**SIO 50: Introduction to Physical Geology**

**MWF 1:00 PM – 1:50 PM**

**York 4080A, Lab room: York 3030**

**Instructor**: Geoffrey Cook **Email:** gwcook@ucsd.edu

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**TA:** Emily Rhoads **Email**: erhoads@ucsd.edu

Hi Everyone! 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 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:** I will present the lectures in person MWF in York 4080A during our scheduled class times. Lecture PowerPoints 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, 11:59 PM Pacific). In addition, there will be 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 dueat the end of lab sessions on W/Th.

**Field trip**: There is a required field trip, leaving on Friday evening (Nov. 17th) and returning Saturday evening (November 18th) 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: 25% Lab assignments: 30%

Weekly lecture quizzes: 10% Field Trip Participation: 5%

**Note**: “A” is 93% and above; “A-” is 90-92.9%; “B+” is 87-89.9%; “B” is 83-86.9%; “B-“ 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.*** byMarshakand ***Laboratory Manual for Intro. Geology, 4th ed.***by Ludman and Marshak are required—you will need access to them, and also to the W.W. Norton (publisher) website to access the Guided Learning assignments. The lab manual is available as a hard-copy in the bookstore. The lecture text (Earth by Marshak) is automatically digitally provided though an inclusive access program for a significant discount through the UCSD bookstore and the publisher.

***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/. Course content is protected and may not be shared, uploaded, or distributed.

***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.

*(CLASS SCHEDULE ON NEXT PAGE)*

# SIO 50 Schedule (Fall 2023)

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

# Date Lecture Topic (Chapter in *Earth)* Lab Topic(s)

9-29 Introduction to the class/Earth N/A **NO LAB**

10-2 Introduction to the Earth Ch. 1+2 **NO LAB M/Tu**

10-4 Tectonics Ch. 3+4

10-6 Tectonics Ch. 3+4 Introduction (W/Th)

10-9 Tectonics Ch. 3+4 Plate Tectonics

10-11 Minerals Ch. 5

10-13 Minerals Ch. 5

10-16 Igneous rocks Ch. 6 Minerals

10-18 Igneous rocks Ch. 6

10-20 Sedimentary rocks Ch. 7

10-23 Sedimentary rocks Ch. 7 Igneous rocks

10-25 Metamorphic rocks Ch. 8

10-27 Volcanoes Ch. 9

10-30 Volcanoes/Exam Review Ch. 9 Sedimentary rocks

11-1 **MIDTERM EXAM**

11-3 Geologic time Ch. 12/13

11-6 Geologic time/Fossils Ch. 12/13, Int. E Metamorphic rocks

11-8 Geologic structures Ch. 11

11-10  **NO CLASS (Veterans Day)**

11-13 Geologic structures Ch. 11 Geologic Time and fossils

11-15 Earthquakes and tsunamis Ch. 10

11-17 **NO CLASS (prepare for field trip)**

***Friday/Saturday Nov. 17th-18th – Overnight trip to Joshua Tree N.P. (REQUIRED)***

11-20 Glaciers and climate change Ch. 22 Maps (M/Tu)

11-22 Mass wasting; landscape evolution Ch. 16

11-24 **NO CLASS (Thanksgiving Holiday) NO LAB W/TH**

11-27 Mass wasting; landscape evolution Ch. 16 Structures and Earthquakes

11-29 Water and hydrologic processes Int. F

12-1 Streams and floods; groundwater Ch. 17; Ch. 19

12-4 Energy and natural resources Ch. 14;15 M/TU: Field Trip: La Jolla

12-6 Energy and natural resources Ch. 14;15

12-8 Sustainability and the Earth system W/TH: Campus rock tour

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