, either electronically or as hardcopy.*** Sharing or redistribution of these materials is a violation of the GMU Academic Standards Code.

Recording of Lectures: Lectures and demonstrations may *not* be electronically recorded in any format without prior permission of the instructor and completion of a recording agreement form. Acceptable agreement forms are the "Recording (Audio/Video) and Copies of Class Presentations Acknowledgement" form from Disability Services, or a similar form provided by the instructor. In all cases, the opinions, questions and comments of other class members may not be shared at any point with anyone else.

Attendance: While attendance is not strictly required, students are expected to attend class regularly.

Quizzes: Quizzes will be taken online through Blackboard. Quizzes will be made available on Blackboard approximately weekly and are to be completed outside of class. Unless otherwise noted, you will have 5 days to complete each quiz once it is made available online.

Quizzes are time-limited. You may start the quizzes at any time during the window that each quiz is available. Once started, all quizzes must be completed within 60 minutes of when the quiz is started.

Quizzes are open book and open notes; you may use notes, books or any other information for the quizzes.

Exams: Exams I and II will be taken during the regular class time as listed in the course schedule, and they will start at the class start time. Exam III (Final Exam) will be taken during Final Exam week and start at the time and date listed on the course schedule. If GMU is closed on the scheduled date of an Exam, the make-up date and time for the Exam will be announced through the class Blackboard site and GMU e-mail.

Exam I must be taken in class using a paper exam. For Exams II and III you will have the option of taking exams remotely online. If you want to take Exam II or III in class on paper, you must notify the instructor prior to the exam date so that a paper exam will be available for you.

In-class paper exams will require an appropriate Scantron form. A Scantron form will be provided for each exam taken in class on paper.

Online exams will require use of the Respondus LockDown Browser and Monitor.

Exams are time-limited. Unlike quizzes, exams have a set start time. Exam start times are listed in the course schedule. All exams must be completed within 75 minutes of the scheduled exam start time.

All exams are closed book and closed notes. Use of books, notes, websites, or any other information from any other source besides the exam itself, is prohibited during all exams.

Extra Credit Opportunities: In-class questions and/or exercises will be presented during most (not all) class meetings. Students can earn extra credit points by answering the questions and participating in the exercises. These questions and exercises will be scored for participation only, not accuracy. You must be in class and complete each question or exercise at the time it is presented to earn the associated points.

Any extra credit points earned will be added to your corresponding exam score for that part of the course up to the total points for that exam. For example, if you score 97.5 on an exam that is worth 100 points and earned 4 extra credit points for that portion of the course, your adjusted exam score would be 100.

The maximum number of extra credit points that may be earned during any portion of the course is 5.

All extra credit point totals will be reset to zero after each exam.

Participation in these activities is encouraged, but is not required. You will not lose points if you do not participate in the in-class activities. You may still earn full credit for the course from the quizzes and exams.

Missed Coursework: Reasonable accommodations will be made for missed exams and quizzes due to sickness, religious observance and other unavoidable schedule conflicts if the instructor is notified prior to the date the exam or quiz is given. Without prior notification, late exams and quizzes are subject to a 10% reduction of the possible score (e.g., a 10-point reduction from an exam worth 100 points). Unusual situations that prevent advance notice to the instructor will be handled on a case-by-case basis. In any event, exams and quizzes that are not made up or remain unexcused one week after the scheduled exam or quiz date are subject to a grade of zero.

Collaboration: Students are encouraged to study together and discuss with each other the information and concepts covered in the lectures and course readings. Collaboration is permitted for quizzes and in-class questions and exercises so long as all students in the collaboration fully participate and submit their own responses. Simple division of labor (i.e., dividing question or exercise responsibilities within the group) is not consistent with this policy and is not permitted.

Collaboration of any sort is not permitted during exams.

Conduct During Class: Students are responsible for their actions during class and exam times. Disruptive behavior will not be tolerated.

Grade Postings on Blackboard: All course scores will be posted on Blackboard unless otherwise requested.

Unscheduled University Closure: In the event of an unscheduled university closure or access limitation due to weather or other reasons, check Blackboard and your GMU e-mail for any class announcements. If class cannot meet because of the closure or access limitations, supplementary activities may be assigned.

Extended Emergency Adaptation: All classes are scheduled to be conducted in person. If an extended emergency situation prevents in-person classes, classes may be shifted to a synchronous online mode (i.e., live online) and conducted through Blackboard. You will be told if classes are being shifted to online mode and given instructions on how to access the online system.

University Policies

The University Catalog is the central resource for GMU policies affecting student, faculty and staff conduct in university academic affairs. Please see the catalog (<https://catalog.gmu.edu>) or the University Policy web site (<https://universitypolicy.gmu.edu>) for information on academic and non-academic policies not explicitly specified in the syllabus.

Common policies that affect all courses at GMU are listed below. These common policies regard Academic Standards, Accommodations for Students with Disabilities, FERPA and Use of GMU E-mail Addresses for Course Communication, and Title IX Resources and Required Reporting. These policies are also posted at <https://sternscenter.gmu.edu/home/gmu-common-course-policies/>.

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 which 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, co-authored 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 (see <https://academicstandards.gmu.edu/>). 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.

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 GMU. 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 (see <https://studentprivacy.ed.gov/ferpa> and <https://registrar.gmu.edu/ferpa/>). 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 environment for all members of the University community, the University does not discriminate on the basis of 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 (<https://universitypolicy.gmu.edu/policies/sexual-harassment-policy/>). 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.

Diversity and Inclusion: Through its curriculum, programs, policies, procedures, services and resources, GMU strives to maintain a quality environment for work, study and personal growth. An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals.

Diversity is broadly defined to include such characteristics as, but not limited to, race, color, ethnicity, national origin, religion, age, disability, gender identity and expression, pregnancy status, sex and sexual orientation. Diversity also entails different viewpoints, philosophies and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

Students, instructors and staff are all expected to uphold GMU's commitment to equitable access and meaningful inclusiveness for all within the GMU community.

Title IX

Title IX is a federal civil rights law that prohibits discrimination on the basis of sex under any education program or activity receiving federal funding. GMU receives federal funds in many forms and so is required to comply with Title IX.

Sexual assault and sexual harassment are forms of sex discrimination covered by Title IX. Other issues that are investigated under Title IX include stalking, intimate partner violence, gender-based harassment, sexual exploitation, complicity in the commission of any act prohibited by this policy, and retaliation for good faith reporting of any of these forms of conduct or participation in any investigation or proceeding.

More information is at: <https://diversity.gmu.edu/title-ix/what-title-ix/university-title-ix-statement> and <https://www.ed.gov/laws-and-policy/civil-rights-laws/sex-discrimination/Title-IX-and-Sex-Discrimination>

Student Support Resources

GMU has several support resources available to all students. Potentially useful starting points include:

- Mason email: <https://mail.gmu.edu>
- Learning Services: <https://learningservices.gmu.edu>
- Student Health Services: <https://shs.gmu.edu>
- Counseling and Psychological Services: <https://caps.gmu.edu>
- Student Support and Advocacy Center: <https://ssac.gmu.edu>
- University Career Services: <https://careers.gmu.edu>
- Office of the University Ombudsperson: <https://ombuds.gmu.edu>
- Diversity, Equity and Inclusion: <https://diversity.gmu.edu>
- Sexual Misconduct, Harassment and Discrimination resources:
<https://diversity.gmu.edu/equity-access-services/title-ix>
- Title IX Contacts at Mason:
<https://diversity.gmu.edu/equity-access-services/title-ix/who-can-i-speak>

Many other resources are listed under Student Life: <https://www.gmu.edu/student-life>