

Introduction to Geology (GEO 101)

Lecture: MWF 9:00-9:50 a.m., Bond Hall Room 105

Required Text: Marshak, S., 2013, "Essentials of Geology," 4th edition. Norton, Publishers.

Lab Manual: Distributed when lab first meets in the second week of class

Instructor: Dr. Monica Gowan (please call me Monica)

Office: ES 340 (take elevator to Level "03") **Office Hours:** MW 11 a.m.–12:00 p.m. or by appointment

Phone: 650-7207 (Or leave a message with the Geology Dept. at 650-3582) **E-mail:** monica.gowan@wwu.edu

<u>Day</u>	<u>Date</u>	<u>Topic</u>	<u>Readings</u>	<u>Lab Topic</u>
W	Sep 21	Introduction and How Science Works	Ch. 1	
F	Sep 23	Earth in Context	Ch. 1	
M	Sep 26*	Plate Tectonics I	Ch. 2	T 9/27 Plate Tectonics
W	Sep 28*	Plate Tectonics II	Ch. 2	
F	Sep 30	Plate Tectonics and Deforming Rocks	Ch. 9	
M	Oct 1	Catch-up and Exam Review		T 10/4 Igneous Rocks
W	Oct 5	MIDTERM EXAM #1		
F	Oct 7	Minerals	Ch. 3 + Interlude A	
M	Oct 10	Igneous Rocks	Ch. 4	T 10/11 Sedimentary Rocks
W	Oct 12	Weathering & Sedimentary Rocks	Ch. 6 + Interlude B	
F	Oct 14	Metamorphic Rocks	Ch. 7 + Interlude C	
M	Oct 17	Geologic Time	Ch. 10	T 10/18 Metamorphic Rocks
W	Oct 19	Geologic Time	Ch. 10	
F	Oct 21	Catch-up and Exam Review		
M	Oct 24	MIDTERM EXAM #2		T 10/25 Rock Quiz & Campus Tour
W	Oct 26	Volcanoes	Ch. 5	
F	Oct 28	Volcanic Hazards	Ch. 5	
M	Oct 31	Earthquakes	Ch. 8	T 11/1 Streams, Coastlines, Groundwater
W	Nov 2	Earthquake Hazards	Ch. 8	
F	Nov 4	Tsunamis	Ch. 8	
M	Nov 7	Mass Wasting	Ch. 13	T 11/8 Local Geologic Hazards
W	Nov 9	Wave Action & Coasts, Exam Review	Ch. 15.5-15.6	
F	Nov 11	NO CLASSES – Veteran's Day Holiday		
M	Nov 14	MIDTERM EXAM #3		T 11/15 Geology of Washington
W	Nov 16	The Hydrologic Cycle & Streams	Ch. 14	
F	Nov 18	Groundwater	Ch. 16	
M	Nov 21	Glaciers	Ch. 18	T 11/22 Lab Quiz Study Session
W	Nov 23	NO CLASSES – Thanksgiving Holiday		
F	Nov 25	NO CLASSES – Thanksgiving Holiday		
M	Nov 28	Deserts	Ch. 17	
W	Nov 30	Climate Change	Ch. 19	
F	Dec 2	Review for Final Exam		
M	Dec 5	FINAL EXAM (cumulative): 10:30 a.m. – 12:30 p.m.		

* Monica out-of-town – we will have a guest lecturer.

Class Goals and Outcomes

Welcome to Geology 101! The goal of this class is to introduce you to planet Earth: of what it is composed, how it formed, and the processes that occur within and on it. My overarching goal is to help you understand "the big picture" of our home planet and develop a greater appreciation of the environment around you. Together we will embark on a learning adventure to:

- Understand how the three major rock types (igneous, sedimentary and metamorphic) form
- Understand the role of plate tectonics as a general explanatory hypothesis for a variety of geological phenomena, including earthquakes, tsunamis, volcanoes, and mountain-building.
- Understand how internal phenomena (seismicity and volcanism) and surface phenomena (effects of wind, water, ice and gravity) shape Earth's surface and generate natural hazards.
- Understand that Earth is 4.5 billion years old, and that great spans of time are necessary to accomplish many of the changes on Earth during its history.
- Understand that Science is an evidence-based process, subject to re-interpretation with new evidence.

GUR Outcomes

Geology 101 (Introduction to Geology) provides information for the following degree/program outcomes:

	GUR
Outcomes	1. Analyze and communicate ideas effectively in oral, written, and visual forms. 3. Use quantitative and scientific reasoning to frame and solve problems.

Grading

Your grade is determined from lab, lecture exams, and assignments. Lab is required. Lecture exams will contain a combination of multiple choice and fill in/matching/diagram type questions. Assignments will be either online or in-class group activities and scheduled at my discretion. Depending on the overall grade distribution, the final grades may be based on a curve.

Midterms (3 exams equal weight)	40%
Final Exam (cumulative)	25%
Lab	25%
Assignments	10%
	100%

An important note about Canvas! Canvas weights scores differently than I do (it is unable to assign equal weight to assignments worth different numbers of points). As a result, your Canvas grade *should not be trusted*. You can calculate your real grade with the following equation:

$$\text{Quarter grade} = (\text{Average midterm grade} \times 0.4) + (\text{Final exam grade} \times 0.25) + (\text{Lab grade} \times 0.25) + (\text{Assignment scores} \times 0.1)$$

Grading will be based on points gained from the categories listed above. Final letter grades are based on the percentages shown in the table below. Depending on the overall grade distribution, the final letter grades may be based on a curve.

92.5-100%	A	87.5-89.9%	B+	77.5-79.9%	C+	67.5-69.9%	D+
90-92.4%	A-	82.5-87.4%	B	72.5-77.4%	C	62.5-67.4%	D
		80.0-82.4%	B-	70-72.4%	C-	60-62.4%	D-
						<60%	F

Labs

Lab does NOT meet the first week of class. It meets every subsequent week and is a core part of the Geology 101 course. Although we try to keep lab and lecture a bit in sync, there will be times when your lab topic is quite different from what we're discussing in lecture. Because lab and lecture are totally separate, *any questions or concerns you have regarding the lab section of class must be taken up with your teaching assistant ("TA"), not me.*

Missed exams and attendance

Departmental policy: No early exams. If there is a problem and you are unable to attend one of the exams, *it is your responsibility to tell me in advance and work out an alternative.* Make-up exams will be given only with an official excused absence from Student Support Services (OM 100, x3844), the Health Center (x3400), or your coach.

Attendance is not mandatory and you will not be marked down for any absences. However, this is a lecture course and while lecture notes will be posted on Canvas, they should not be considered a substitute for getting subject information in class. Your success in the lecture portion of this course will be closely tied to whether you: 1) read the textbook and 2) attend my lectures which will supplement and expand on content in your textbook.

Your academic success and support services

Please feel free to talk to me about your performance in the course or possible ways you can improve. You can meet with me during my scheduled office hours, MW 10:00-11:00 a.m., or by appointment at another meeting time, which you can request in class or by email. *Please be aware that I will NOT read or reply to student emails outside of Monday-Friday between the hours of 9 a.m. and 5 p.m.*

Western's Tutoring Center provides drop-in tutoring for this course. The Tutoring Center is located in WL280, open M-R 9am-9pm, and Sunday 5-9 pm. See www.wvu.edu/tutoring for additional information.

If you need disability-related accommodations, please notify Disability Resources for Students at 650-3083 (phone); 650-3725 (TTY); email drs@wvu.edu; or on the web at <http://www.wvu.edu/depts/drs/>. Reasonable accommodation for persons with documented disabilities should be established within the first week of class and arranged through Disability Resources for Students.

Western encourages students to seek assistance and support at the onset of an illness, difficulty, or crisis.

- In the case of a medical concern or question, please contact the Health Center: 650-3400 or visit http://www.wvu.edu/chw/student_health/
- In the case of an emotional or psychological concern or question, please contact the Counseling Center: 650-3400 or visit <http://www.wvu.edu/counseling/>
- In the case of a health and safety concern, please contact the University Police: 650-3555 or visit <http://www.wvu.edu/ps/police/>
- In the case of a family or personal crisis or emergency, please contact the Dean of Students: 650-3450 or visit <http://www.wvu.edu/depts/dos/>
- To seek confidential support related to sexual violence, please contact Consultation & Sexual Assault Support (CASAS): 650-3700 or visit http://www.wvu.edu/pws/about_casas.shtml, or contact the Student Health Center, and/or the Counseling Center.
- To report sexual violence, please contact University Police, Bellingham Police, and/or the Title IX Coordinator in Western's Equal Opportunity Office: 650-3307 or visit <http://www.wvu.edu/depts/eoo/>. Faculty are responsible employees who are required to report sex discrimination, including sexual violence that they learn about to the Title IX Coordinator.

Your integrity

You are responsible for knowing the university policies on academic honesty and plagiarism which may be found at <http://www.library.wvu.edu/ref/plagiarism.html>. Students engaging in academic misconduct or dishonest practices on assignments and exams will be dealt with according to the guidelines established by the university. Always use your own words to describe your work.

Cellphones and texting

Please turn off all cellphones during class time – this includes text messaging. Under NO circumstances should a cell phone or pager ring or be answered during class. Under NO circumstances should you use your cell phone (i.e., text messaging, internet surfing) during class or exams.

If you are waiting for an important call, please let me know, but recognize that I may ask you to wait for your call outside. If your work situation requires that you be on call, please discuss this with me prior to class. If you use your cell phone during class FOR ANY REASON you will be asked to leave.

Other appropriate classroom conduct

During lecture, if you choose to talk with others outside of an instructor-led group discussion, you will be asked to leave. ***This means I will stop whatever I am doing, address you directly, and let you know that if you choose to continue talking, you will need to exit the classroom.*** This is a learning environment where your classmates are making a huge investment in their future. Discourteous and disrespectful attitudes and behaviors toward me or your classmates will not be tolerated. If for whatever reason you must arrive late or leave early, please do so quietly and courteously. If you have to be late, take the first available seat you can find. If you have to leave early, select the least disruptive seat possible for your departure when you arrive. I WILL have a problem and address you directly if you consistently arrive late or leave early.

I am committed to establishing and maintaining a classroom climate that is inclusive and respectful for all students. Learning includes being able to voice a variety of perspectives, and classroom discussion is encouraged. While students' expressed ideas may vary and/or be opposed to one another, it is important for all of us to listen and engage respectfully with each other.

I, and Western, are committed to an environment free of discrimination and harassment. Federal and State laws, as well as University policies, protect students, faculty and staff against discrimination based on the following legally protected characteristics: Race, Color, Creed, Religion, National Origin, Sex (including pregnancy and parent status), Age, Disability, Marital Status, Sexual Orientation, Gender Identity and Expression, Genetic Information and Veteran Status. (See Equal Opportunity and Western's Policies on Providing Equal Opportunity and Nondiscrimination and Preventing Sexual Harassment.)

Geology 101 (Introduction to Geology) provides information for the following degree/program outcomes:

	B.A. Geology	B.S. Geology	B.S. Geophysics	GUR
Outcomes	<p>1. Earth has a history of biological and physical change over billions of years.</p> <p>2. Earth's surface is affected by dynamic processes on a range of timescales.</p> <p>3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.</p> <p>4. Earth's interior is dynamic and drives plate tectonics</p> <p>5. Earth scientists use repeatable observations and testable ideas to understand and explain our planet.</p> <p>6. Geology and society are fundamentally inter-related.</p>	<p>1. Earth has a history of biological and physical change over billions of years.</p> <p>2. Earth's surface is affected by dynamic processes on a range of timescales.</p> <p>3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.</p> <p>4. Earth's interior is dynamic and drives plate tectonics</p> <p>5. Earth scientists use repeatable observations and testable ideas to understand and explain our planet.</p> <p>6. Geology and society are fundamentally inter-related.</p>	<p>1. Earth has a history of biological and physical change over billions of years.</p> <p>2. Earth's surface is affected by dynamic processes on a range of timescales.</p> <p>3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.</p> <p>4. Earth's interior is dynamic and drives plate tectonics</p> <p>5. Earth scientists use repeatable observations and testable ideas to understand and explain our planet.</p> <p>6. Geology and society are fundamentally inter-related.</p>	<p>1. Analyze and communicate ideas effectively in oral, written, and visual forms.</p> <p>3. Use quantitative and scientific reasoning to frame and solve problems.</p>

