

UNIVERSITY OF SAN DIEGO
ENVIRONMENTAL AND OCEAN SCIENCES
EOSC110: INTRODUCTION TO GEOSCIENCES / FALL 2020
T/TH 10:45-12:05 & Thursday/Friday 2:30-5:20

LECTURE /THURS. LAB INSTRUCTOR: Elizabeth (Liz) Baker Treloar (ok to call me Liz!)

- **email:** ebaker@sandiego.edu
- **office hours:** MW: 11:00-12:00; Tues.: 2:00-4:00; Friday: 12:00-1:00 and by appointment
- **office:** <https://sandiego.zoom.us/j/92276983849> Send email to schedule. (through Bb)
- **lecture meetings:** <https://sandiego.zoom.us/j/98458180363?pwd=N2hqRDMwbFUzdks3bW1weG1LeGRNz09>
- **lab:** see above
 - [passcode:](#) earth
 - All synchronous class meetings are here (see: [zoom class meetings on Bb](#))
- **eTextbook:** **Earth: An Introduction to Physical Geology**, Tarbuck & Lutgens, Pearson 12th ed. *Highly recommended*
- **ITS help:** 619-260-7900, help@sandiego.edu: all technical questions with zoom, Bb, or your computer

FRI. LAB INSTRUCTOR: Ray Rector

- **email:** geoprof@geoscirocks.com
- **office hours:** Friday: 12:00-1:00 and by appointment (please send email)
- **lab meetings:** <https://sandiego.zoom.us/j/98458180363?pwd=N2hqRDMwbFUzdks3bW1weG1LeGRNz09>
 - [passcode:](#) earth

MAJOR AND CORE INFORMATION:

EOSC110 is designed as preparation for the Environmental and Ocean Sciences major and minor and it satisfies the core curriculum requirement for a science course with lab. EOSC110 will also fulfill the **1)** core curriculum explorations science and technological inquiry requirement and the **2)** core curriculum quantitative reasoning competency for all majors.

COURSE DESCRIPTION:

The objective of this course is to give students an introduction to planet earth and the physical processes that operate inside solid earth and on the surface. The geosphere (solid earth) will be the focus, however, the atmosphere and hydrosphere are a critical connection. The course will conclude with a brief overview of earth history with an emphasis on the physical processes and conditions that affected the evolution of life on this planet. Students will learn the study of planet earth requires an interdisciplinary approach, and the geosciences have never been more critical to society than they are today; there is a growing demand for natural resources as well as solutions to mitigating the impacts of natural hazards and climate change.

COURSE LEARNING OUTCOMES (LECTURE AND LAB COMBINED)

The course learning outcomes are divided into two key components; KNOWLEDGE and SKILLS. **Knowledge refers to the geoscience content** base that you will develop as you learn about the fundamental concepts of geoscience. These knowledge or content learning outcomes include:

Geoscience Learning Outcomes

You will achieve an understanding of the fundamental principles of physical and historical Geology, and a conceptual understanding of the process of scientific inquiry.

- *Identify earth materials (mineral and rocks) and connect them to the processes that play a role in their formation.*
- *Describe the internal structure of earth, and the processes that modify earth's surface.*
- *Discuss the geological processes and features related to plate tectonic activity.*
- *List and discuss some significant historical geologic events that affected life on planet Earth.*
- *Understand the interconnectedness of Earth's spheres by describing the rock, plate tectonic, and hydrologic cycles.*
- *Acquire basic skills of observation, measurements, and problem solving in lab and field settings.*

Skills refer to the scientific ‘habits of mind’, or skill set, frequently used by earth scientists. Some of these scientific skills are numeracy and math skills (i.e., quantitative reasoning), analysis of spatial and temporal scales, estimation of uncertainty, and data analysis and interpretation. The learning outcomes for Quantitative Reasoning in **USD’s Core Curriculum** will thus be met by taking this course:

Quantitative Reasoning (CQR) Learning Outcomes

- **Identification:** Recognize and select quantitative information that is relevant to the argument (e.g., extract necessary data from larger datasets that may also contain non-relevant information).
- **Calculation and Organization:** Perform any necessary calculations (e.g., converting units, standardizing rates, applying formulas, solving equations), and put data into comparable forms (e.g. graphs, diagrams, tables, words).
- **Interpretation:** Interpret and explain data in mathematical forms, such as analyzing trends in graphs and making reasonable predictions about what the data suggest about future events.
- **Evaluate Assumptions and Recognize Limitations:** Make and evaluate important assumptions in estimating, modeling, and analysis of quantitative data as well as recognizing their limitations.
- **Justification:** Communicate carefully qualified conclusions and express quantitative evidence to support arguments.

We will also use these skills in the process of scientific inquiry. Hence, the learning outcomes for ESTI in the Core are:

Scientific and Technological Inquiry (ESTI) Learning Outcomes

- Design and conduct an experimental and/or observational investigation to generate scientific knowledge or a technological solution to a problem.
- Analyze data using methods appropriate to the natural sciences and/or engineering in order to make valid and reliable interpretations.
- Explain the basic scientific concepts and theories relevant to the area of study.
- Identify and use appropriate and sufficient scientific evidence to evaluate claims and explanations about the natural and designed world.

COURSE REQUIREMENTS AND POLICIES:

- Regular **zoom participation** and being **attentive** are critical to your understanding of the subject matter and will improve your performance on the exams and assignments. As an introductory class, there is a **tremendous amount of information** and new terminology. **Emphasis will be on integration of terms and concepts, focusing on critical thinking.**
- **Attendance is expected for zoom class meetings**, and will be checked. Please send email if there is a valid reason for not attending or having to leave the meeting before it ends.
- **Lecture Exams** will cover course material presented in lecture, assignments, and any additional information posted on Blackboard. The lecture text, EARTH, is an excellent resource to supplement lectures, however, you will not be expected to know information from the text if it is not covered in class.
- **Lab Exams** will cover course material presented in lab, worksheets, post lab quizzes, or reflection summaries.
- To make up an exam, you must have **valid** documentation of an illness or critical emergency, or by prior arrangement. Without a valid excuse or prior arrangement, you will not be allowed to make up an exam.
- **Technical difficulties during an exam** that do not allow you to complete the exam must be documented (screen shot or other).
- Lecture videos, power point slides, lecture notes, study guides, animations, links to websites, assignments, lab exercises, and additional reading will be available **on Blackboard.**
- Please **communicate** any concerns or special needs.
- **Academic Integrity:** You are responsible to have read and fully understand the meaning and expectations of academic integrity. Any suspected violations of academic integrity will be referred to the Dean of Arts and Sciences and may result in a failing grade for the course. Please review the **Academic Integrity Policy**, which can be found in the University's Policy and Procedure Manual, this is available as a PDF file: <https://www.sandiego.edu/conduct/documents/HonorCode.pdf>

COURSE DELIVERY:

Asynchronous and synchronous lectures and labs: You will have some **flexibility to view the lectures and complete the lab exercises** on your own time as long as you meet the deadlines for submitting lab exercises and lecture assignments, and you are prepared for the quizzes and exams. There will be a mandatory **zoom meeting each week for lab** sometime during the scheduled lab time, see the lab schedule (or weekly announcements on Bb if time on schedule has changed).

Lecture meetings may not be weekly, probably every 3rd lecture, an **announcement will be posted on Monday** of the week regarding lecture discussion. The lecture discussion will not take the entire time and will depend on number of questions. In order **to be prepared for class discussion it is highly recommended** that you **write down any questions or comments as you proceed through the lectures and lab exercises.** The course content is organized by week, see lecture and lab schedules.

HOW DO I GET STARTED WITH LECTURE PORTION OF THE COURSE?

- 1) Go to the LECTURE FOLDER
- 2) Download lecture notes (*inside each week content folder*) for each topic when necessary.
- 3) Complete lecture notes when viewing the lectures. Write down questions you would like to ask during zoom sessions.
- 4) After completing the lecture notes, read appropriate pages in the text and watch any supplemental videos or articles on Bb.
- 5) Answer study guide questions when available.

HOW DO I GET STARTED WITH LAB PORTION OF THE COURSE?

- 1) Go to the LAB FOLDER
- 2) Go to the LAB LEARNING MODULE FOLDER
- 3) Select the Lab Topic for the week.
- 4) What is inside each Lab Topic folder or module:
 - Worksheets : will not be submitted, however, will be important to review for quizzes and exams.
 - Assignments to submit for points: Usually a 1) post-lab quiz and 2) reflection summary.
 - PPT lectures or other sources of information such as videos or articles to help with your understanding of the lab topic.
 - Lab manual chapters

EXAM FORMAT (lecture and lab):

- Questions will mostly be multiple choice, matching, and true/false format.
- Questions will be presented one at a time and you will **not be able to go back** to previous questions.
- Exams must be completed during the scheduled window of time and will be timed once started.
- **Only scores** will be available after submitting the exam. Please schedule a zoom appt. if you would like to go over your exam.
- You will be allowed to use your lecture notes during the lecture exam (study as if you would not have access). Absolutely no collaboration with others or other sources of information. **See instructions at the beginning of each exam on Bb.**

EVALUATION AND GRADING POLICY: (*percentages subject to change*)

Please keep in mind: grade columns will be specified as lecture or lab, however, may not be weighted.

- **Lab** exercises, quizzes, and exams: **40% of course grade**
 - 35%: post lab quizzes, reflection, participation, and any other lab assignment
 - 65%: lab exams
- **Lecture** exams, assignments, participation, and quizzes: **60% of course grade**
- There is **NO EXTRA CREDIT**.
- Course grade will be determined using the following scale:

100-90% A to A-; 89-80% B+ to B-; 79-66% C+ to C-; 65-55% D+ to D-; < 55% F

(if you are taking the course Pass/Fail, you must receive a 66% or better to pass)



LECTURE SCHEDULE (subject to change)

Week of: Tues. & Thurs.	Topic All lectures are recorded and will be available on Bb	Reading: <u>Earth</u> by Tarbuck, Lutgens, Tasa 12 th ed. READ RELEVANT INFORMATION
8/18	Introduction to the Course	Earth: Ch. 1 p. 14-19
8/20	Geologic Time ~ 25 min Earth's Origin ~ 60 min	Earth: Ch. 1 p. 9-11; Ch. 9 p. 292-295 Earth: Ch. 1 p. 19-22; Ch. 24 p. 734; Ch. 22 p. 671-674
8/25	Earths Layers ~ 20 min The Geosphere ~ 45min.	Earth: Ch. 1 p. 23-24; Ch. 12 p. 364-365 & 368-373; Ch. 14 p. 434-435; p.557
8/27	Earth's Internal Heat Intro. to Plate Tectonics ~ 50 min	Earth: Ch. 1 p. 28-32; Ch. 13 p. 390-396; Ch. 14 p. 420 Earth: Ch. 12 p. 373-377
9/1	Plate Boundaries/Paleomagnetism/ Hotspots ~ 3 hr. (5 videos)	Earth: Ch. 2 p. 38-71; Ch. 12 p. 374-382; Ch. 13 p. 400-416; Ch. 14 p. 421-430; Ch. 5 p. 169-173
9/3	"	
9/8	Minerals / start Igneous Rocks QUIZ 1: day TBA	Earth: Ch. 3 p. 74-105 / Ch. 1 p. 25-27 See Study guide. Quiz available only during lecture time
9/10	Igneous Rocks / Intrusive Activity	Earth: Ch. 4 p. 108-122
9/15	Sedimentary Rocks	Earth: Ch. 7 p. 212-239
9/17	Sedimentary Rocks and Depos. Environments	<i>Lab exam 1 this week</i>
9/22	EXAM 1: day TBA	See Study guide. Exam available only during lecture time
9/24	Weathering and Soils	Earth: Ch. 6 p. 182-209
9/29	Volcanoes parts 1&2 (2 videos-80 min. total)	Earth: Ch. 5 p. 142-179 / Ch. 21 p. 645-647
10/1	"	
10/6	Geologic Structures (folds & faults)	Earth: Ch. 10 p. 304-324; Ch. 14 p. 433-434; Ch. 19 p. 577-581
10/8	Earthquakes (~ 1 hr. 45 min. 3 videos)	Earth Ch. 11 p. 328-361
10/13	Earthquakes Hazards	Earth Ch. 11 p. 328-361
10/15	EXAM 2: day TBA	See Study guide. Exam available only during lecture time
10/20	Pre-field virtual trip lecture (must see before doing lab)	Just lecture notes
10/22	San Andreas Fault and CA Faults	Earth: Ch. 10 p. 318-319; Ch. 14 p. 433-434
10/27	Rivers / Groundwater	Earth: Ch. 16 p. 468-499
10/29	"	
11/3	Mass Movement / Coasts	Earth: Ch. 15 & 20 pages TBA
11/5	Glaciers & Climate	Earth: Ch. 18 p. 558-564
11/10	Mass Extinction?	
11/12	Review	<i>Lab final this week</i>
11/17 Tues.	Final Exam: 11:00-1:00	See Study Guide

ZOOM MEETINGS FOR LECTURE WILL BE ANNOUNCED EACH MONDAY. PROBABLY EVERY 3RD LECTURE AND WILL TAKE PLACE DURING LECTURE TIME. LENGTH WILL VARY DEPENDING ON QUESTIONS.

EOSC110: LAB SCHEDULE FOR Fall 2020
Subject to change

Lab Num.	Thursday Friday	TOPIC (both sections cover same topic)	LAB EXERCISE AND DUE DATE	Mandatory Zoom lab meetings Subject to change
1	20 Aug. 21 Aug.	Geologic Time Scale	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
2	27 Aug. 28 Aug..	Plate Tectonics	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
3	3 Sept. 4 Sept.	Minerals	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
4	10 Sept. 11 Sept..	Igneous / Sedimentary / Metamorphic Rocks	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
5	17 Sept. 18 Sept	EXAM 1	See Study guide	During lab time
6	24 Sept. 25 Sept.	Topographic Maps	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
7	1 Oct. 2 Oct.	Relative Dating	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
8	8 Oct. 9 Oct.	Tourmaline Beach Field Trip	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
9	15 Oct. 16 Oct.	Geologic Structures (folds and faults)	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
10	22 Oct. 23 Oct.	Virtual weekend field trip	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
11	29 Oct. 30 Oct.	Coastal field trip? TBA	See learning module on Bb	Thurs.: 3:30-5:00 Fri.: 3:30-5:00
12	11/5 11/6	Review		Thurs.: 2:30-? Fri.: 2:30-?
13	11/12 11/13	EXAM 2: LAB FINAL Last week of classes	See Study guide	During lab time

Please make an effort to start the lab (view ppt first) at its regular start time of **2:30 PM Thurs. or Friday** Read instructions carefully, download worksheet and get started, write down questions you might have. Professors Rector and/or Baker Treloar will join you via zoom for assistance starting at 3:30 (see schedule above).

All class meetings, lecture and lab: password: **“earth”**

<https://sandiego.zoom.us/j/91409847365?pwd=TVVzdmkzcEt1amE0VnREZzI3aERHUT09>

Guidelines for attending an online course

PLEASE Review: Excellent help with using blackboard and zoom:

- <https://www.sandiego.edu/learning-design-center/blackboard/students.php>
- <https://www.sandiego.edu/its/support/remote-technology/students.php>
- <https://www.sandiego.edu/its/documents/remote-technology/tips-for-remote-learners.pdf>

ZOOM

- **Be mindful of background noise**
When your microphone is not muted, avoid activities that could create additional noise, such as shuffling papers.
- **Position your camera properly**
If you choose to use a web camera, be sure it is in a stable position and focused at eye level, if possible. Doing so helps create a more direct sense of engagement with other participants.
- **Limit distractions:** You can make it easier to focus on the meeting by turning off notifications, closing or minimizing running apps, and muting your smartphone.

BEFORE CLASS STARTS:

- **Make sure you have a reliable internet connection. Chrome is the preferred browser. EXAMS ALSO**
- **Make sure you're in a quiet and controlled area**
 - Minimize distractions and background noise by closing windows and doors, telling people you're in class, and turning off notifications on devices
 - Double-check what's visible on your webcam to avoid distractions or embarrassment
- **Close other websites or apps that you don't need open**
 - This will speed up your computer, and help you focus on classwork
 - Also remember that if you screenshare, your windows, bookmarks, open tabs, etc will be visible to everybody, so make sure everything's appropriate
 - If you're on a Mac, you'll need to take an extra step to turn on screen sharing the first time you run Zoom, to 'Give Permission' for Zoom to capture your screen while running. Trigger this by trying to start your screen.
- **Remember that even in an online context, you should still show professionalism as a student**
- **Remember that class sessions are being recorded.** You should assume that any session you're participating in will be recorded for asynchronous use. ONLY for this class, these recordings will NOT be available anywhere else
- **It is recommended to keep your webcam on when you're in class**
 - This helps the instructor gauge your attention, learning, and understanding better
 - Things like nodding, confused looks, sleep, and visible laughter are valuable feedback
 - If there's something distracting happening behind you or on camera, you can shut it off for a moment, but please turn it back on when the distractions cease.
 - If you don't feel comfortable using your webcam in class generally, or don't have one, that's okay!
- **You will be expected to be able to unmute and speak on request**
 - Using Zoom's **built in 'Push to talk' capability** is a good idea.
- **Make use of the chat feature to ask questions**
 - You can also **'Raise your hand'** by clicking 'Participants' and selecting that option if you'd rather speak aloud
- **Mute your microphone when you're not actively talking**
 - Be aware of the sounds around you
 - Even the noises that you 'tune out' like a trash truck outside or a rogue seagull will carry over microphones
 - Remember that typing can be quite loud, particularly if you're typing on the laptop whose mic you're using
- **When you talk or ask a question by voice**
 - **Introduce yourself** each time you start talking
 - Look into the camera, not your screen (if you're using a second monitor)
- **When you're in a breakout session**
 - You must turn on webcams and microphones, to show your colleagues you're 'there'
 - Designate one person to share their screen, so everybody can see and annotate as needed

Modified from: <http://wstyler.ucsd.edu/onlinestudents/>

MORE:

How do I protect the privacy of students who participate in classes recorded in Zoom/Panopto?

In order to comply with legal requirements and to protect the privacy of students who attend and/or participate in recorded class sessions, we recommend that the Schools issue the following mandates to instructors and their support staff:

RULE: Video or audio recording (including taping, recording, photographing, screen capture, and other methods of capture) for purposes other than instruction is prohibited absent a strong rationale and only if the host provides advance notice and opportunity to opt out of video/audio participation.

RULE: Instructors must not allow or enable students to record class sessions, including by using Zoom/Panopto.

RULE: Instructors may post the class session recording and link to the recording only in Blackboard so that it is accessed only by students enrolled in the class.

RULE: Instructors must instruct students not to disclose any Zoom/Panopto recording URL – or any copies of the recording the student might record or obtain – to anyone outside the class.

RECOMMENDATION: Instructors should affirm these prohibitions of students' recording or sharing of recordings on their course syllabi.

RECOMMENDATION: Instructors should announce at the beginning of class that students are forbidden from recording the session.

RECOMMENDATION: Students should be encouraged to use the virtual background feature of Zoom/Panopto during class sessions if they do not want others to see their surroundings.

Can I require my students to turn on their camera during classes held on Zoom/Panopto?

RULE: Specific Schools within USD or individual USD instructors may require students to turn on their cameras and to participate under their own names.

Consistent with the requirements of a particular School, an instructor may advise students that they can take the following additional measures to protect their privacy:

- Students may select audio-only participation in Zoom/Panopto class sessions.
- Students may access Zoom/Panopto class sessions under a pseudonymous username, with advanced permission of the instructor. The student must share their pseudonym with the instructor.