

SIO 50: Introduction to Physical Geology

MWF 1:00 PM – 1:50 PM

York 4080A (Lab room is York 3030)

Instructor: Geoffrey Cook

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Hi Everyone! We are thrilled to be introducing you to the world of geology and Earth science! Regardless of your background, we hope that you will find the class interesting and informative. Please remember that we are here to help, so do not be afraid to ask for help, seek guidance, or to discuss any concerns or issues you may have. We encourage questions and discussion in both lecture and lab. We are happy to re-address or clarify concepts. We hope this class is a positive learning experience for everyone!

Student Learning Outcomes

- Explain Earth's anatomy and plate tectonics in the context of its formation in the Solar System.
- Discuss the transfer of matter and energy between various Earth systems and reservoirs.
- Recognize the depth of geologic time and identify significant events in Earth history.
- Categorize Earth materials and the processes associated with their formation.
- Explain geologic hazards and their impact on society.
- Analyze the relationship between natural resources and human consumption.

Class Organization

LECTURE: lectures are in person MWF (York 4080A). Lecture PowerPoints will be posted on Canvas, as PDF files ahead of lecture. Please read the assigned chapters in the textbook. There are weekly reading quizzes and guided learning assignments (GLE's) on Canvas (due each week on Sunday at 11:59 PM (Pacific). Work needs to be completed by the deadline; late work will not be accepted without prior communication or official documentation. In addition, there is a midterm and a final exam, both scheduled in-person.

LAB: Lab sessions will be in person during your scheduled lab period (M/W 11-12:50 or T/TH 2:00-3:50). During these sessions, a lab instructor will present the material for the assignments and then work with you on the assignments. Assignments will be given on M/Tu, and will be due at the end of lab sessions on W/Th. You must attend your scheduled lab session only and arrive **on-time**. Late arrivals (greater than 10 minutes) to lab (without communication or documentation) will result in point deductions from lab-work. You are responsible for completing your own lab work. You are allowed to work with others during lab but you may not copy answers from other students in any way. Copying or providing answers to others will result in an automatic zero-grade and may result in a referral to the Academic Integrity Office.

FIELD TRIP: There is a required field trip—Friday evening (Nov. 1st) to Saturday evening (Nov. 2nd) to Joshua Tree National Park. Details will be given in class. Participation is required; please mark your calendars accordingly.

GRADING:

Mid-term exam: 20%

Guided Learning Assignments: 10%

Final exam: 25%

Lab assignments: 30%

Weekly lecture quizzes: 10%

Field Trip Participation: 5%

Note: "A" is 93% and up; "A-" is 90-92.9%; "B+" is 87-89.9%; "B" is 83-86.9%; "B-" is 80-82.9%. Breakdown is the same for "C" and "D" range; <60% is an "F". There is no curve for the class.

Textbooks:

Earth, Portrait of a Planet (7th ed., Marshak) and *Laboratory Manual for Intro. Geology* (4th ed., Ludman and Marshak) are required—you need access to them, and to the Norton (publisher) website to access the Guided Learning Exercises. The lecture text (Marshak) is automatically digitally provided through an inclusive access program (for a significant discount) through the UCSD bookstore and the publisher—it will be available to you through a link on Canvas under “MODULES”. The lab manual is available as a hard-copy in the bookstore. Please note that you need a new copy of the lab manual, 4th edition.

Academic Integrity (Students’ Responsibilities)

Students are expected to complete the course in compliance with the instructor’s standards. No student shall engage in any activity that involves attempting to receive a grade by means other than honest effort. University policies, regulations, and standards of conduct can be found on the Academic integrity office website <https://academicintegrity.ucsd.edu/>. Course content is protected and may not be shared, uploaded, or distributed. Use of Artificial Intelligence (ChatGPT, text generators, etc.) is prohibited in this class for any reason; all work must be your own and in your own words, regardless of the assignment.

Classroom Conduct:

Please show respect to your instructors and classmates. There is no food or drink allowed in the lab room. You do *not* need to purchase any lab-related equipment such as a coat or eye-protection. **Note:** cell phones need to be put away (and kept away) during lecture and lab.

SIO 50 Schedule (Fall 2024)

Note: This is an outline. It is subject to change; however, never without notification, or to *advance* due dates.

<u>Date</u>	<u>Lecture Topic</u>	<u>(Chapter in <i>Earth</i>)</u>	<u>Lab Topic(s)</u>
9-27	Introduction to the class/Earth	Ch. 1+2	NO LAB
9-30	Introduction to the Earth	Ch. 1+2	NO Lab M/Tu
10-2	Tectonics	Ch. 3+4	
10-4	Tectonics	Ch. 3+4	Introduction (W/TH)
10-7	Minerals	Ch. 3+4	Plate Tectonics
10-9	Minerals	Ch. 5	
10-11	Minerals	Ch. 5	
10-14	Igneous rocks	Ch. 6	Mineral Identification
10-16	Igneous rocks	Ch. 6	
10-18	Sedimentary rocks	Ch. 7	
10-21	Sedimentary rocks	Ch. 7	Igneous rocks
10-23	Metamorphic rocks	Ch. 8	
10-25	Volcanoes	Ch. 9	
10-28	Volcanoes/Exam Review	Ch. 9	Sedimentary rocks
10-30	MIDTERM EXAM		
11-1	NO CLASS (prepare for field trip)		

Friday/Saturday Nov. 1st-2nd – Overnight trip to Joshua Tree N.P. (REQUIRED)

11-4	Geologic time/Fossils	Ch. 12/13, Int. E	Metamorphic rocks
11-6	Geologic time	Ch. 12/13	
11-8	Geologic structures	Ch. 11	
11-11	NO CLASS (Veterans Day)		NO LAB (M/Tu)
11-13	Geologic structures	Ch. 11	
11-15	Earthquakes and tsunamis	Ch. 10	Maps (W/TH)
11-18	Glaciers and climate change	Ch. 22	Geologic Time and fossils
11-20	Mass wasting; landscape evolution	Ch. 16	
11-22	Mass wasting; landscape evolution	Ch. 16	
11-25	Streams and floods; groundwater	Ch. 17; Ch. 19	Structures and EQ's (M/Tu)
11-27	Water and hydrologic processes	Int. F	
11-29	NO CLASS (Thanksgiving Holiday)		NO LAB W/TH
12-2	Energy and natural resources	Ch. 14;15	M/TU: Field Trip: La Jolla
12-4	Energy and natural resources	Ch. 14;15	
12-6	Sustainability and the Earth system		

Final Exam: Monday, December 9th 11:30am-2:30pm (York Hall 4080A)