

SIO 50: Introduction to Physical Geology
MWF 1:00 PM – 1:00 PM
Vaughan 100 (SIO), (Lab room: Vaughan 147, SIO)

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Hello! We are thrilled to be introducing you to the exciting world of geology and Earth science! Regardless of your background, we believe you will find the class both interesting and informative. Throughout the quarter, we ask that you remember that we are here to help, so please do not be afraid to ask for help, seek guidance, or to discuss any concerns or issues you may have. We always encourage questions and discussion in both lecture and lab. We are always 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

LECTURES: I will present the lectures live (synchronously) MWF in VH 100 during our scheduled class times. These sessions will be podcasted and posted on Canvas. Lectures will be posted ahead of time on Canvas as PDF files for your convenience. **Everyone** should read the assigned chapters in the textbook. We will have weekly reading quizzes and guided learning assignments through Canvas (**DUE** on **SUNDAY, 8PM** Pacific). In addition, there will be midterm and a final exam, both scheduled in-person.

LABS: Lab sessions will be in person (but NOT podcasted) during your scheduled lab period (M/W 11-12:50 or T/TH 2:30-4:20). 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** by the **end of lab** on W/Th.

FIELD TRIP:

There is a required field trip, leaving on Friday evening (May 6th) and returning Saturday evening (May 7th) to Joshua Tree National Park. Details will be given in class. Participation on this excursion will count towards your grade, so please mark your calendars accordingly.

GRADING:

Mid-term exam: 20%

Guided Learning Assignments: 10%

Final exam: 20%

Lab assignments: 30%

Weekly lecture quizzes: 15%

Field Trip: 5%

Textbooks:

The texts for the class are: ***Earth, Portrait of a Planet, 6th ed.*** by Marshak, and ***Laboratory Manual for Intro. Geology, 4th ed.*** by Ludman and Marshak. The books are required—you will

need access to them, and also to the W.W. Norton (publisher) website to access the Guided Learning assignments. Please note that books are digitally provided through an inclusive access program for a significant discount through the UCSD bookstore and the publisher. From the UCSD Bookstore:

“Your digital course materials are provided by the UC San Diego Bookstore through Canvas and are free for the first two weeks of classes. After two weeks, your student account will be charged a special reduced price unless you opt out. **PLEASE NOTE:** If you decide to opt out you *must* complete the process by **April 9, 2022** and you *will* be responsible for sourcing the materials elsewhere. They are necessary for the class.

To opt-out: click the RedShelf link in Canvas→click View Course Materials→Scroll down to the gray opt-out button and follow the prompts to opt out. For any questions about billing please contact textbooks@ucsd.edu.”

COVID-19 Information

Sadly, the pandemic is ongoing. Please do NOT come to class if you are ill for any reason. This is especially important if you test positive for COVID-19. Accommodations will be made for lecture or lab absences. That said, please be honest and don't take advantage of the situation.

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 at <http://www.ucsd.edu/current-students/organizations/academic-integrity-office/>. **Note** that course content is protected and may not be shared, uploaded, or distributed.

Classroom Conduct:

Please show respect to your instructors and classmates. Masks are currently **required** in the classroom setting, and there is no food or drink allowed in the lab room. If you need to remove your mask, please leave the classroom to do so until further notice.

(CLASS SCHEDULE ON NEXT PAGE)

SIO 50 Schedule, Spring 2022

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>
3-28	Introduction to the Earth	Ch. 1+2	NO LAB Monday/Tuesday
3-30	Tectonics	Ch. 3+4	
4-1	Tectonics	Ch. 3+4	Introduction
4-4	Tectonics	Ch. 3+4	Plate Tectonics
4-6	Minerals	Ch. 5	
4-8	Minerals	Ch. 5	
4-11	Igneous rocks	Ch. 6	Minerals
4-13	Igneous rocks	Ch. 6	
4-15	Weathering & erosion	Ch. 7	
4-18	Sedimentary rocks and soils	Ch. 7	Igneous rocks
4-20	Metamorphic rocks	Ch. 8	
4-22	Metamorphic rocks	Ch. 8	
4-25	Volcanoes	Ch. 9	Sedimentary rocks
4-27	Volcanism/review for exam	Ch. 9	
4-29	MIDTERM EXAM		
5-2	Geologic time	Ch. 12/13	Metamorphic rocks
5-4	Geologic time	Ch. 12/13	
5-6	Fossils and biostratigraphy	Int. E	
<i>Friday/Saturday May 6th-7th – Overnight trip to Joshua Tree N.P.</i>			
5-9	Geologic structures	Ch. 11	Geologic Time and fossils
5-11	Geologic structures	Ch. 11	
5-13	Earthquakes and tsunamis	Ch. 10	
5-16	Glaciers and climate change	Ch. 22	Structures and Earthquakes
5-18	Mass wasting; landscape evolution	Ch. 16	
5-20	Mass wasting; landscape evolution		
5-23	Water and hydrologic processes	Int. F	Maps (M/Tu)
5-25	Streams and floods	Ch. 17	
5-27	Groundwater	Ch. 19	H ₂ O and landscapes (W/Th)
5-30	NO CLASS (MEMORIAL DAY)		NO LAB Monday/Tuesday
6-1	Energy and natural resources	Ch. 14/15	
6-3	Sustainability and the Earth system		Field Trip: La Jolla shores

Final Exam: Thursday, June 9th 11:30-2:30pm (Vaughan Hall 100)