

# **SIO 50: Introduction to Earth and Environmental Science**

## **MWF 2:00 PM – 2:50 PM (Remote, Spring 2021)**

**Instructor:** Geoffrey Cook

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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 you further your education, 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:***

Because we are offering the class remotely, the traditional lecture/lab breakdown will be slightly modified. I will do my best to substitute experiential opportunities whenever possible.

**LECTURES:** I will present the lectures live (synchronously) MWF during our scheduled class times. However, these 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.

**LABS:** Lab sessions will happen synchronously 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 once again if possible, your synchronous participation is appreciated!

The course breakdown is as follows:

Mid-term exam: 20%

Final exam: 20%

Weekly lecture quizzes: 20%

Lecture assignments: 10%

Lab and Lab assignments: 30%

### **Textbooks**

The lecture text for the class is *Earth, Portrait of a Planet, 6<sup>th</sup> ed.* by Marshak and *Laboratory Manual for Intro. Geology, 4<sup>th</sup> ed.* by Ludman and Marshak. The books are required and have been digitally provided with an inclusive access program for a significant discount through the bookstore and the publisher. You are responsible for reading the chapters assigned, and the exams will include material covered in the text.

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 10, 2021** 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](mailto:textbooks@ucsd.edu).

### **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/](http://www.ucsd.edu/current-students/_organizations/academic-integrity-office/).

## **SIO 50 Schedule (Lecture)**

**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.

<b><u>Date</u></b>	<b><u>Lecture Topic (Readings in Earth)</u></b>	<b><u>Quiz/assignments DUE (with chapters)</u></b>
3-29	Introduction to the Earth (Ch. 1/2)	4/4/21 (Ch. 1-4)
3-31	Tectonics (Ch. 3/4)	
4-2	Tectonics (Ch. 3/4)	
4-5	Minerals (Ch. 5)	4/11/21 (Ch. 5+6)
4-7	Minerals (Ch. 5)	
4-9	Igneous Rocks (Ch. 6)	
4-12	Igneous Rocks (Ch. 6)	4/18/21 (Ch. 7+8)
4-14	Sedimentary rocks and soils (Ch. 7)	
4-16	Metamorphic rocks (Ch. 8)	
4-19	Volcanoes (Ch. 9)	4/25/20 (Ch. 9)
4-21	Volcanoes (Ch. 9)	
4-23	Review for exam	

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<u>Date</u>	<u>Lecture Topic (Readings in Earth)</u>	<u>Quiz/assignments DUE (with chapters)</u>
4-26	<b>MIDTERM EXAM (Canvas exam)</b>	5/2/21 (Int. E; Ch. 12+13)
4-28	Fossils and biostratigraphy (Int. E)	
4-30	Geologic time and history of Earth (Ch. 12/13)	
5-3	Geologic structures (Ch. 11)	5/9/21 (Ch. 11)
5-5	Geologic structures (Ch. 11)	
5-7	Geologic structures (Ch. 11)	
5-10	Earthquakes and tsunamis (Ch. 10)	5/16/21 (Ch. 10 +16)
5-12	Earthquakes and tsunamis (Ch. 10)	
5-14	Mass wasting (landslides) (Ch. 16)	
5-17	Glaciers and climate change (Ch. 22)	5/23/21 (Ch. 22)
5-19	Glaciers and climate change (Ch. 22)	
5-21	Water and hydrologic processes (Int. F)	
5-24	Water and hydrologic processes (Int. F)	5/30/21 (Int. F; Ch. 17,19)
5-26	Streams and floods (Ch. 17)	
5-28	Groundwater (Ch. 19)	
5-31	<b>NO CLASS (Memorial Day) (VIRTUAL DAY OFF)</b>	6/6/21 (Ch. 14+15)
6-2	Energy and natural resources (Ch. 14/15)	
6-4	Sustainability and the Earth system (No chapter)	

**Final Exam: Friday, June 11<sup>th</sup> 3-6 pm**