SIO 50: Introduction to Earth and Environmental Science
MWF 2:00 PM – 2:50 PM (Remote)

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Hi! We are thrilled to be introducing you to the exciting world of Geology and Earth Science! Regardless of your background, we hope that 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 inhibited to visit during office hours, seek help/guidance, or to discuss any concerns or issues you may have. We always encourage questions and discussion in both lecture and lab. Furthermore, 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 (PLEASE read carefully):

LECTURES: I will present lectures live (synchronously) on Monday and Wednesday during our scheduled class times. Fridays will be independent work (reading, etc.) time. All sessions will be recorded and posted on Canvas. You are encouraged (please) to attend, if possible, but you may participate asynchronously. Lectures will be posted ahead of time on Canvas as PDF files for your convenience. *Everyone* should read the assigned chapters in the text book. We will have weekly quizzes and online assignments through Canvas that will be based on both the readings and my lecture PowerPoints. In addition, there will be a midterm and a final exam. Friday will be designated for independent reading and work time

LABS: Lab sessions will be presented on Zoom during your scheduled lab periods (M/W 11-12:50 or T/TH 1-2:50). During these sessions, a lab instructor will present the material for the assignments (10-15-minute presentation) and then work with you on the assignments. As with lecture, the lab presentations will be recorded and posted on Canvas. You may participate in lab asynchronously, but, if possible, synchronous participation is appreciated!

Note that all work is open-note, open-book, including exams. You are expected to complete your own work, however, and not to plagiarize material.

Grading Rubric:

Mid-term exam (on Canvas): 20%
Final exam (on Canvas): 20%
Weekly lecture quizzes (on Canvas): 20%
Guided Learning (on Canvas) assignments: 10%
Lab and Lab assignments: 30%

Textbooks:

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, and have been digitally provided to you already with an inclusive access program (for a significant discount) through the UCSD bookstore and the publisher. You are responsible for reading the chapters assigned, and the exams will include material covered in the text. In addition, you will need to have official access to the books to access the online quizzes and guided learning assignments.

From the 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. If you decide to opt out you must complete the process by ***October 9th, 2021*** *and you will be responsible for sourcing the materials elsewhere.*
For any questions about billing please contact textbooks@ucsd.edu.
For any questions about using your eBook please reference RedShelf Solve.

To opt-out:

- *Click the RedShelf link in CanvasClick*
- *View Course Materials*
- *Scroll down to the gray opt-out button and follow the prompts to opt out.*

You will have until Saturday, ***October 9th*** *to complete this process and you will be responsible for getting access to the materials elsewhere.*

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. This includes (but is not limited to) websites such as "Coursehero" and "Chegg".

(Continued below)

SIO 50 Lecture schedule (Lab schedule follows below)

General Note: This syllabus is an outline of proposed events. It is subject to change; however, never without notification, and never to advance the due dates of assignments.

Note that lectures will meet on Zoom on Mondays and Wednesdays; Fridays will be reserved for your independent reading and work time. Labs will meet on Monday/Wednesday and Tuesday/Thursday on Zoom. All meetings will be recorded.

Date	Lecture Topic (Readings in Earth)	Quiz/assignments DUE (with chapters)
9-23	Introduction to the Earth (Ch. 1/2)	N/A
9-27	Introduction to the Earth (Ch. 1/2)	Sunday, 10/3 (Ch. 1-4)
9-29	Tectonics (Ch. 3/4)	
10-4	Minerals (Ch. 5)	Sunday, 10/10 (Ch. 5+6)
10-6	Igneous Rocks (Ch. 6)	
10-11	Sedimentary rocks and soils (Ch. 7)	Sunday, 10/17 (Ch. 7+8)
10-13	Metamorphic rocks (Ch. 8)	
10-18	Volcanoes (Ch. 9)	Sunday, 10/24 (Ch. 9)
10-20	Volcanoes (Ch. 9)	
10-25	**MIDTERM EXAM (Canvas exam)**	Sunday, 10/31 (Ch. 11)
10-27	Geologic structures (Ch. 11)	
11-1	Fossils and biostratigraphy (Int. E) and Geologic time (Ch. 12/13)	Sunday, 11/7 (Int. E, Ch. 12+13)
11-3	Geologic time and history of Earth (Ch. 12/13)	
11-8	Earthquakes and tsunamis (Ch. 10)	Sunday, 11/14 (Ch. 10 +16)
11-10	Mass wasting (landslides) (Ch. 16)	
11-15	Water and hydrologic processes (Int. F)	Sunday, 11/21 (Int. F; Ch. 17,19)
11-17	Streams and floods (Ch. 17) and Groundwater (Ch. 19)	
11-22	Glaciers and climate change (Ch. 22)	Sunday, 11/28 (Ch. 22)
11-24	Glaciers and climate change (Ch. 22)	
11-29	Energy and natural resources (Ch. 14/15)	Sunday, 12/5 (Ch. 14+15)
12-1	Sustainability and the Earth system (No chapter)	

Final Exam (on Canvas): Wednesday, December 8th 3-6 pm (details will be given in class)

(Continued below)

SIO 50 Laboratory Schedule

The lab portion of this class comprises 30% of your overall course grade. It will consist of weekly presentations by the lab instructors (recorded and posted) and exercises made available through Canvas. You will need to read assigned chapters in the lab manual, and complete the exercises weekly. All assignments are open-note, open-book. All lab work will be due on Sunday evenings, at 8 PM (Pacific Standard Time).

Week of	Lab	Laboratory Topic	Reading (Lab Manual, Ludman & Marshak)
9-23	**W/Th**	**NO LAB**	**N/A**
9-27	M/Tu	Introduction	Ch. 1
	W/Th	(continue Introduction)	
10-4	M/Tu	Tectonics	Ch. 2
	W/Th	(continue tectonics)	
10-11	M/Tu	Minerals (and the rock cycle)	Ch. 3 (and Ch. 4)
	W/Th	(continue minerals)	
10-18	M/Tu	Igneous Rocks	Ch. 5
	W/Th	(continue igneous rocks)	
10-25	M/Tu	Sedimentary Rocks	Ch. 6
	W/Th	(continue sedimentary rocks)	
11-1	M/Tu	Metamorphic Rocks	Ch. 7
	W/Th	(continue metamorphic rocks)	
11-8	M/Tu	Geologic Time	Ch. 12
	W/Th	**NO LAB W/TH (Veterans Day)**	
11-15	M/Tu	Topographic maps	Ch. 9
	W/Th	(continue topographic maps)	
11-22	M/Tu	Geologic Structures	Ch. 10
	W/Th	**NO LAB W/TH (Thanksgiving)**	
11-29	M/Tu	Earthquakes and Tsunamis	Ch. 11
	W/Th	Water	Ch. 13+14