



GEOL 1211 – CRN 12062 (class) /1111 (labs) – Principles of Earth Science I
Fall 2024: Mo/Wed 1:30 PM - 2:20 PM in UGLC346



INSTRUCTOR

Dr. Benjamin Brunner (*Note: in Spring, class is taught by Dr. Chapman*)
 Office: 404A Geology Building
 E-mail: bbrunner@utep.edu
 Associate Professor, Geological Sciences, Room 404A
 Office hours: *By appointment via email to bbrunner@utep.edu*
I do my best to meet with you asap – the email helps to find a time slot that works best.

LABS START IN THE WEEK OF SEPTEMBER 9, 2024

<i>TA</i>	<i>TA Email</i>	<i>Section</i>	<i>CRN</i>	<i>DAY</i>	<i>Start</i>	<i>End</i>
Stephanie Geogevich	sageorgevich@miners.utep.edu	001	15564	T	8:30	10:20
TBD	TBD@miners.utep.edu	002	12349	T	10:30	12:20
Stephanie Geogevich	sageorgevich@miners.utep.edu	003	15566	T	12:30	2:20
Eli Nyawunu	enyawunu@miners.utep.edu	05	12074	T	2:30	4:20
Jose Cabral	jjcabral@miners.utep.edu	10	13641	W	9:30	11:20
Ryan Helgerson	rthelgerson@miners.utep.edu	10	13842	W	11:30	1:20
Ryan Helgerson	rthelgerson@miners.utep.edu	10	15297	R	8:30	10:20
Eli Nyawunu	enyawunu@miners.utep.edu	3	11280	R	10:30	12:20
Angie Cano	alcano2@miners.utep.edu	4	11281	R	12:30	2:20
Sarafina Middaugh	samidough@miners.utep.edu	5	11892	R	2:30	4:20
Jose Cabral	jjcabral@miners.utep.edu	8	13640	F	8:30	10:20
Angie Cano	alcano2@miners.utep.edu	9	16429	F	10:30	12:20

TAs in green: not their first rodeo. TAs in black: please be nice! ☺ (not that you should not be nice with Stephanie and Eli)

NOTE: you cannot switch labs without prior consent by Dr. Brunner

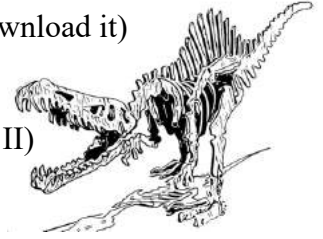
IN A NUTSHELL

- Please note Dr. B’s Killer Rule: Classroom etiquette – after two warnings (e.g., disruptive behavior, social media use, etc.): you are out!
- Assignments such as reading or watching of provided material is essential, the class is front-loaded
- No expensive book (any reading/video assignment is free)
- Class attendance is not enforced, but actively participating in class is critical for your success
- Lab attendance is enforced. More than 2 unexcused absences automatically result in an W (before drop deadline) or an F (after drop deadline)
- 100% median grade for all quizzes (***up to negotiation with instructor in first week of classes!***)



MANDATORY READING BASED ON ASSIGNMENTS (ALL FREE)

- An Introduction to Geology, Johnson et al. (you can read this book online or download it)
<https://slcc.pressbooks.pub/introgeology/>
<https://opengeology.org/textbook/>
- Planet Earth, Benjamin Burger (this book is used in Principles of Earth Science II)
https://en.wikibooks.org/wiki/Planet_Earth
- Historical Geology, Affolter et al.
<https://opengeology.org/historicalgeology/>



MANDATORY VIDEOS ACCESSIBLE FROM GEOGIRL (ALL FREE)

- <https://www.geogirlscience.com>
- <https://www.youtube.com/c/GEOGIRL>



SUGGESTED \$\$ BOOK (if you want to have something nicely printed)

Earth Science by Tarbuck, Lutgens, and Tasa. 15th Edition, Pearson

OTHER RECOMMENDED MATERIAL

- Strongly recommended: EarthViewer (Web, iOS, Android, free of charge):
<https://www.biointeractive.org/classroom-resources/earthviewer>
- Strongly recommended: Periodic Table app (most free versions are perfectly sufficient)
- Recommended: Subscription (free) to ChatGPT (<https://chat.openai.com/chat>) or similar
- For iPad Geeks: UniversalZoom (\$4.99)

COURSE DESCRIPTION

Study of the earth as a planet. A survey of physical process operating in the atmosphere, lithosphere, and biosphere. Includes introduction to metrology, physical geology, soil, and vegetation. This course is divided into four sections. The first section focuses on plate tectonics and earthquakes. In the second section, students will learn about minerals, igneous rocks, and volcanic hazards. Metamorphic rocks and deformation are significant parts of section three together with an introduction to the atmosphere. The course concluded by focusing on climate change, global warming, and desert regions.

LEARNING OUTCOMES AND COURSE OBJECTIVES

- Understand plate tectonics – how it works, what it explains, what it does not explain
- Understand the interrelationships between Earth processes and products/materials
- Recognize various tectonic settings on Earth
- Demonstrate an understanding of plate tectonics and the concept of a dynamic planet
- Understand what drives geologic processes
- Identify minerals by their physical properties, identify rocks by physical properties, composition, texture, and formation and relate them to their environment of formation
- Appreciate the variety of temporal and spatial scales of cycles
- Apply physics, chemistry, biology and mathematics to solve geologic problems
- Draw connections between geology, climate, climate change, and human activities events.

YOUR TIME COMMITMENT IS ESSENTIAL

Please do the math: the rule of thumb for a university class is that per contact hour, you have to invest 3 hours of self-study (homework, reading, preparing of exams, interacting with other students etc). The class meeting is twice a week for a duration 50 minutes, which results in a total of 100 minutes. Multiply this by three, and you obtain 300 minutes corresponding to 5 hours of self-study. In other words – your time investment of should be almost a full workday per week for the Principles of Earth Science I class!

YOUR ARE IMPORTANT TO US, AND WE KNOW THAT “SHIT HAPPENS”

Please contact Dr. Brunner about any concerns, schedule conflicts, etc. in advance or otherwise as soon as possible! Valid excuses include illness, absence with the instructor's prior approval, official University business, etc.

Accommodations are possible for active duty military and others, but arrangements must be made in a timely manner. If you are in the military with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor as soon as possible.

If you think you may have a *disability or if you are experiencing learning difficulties*, please contact the Center for Accommodations and Support Services (CASS), East Union Bldg, Room 106:

Office: 915-747-5148 / Email: cass@utep.edu / <https://www.utep.edu/student-affairs/cass/>

Course Drop Deadline: Friday, November 1, 2024

The College of Science will not approve any student- or faculty-initiated drop requests for a course after that date, except under circumstances of complete withdrawal of all courses due to medical or non-medical reasons.



**Never
swim
alone!**

NOW TO SOME LEGAL LANGUAGE:

Cheating/Plagiarism:

Cheating is unethical and not acceptable. Plagiarism is using information or original wording in a paper without giving credit to the source of that information or wording: it is also not acceptable. Do not submit work under your name that you did not do yourself. You may not submit work for this class that you did for another class. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy. Refer to <http://www.utep.edu/dos/acadintg.htm> for further information.

This is also critical for the use of modern AI tools such as ChatGPT.



YOUR PARTICIPATION IN THE LAB IS ESSENTIAL

(for full information please see Lab Syllabus)

- The purpose of the labs is to active engage with the course material by interaction with your peers, supported by your lab leader/teaching assistant.
- There will be team and group assignments. There will be sign-in sheets to check if you attend the classes and if you arrive on time.
- Not to contributing to team/group efforts will be considered as not adhering to Classroom etiquette – i.e., is a reason to be dropped from the course.

YOUR GRADE (OR WHY THIS CLASS SHOULD BE AN “EASY A”)



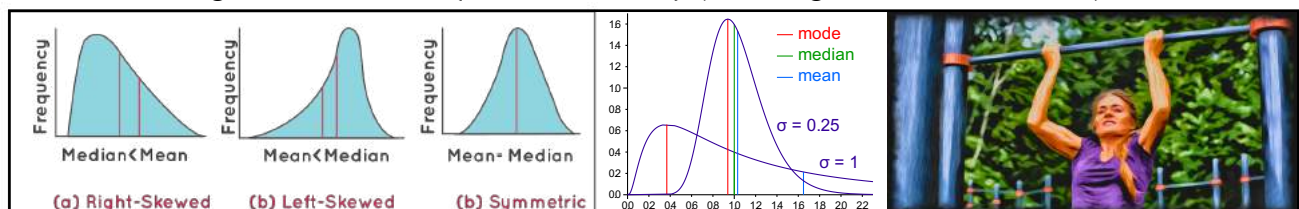
Grades *(up to negotiation with instructor in first week of classes!)*

- **100% median grade for all quizzes on Blackboard**
(missed quizzes typically don't harm you, see comparison below)
- **Bonus points:**
 - Plus 20% reflection assignment
 - Plus up to 20% for extra efforts
(e.g. volunteering/participating in Earth Science events)
- **NO mid term and NO final exam**



Comparison between median and average

- The median is the value separating the higher half of a data sample, a population, or a probability distribution, from the lower half. In simple terms, it may be thought of as the "middle" value of a data set. For example, in the data set {1, 3, 3, 6, 7, 8, 9}, the median is 6, the fourth number in the sample.
- The type of average taken as most typically representative of a list of numbers is the arithmetic mean – the sum of the numbers divided by how many numbers are in the list. For example, the mean average of the numbers {1, 3, 3, 6, 7, 8, 9} (summing to 37 and 7 numbers) is ~5.3.



SCHEDULE OF TOPICS – *subject to change!*

Date:	Topic:	Quiz	Reading	
Week 1 08/26/24	<ul style="list-style-type: none"> Why are you here? – Expectations for this class How to read a scientific textbooks Planet formation 	Y	Syllabus & <i>Open Geo</i> 8.1-8.3, 2.2	
Week 2 09/02/24	<ul style="list-style-type: none"> Labor Day Monday 09/02/24 – University is closed Plate Tectonics: Introduction and History 	Y	BB assignment & <i>Open Geo</i> 1.4, 2.1-2.3	
Week 3 09/09/24	<ul style="list-style-type: none"> Plate Tectonics: Subduction Zones Plate Tectonics: Convergent orogens 	Y	BB assignment & <i>Open Geo</i> 2.3-2.4	
Week 4 09/16/24	<ul style="list-style-type: none"> Plate Tectonics: Mid-Ocean Ridges and Rifts Plate Tectonics: Hotspots and Mantle Plumes 	Y	BB assignment & <i>Open Geo</i> 2.5, 2.7	
Week 5 09/23/24	<ul style="list-style-type: none"> Plate Tectonics: Hotspots and Mantle Plumes Minerals: Atoms and ionic groups 	Y	BB assignment & <i>Open Geo</i> Ch. 3	
Week 6 09/30/24	<ul style="list-style-type: none"> Minerals: Definitions & bonding Igneous Rocks 	Y	BB assignment & <i>Open Geo</i> Ch. 4	
Week 7 10/07/24	<ul style="list-style-type: none"> Volcanoes Weathering and erosion 	Y	BB assignment & <i>Open Geo</i> Ch. 5	
Week 8 10/14/24	<ul style="list-style-type: none"> Sedimentary rocks Depositional Environments 	Y	BB assignment & <i>Open Geo</i> Ch. 5, 8	
Week 9 10/21/24	<ul style="list-style-type: none"> Depositional Environments Metamorphic Rocks 	Y	BB assignment & <i>Open Geo</i> Ch. 7	
Week 10 10/28/24	<ul style="list-style-type: none"> Relative Dating Geochronology <p>Friday 11/01/24 Fall Drop/Withdrawal Deadline</p>	Y	BB assignment & <i>Open Geo</i> Ch. 9	
Week 11 11/04/24	<ul style="list-style-type: none"> Earth History 1 - Precambrian Earth History 2 - Paleozoic 	Y	BB assignment & <i>Open Geo</i> Ch. 10, 11	
Week 12 11/11/24	<ul style="list-style-type: none"> Earth History 3 - Mesozoic Earth History 4 - Cenozoic 	Y	BB assignment & <i>Open Geo</i> Ch. 12, 13	
Week 13 11/18/23	<ul style="list-style-type: none"> Faulting and Earthquakes Deformation 	Y	BB assignment & <i>Open Geo</i> Ch. 1, 15	
Week 14 11/25/24	<ul style="list-style-type: none"> Buffer time / Extra topics: Earth's Future <p>Thu/Fri Nov 28-29: Thanksgiving – University is closed</p>	N	BB assignment	
Week 15 12/02/24	<ul style="list-style-type: none"> Water, Deserts, Climate Change, Energy and Mineral Resources Review of class <p>Thursday Dec 05, 2024: Last Day of Classes</p>	Y	BB assignment & <i>Open Geo</i> Ch. 16	
Week 16 12/11/24	<i>Final Exams: GOOD LUCK!</i>		N	None for us!

