

Geology 104
PHYSICAL GEOLOGY
Fall 2021

Instructor: Samantha Kaplan

Office: D-327 Science Building

Office Hours: **In person:** Tuesdays & Thursdays 1:00 - 2:00 pm, and by appointment
Virtual: Mondays 1:00 - 2:00 pm, and by appointment

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Required Texts: *Earth: An Introduction to Physical Geology*, 13th ed. by Tarbuck, Lutgens, Linneman and Tasa

Lecture: Tuesday & Thursday 11:00 am - 12:15 pm D102 Science

Lab: Tuesday (Sect 1) or Thursday (Sect 2) 2:00 - 3:50 pm D324 Science

Students with Disabilities: Students with learning and/or physical disabilities are encouraged to contact me to make any special arrangements for taking lecture notes or exams.

Catalog Description: 4 credits. Introduction to the study of minerals and rocks and the processes that act upon and within the earth. 3 hrs lecture, 2 hrs lab per wk.

General Education Designation: GEP: NSc

Learning Outcomes:

- Explain major concepts, methods, or theories in the geological sciences, including:
 - Recognize the taxonomy of minerals and rocks.
 - Apply scientific method with respect to plate tectonics and Earth's interior.
- Interpret information, solve problems, and make decisions by applying geological concepts, methods, and quantitative techniques, including:
 - Be able to interpret topographic and geologic maps.
 - Apply knowledge and make predictions of Earth processes, resources and geohazards.
- Describe the relevance of aspects of the geoscience to their lives and society.

- Assess the interrelationship of geologic processes, geologic events and life on Earth.
- Recognize the causes and consequences of geological hazards and climate change.

Classroom Policies

- Attendance is required for all lecture and lab sessions.
- I do not post lecture notes on-line and I do not share my lecture notes with students. Please do not ask. If you miss class, I will post Power Point lecture slides following class. I do not post slides before class.
- E-mail communication must contain a subject line, the course number (Geol 104) and be courteous and coherent for a response.
- Canvas will be used for most course communication outside of Lecture and Lab. Please check Canvas regularly for course updates and announcements.

COVID Policies

- Follow all campus guidelines related to COVID (<https://www.uwsp.edu/coronavirus/Pages/default.aspx>)
- Do not come to class if you do not feel well. Even if you think "it is just allergies" or that extra beer you had the night before.
- Well-fitting, 2-layered (or plus) or surgical masks are required. NO BANDANAS OR NECK GAITERS. (<https://www.uwsp.edu/coronavirus/Documents/UWSPChancellorOrder%208.6.2021.pdf>). If your nostrils are visible, you will be asked once to re-position your mask. The second time, you will be asked to leave the classroom.
- Lecture and lab will meet in person so long as conditions related to COVID permit.
- Online accommodations will only be made in the event of illness, mandatory quarantine, or other personal emergency. This includes the professor!
- Practice social distancing to the extent possible in the classroom and lab room. A second classroom will be available to spread out during the lab sessions for those who want more space.
- If at any point you are confused or uncomfortable about COVID protocols, please ask!

Labs

- The Geology 104 lab will parallel lecture and is designed to provide you hands-on experience identifying rocks and earth materials. You will also learn to interpret geological and topographic maps, as well as use and apply other geological analysis techniques.
- Laboratory sessions are mandatory.
- Excused absences for medical situations or personal emergencies are permitted with prior approval only.
- Unexcused absences will result in a 10% deduction in that week's lab exercise score.
- **Close-toed shoes are REQUIRED.** No other protective clothing is necessary, but the rock labs can be grimy. Dress accordingly.
- Please be prompt to lab and bring your textbook unless instructed otherwise.
- There is no required lab manual or book, but if you have a rock/mineral identification guide of your own, you are welcome to bring it!

Lab Activities

- Each week (mostly) there will be a new lab exercise (11 in total).
- Lab exercises will be initiated during the in-person meeting and completed on your own if not finished during class.
- Lab exercises are typically due one week after being assigned (if not completed during the initial lab period).
- Materials to complete the labs outside of class will be available in D322 Science, be provided for home use, or available online.
- There will be four (4) lab tests spaced throughout the semester. These short tests (30 min) will take place during the first part of the in-person lab session.

Assessment:

- **Labs:** There will be a total of eleven (11) lab exercises, each worth 40 semester points.
- **Lab Tests:** Four (4) non-cumulative lab tests, each worth.
- **Exams:** There will be three (3) exams covering lecture and laboratory content. Exams are non-cumulative, but later exams may build on previous content. Each exam is worth 75 semester points.
- **Attendance:** Attendance is required for lecture and lab, unless otherwise excused beforehand. Attendance is worth 6% of your semester grade, not including points deducted from missed activities.
- **In-class activities:** There will be periodic in-class activities (approx. 5) and discussions during the lecture portion of the course.
- **Assessment breakdown:** The course is scored out of 650 semester points. Lab, including exercises and tests, will make up 325 points or 50% of your course grade. Attendance, lecture activities, and exams will constitute the other 325 points or 50% of your semester grade.
- **Disclaimer:** These weights could change slightly. Refer to Canvas for updates.

	Number	Points Each	Points Total	Percent Total
Lab Exercises	11	15	165	25%
Lab Tests	4	40	160	25%
Attendance	40	1	40	6%
In-class activities	5	12	60	9%
Exams	3	75	225	35%
Total			650	100%

Final Letter Grades: Letter grades will be assigned as follows:

Percent	Letter Grade
≥93	A
90-92.9	A-
87-89.9	B+
83-86.9	B
80-82.9	B-
77-79.9	C+
73-76.9	C
70-72.9	C-
67-69.9	D+
63-66.9	D
≤62.9	F

Student Rights and Responsibilities

- UWSP has guidelines regarding student rights and responsibilities in class and on campus. These are outlined on the Dean of Student's website and in the Student Handbook. Do review these resources if you have not already:
 - <https://www.uwsp.edu/dos/Pages/stu-conduct.aspx>
 - <https://www.uwsp.edu/dos/Pages/stu-academic.aspx>
 - <https://www.uwsp.edu/dos/Pages/handbook.aspx>
 - <https://www.uwsp.edu/dos/Documents/AcademicIntegrityBrochure.pdf>
 - <https://www.uwsp.edu/dos/Documents/UWSP14-Final2019.pdf>

Class Schedule

Date	Class Topic	Reading
R 2-Sep	Introduction	
LAB	NO LAB	

T	7-Sep	Earth's Formation	Chapter 1 p. 7-10, 18-31; Chapter 22 p. 624-636
R	9-Sep	Plate tectonics cont'd	Chapter 2
	LAB	Lab Intro; Earth Materials	Chapter 3 p. 70-73; Bring a rock
T	14-Sep	Mineral Chemistry & Properties	Chapter 3 p. 74-79, 83-96
R	16-Sep	Igneous rocks	Chapter 4 p. 102-117
	LAB	Lab 1 - Minerals	Chapter 3 p. 79-83, 89-96; Canvas Resources
T	21-Sep	Igneous Processes	Chapter 4 p. 117-128
R	23-Sep	NO CLASS	Worksheet
	LAB	NO LAB	
T	28-Sep	Volcanic Processes	Chapter 5
R	30-Sep	Weathering & Soils	Chapter 6
	LAB	Lab 2 - Igneous Rocks	Chapter 4 p. 117-129; Canvas Resources
T	5-Oct	Sedimentary Rocks	Chapter 7 p. 202-220
R	7-Oct	Sedimentary Environments	Chapter 7 p. 221-229; Chapter 23 p. 664-669
	LAB	Lab 3 - Sedimentary Rocks	Chapter 7 p. 206-221; Canvas Resources
T	12-Oct	EXAM 1 (Chapters 1-6)	
R	14-Oct	Metamorphic Rocks	Chapter 8 p. 234-246
	LAB	Lab 4 - Metamorphic Rocks	Chapter 8 p. 241-256; Canvas Resources
T	19-Oct	Metamorphic Environments	Chapter 8 p. 247-256
R	21-Oct	NO CLASS MEETING	
	LAB	Lab 5 - Mystery Rock	Canvas Resources
T	26-Oct	NO CLASS MEETING	
R	28-Oct	Geologic Time	Chapter 9 p. 262-265; Chapter 22 p. 634-654
	LAB	Lab 5 - Mystery Rock contd.	Canvas Resources
T	2-Nov	Stratigraphy & Dating	Chapter 9 p. 265-284
R	4-Nov	Stratigraphy & Dating	Chapter 9 p. 265-284
	LAB	Lab 6 - Topographic Maps	Chapter 10 p. 305-306, 308-309; Canvas Resources
T	9-Nov	Structure: Faults & Folds	Chapter 10 p. 290-305
R	11-Nov	Earth's Interior & Earthquakes	Chapter 11 p. 308-330, 338; Chapter 12
	LAB	Lab 7 - Geologic Maps	Chapter 10 p. 305-306, 308-309; Canvas Resources
T	16-Nov	EXAM 2 (Chapters 7-10)	
R	18-Nov	Earth's Interior & Earthquakes	Chapter 11 p. 308-330, 338; Chapter 12
	LAB	Lab 7 - Geologic Maps cont'd.	Chapter 10 p. 305-306, 308-309; Canvas Resources
T	23-Nov	Streams & Floods	Chapter 16 p. 438-454; 462-466
R	25-Nov	THANKSGIVING	
	LAB	NO LAB - Stream Exercise	
T	30-Nov	Glacial Geology	Chapter 18
R	2-Dec	Glacial Geology Cont'd.	Chapter 18
	LAB	Lab 8 - Glaciers	Chapter 18 p. 514-522, 531-532; Canvas Resources

T	7-Dec	Groundwater & Karst	Chapter 17
R	9-Dec	Geology & Climate	Chapter 21
	LAB	Lab 8 – Glaciers	Chapter 18 p. 514-522, 531-532; Canvas Resources
R	16-Dec	EXAM 3 (Chapters 11, 16-18, 21)	10:15AM - 12:15PM