USC Dornsife
Dana and David Dornsife
College of Letters, Arts and Sciences

7/31/2020

GEOL 107-L **OCEANOGRAPHY** FALL 2020

This course introduces the role of the oceans in the Earth system. We will consider plate tectonics and how these processes were discovered. We will learn about how the atmosphere and ocean interact, why water moves in the ocean, where life flourishes in the oceans and how the Earth system has changed through time. Students will learn about the methods that scientists use to develop and test new ideas in the Earth Sciences, illustrated with hands-on examples in the laboratory section. We will consider the scientific aspects of new and emerging economic resources in the oceans as well as problems of environmental change, pollution, and resource depletion. Such issues and opportunities are ever changing; thus we invite students to develop the scientific skills needed to assess new problems, new information and developments in the future.

Professor: **Dr. Sarah Feakins,** feakins@usc.edu
Virtual office hours: Tuesday 8.15-9am, link via Blackboard, or by appointment.

TAs: Xiaopeng Bian, Becky Wu, Rachel So, Tori Cassady, Hank Woolley,
To find your lab instructors' email and hours: see lab syllabus on Blackboard.
Help room: 5-6pm Tue-Fri, 9-10am Fri, access via Blackboard.

Class time: **TTh 2-3.20pm** - synchronous all-class meeting time on Zoom, recorded.

Technology: Blackboard. Zoom. Interactive software PollEverywhere.
All accessed via your USC login.

USC Technology Support Links
Zoom information for students
Blackboard help for students
Software available to USC Campus
If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please submit an application.

Textbook: **Essentials of Oceanography**, Trujillo & Thurman Prentice Hall.
(13^{th} Ed.) ISBN-13: 978-0134073545
Ebook rental options: Pearson ebook ($45) VitalSource ebook ($45) VitalSource pdf ($45) (ebook is interactive, pdf is static), or, USC bookstore ($55).
Tips: To save money rent ebooks or buy used copies (older editions acceptable).

Labs: **Start in week 2**. Lab syllabus available on Blackboard.

Basis of Grade:

10%	interactive participation software
20%	lecture quizzes (best 4 of 5)
15%	midterm exam
25%	final exam
30%	lab – see lab syllabus
100%	total

Lecture Schedule & Assigned Reading

***Chapters in Trujillo and Thurman—Essentials of Oceanography—13th Ed.

Week	Date	Lecture Subject	Reading*
1	8/18/20	Dive in: ocean origins, ocean science	1
	8/20/20	Plate tectonics: gathering the evidence for motion	
2	8/25/20	Plate tectonics: earthquakes, volcanoes and risk	2
	8/27/20	Mapping ocean basins & marine sediments	
3	9/1/20	**Lecture Quiz 1 – Solid Earth** The special properties of water	3-4
	9/3/20	The temperature and saltiness of seawater	5
4	9/8/20	Winds that stir the surface ocean	
	9/10/20	Surface ocean circulation – currents	6
5	9/15/20	**Lecture Quiz 2 – Air-Sea Interface** El Niño Southern Oscillation	7
	9/17/20	Deep ocean circulation	
6	9/22/20	Waves & tides	
	9/24/20	**Lecture 3 Quiz 3 – Motion in the Ocean** Coastlines – beaches, estuaries and deltas	8-9
7	9/29/20	Dam that erosion from land to sea	10
	10/1/20	**MIDTERM EXAM Thur Oct 1st 2-2.40pm**	
8	10/6/20	Systematics of Marine Biology	12
	10/8/20	Nutrients and food webs	13
9	10/13/20	Fisheries & our impact on ocean ecosystems	
	10/15/20	**Lecture Quiz 4 – Food webs** Pelagic ocean & deep ocean – adaptations of life	14
10	10/20/20	Marine mammals	
	10/22/20	Managing California's coastal oceans	15
11	10/27/20	Coral reef biodiversity hotspots in peril	
	10/29/20	**Lecture Quiz 5 - Ecosystems** Pollution – old foes	11
12	11/3/20	Pollution – emerging problems **U.S. ELECTION DAY – REMEMBER TO VOTE!**	
	11/5/20	Oceans of the past	16
13	11/10/20	Our changing oceans	
	11/12/20	Solutions	
	11/17/20	**FINAL EXAM – Tue Nov 17th 2-3pm**	

Attending synchronous lecture course
Attendance at all live class sessions is the best way to participate in the learning experience with your instructors and classmates, to complete the assigned work and learn the class material for quizzes, exams and labs. Complete readings in advance to get the most out of the class sessions.

Interactive participation software
This course uses **Blackboard** as a platform to share course content and **Zoom** for our live class sessions with interactive participation software. To engage and to track your participation effort, this class will use participation software (**PollEverywhere**) accessible via your USC login, for which you will receive participation credit. Details will be provided via Blackboard.

Missed a class?
You will learn best if you attend class however I understand that you may have sickness, family emergencies, job interviews or other valid reasons that keep you from one or two classes. If you miss the scheduled class time, catch up on all the posted material on Blackboard, assigned textbook readings, video viewings and all assigned work to stay on track with your course.

Quizzes
Quizzes are delivered via Blackboard with questions in a variety of formats including multiple choice, 'hotspot' (click on a figure to identify a feature), numerical response. These are designed to check your comprehension of topics leading up to examinations. Questions will include recall of presented topics and will challenge you to apply concepts to solve new problems (higher order thinking questions). Diligent study and attending class will prepare you best to answer the recall questions. Attending class, listening and engaging with the subject material, will prepare you to answer higher order thinking questions. Best 4 of 5, lowest (or 1 missed) quiz dropped.

Examinations
The midterm and final examination evaluate your comprehension of the lecture course material. The midterm tests material in the first half of the course. The final exam focuses on the second half of the course, but concepts draw on your knowledge from the whole course – all USC final examinations are expected to be integrative assessments. Exams will occur in the scheduled class time (midterm) and USC scheduled final exam time. Exams will likely be delivered via Blackboard – mostly multiple choice as well as 'hotspot' i.e. click on a figure to identify a feature.

Missed examinations?
Make-up examinations are generally not permitted except in extreme circumstances *e.g.* health emergency - inform the professor by email **in advance**.

DSP Accommodations
If you have DSP accommodations, provide DSP documentation to your instructor at the start of the semester, at least 1 week before any assignment requiring accommodation.

International students abroad (with >3hr timezone offset)
Provide your timezone to Prof Feakins by the start of the semester for scheduling purposes.

Optional Extra: JEP Service Learning
You may apply for a service learning opportunity through the USC Joint Education Project (JEP): https://dornsife.usc.edu/joint-educational-project/ JEP places USC students in classrooms (**virtually** in the Fall 2020 semester) to enrich education at local schools. The commitment involves a steady commitment to engage with ocean science course material throughout the semester – a great way to improve your understanding and a great way to help the local community. Successful fulfillment of the JEP placement teaching Oceanography in local schools,

is recognized with extra credit in the 107 grade of up to a partial grade, eg B to B+, dependent upon performance report from JEP instructor. Prior participants have found this a very rewarding experience. *No other extra credit opportunities are available for any reason.*

Learning Objectives (adapted from those of GE-E, Physical Sciences)
All USC students should have a basic grasp of scientific methods; to understand how models of the natural/living world are established and how researchers test the validity of these models using empirical evidence. They should have familiarity with many of the major scientific ideas of the modern world. Students will learn the major techniques of research and investigation, analysis and problem-solving, that provide the basis for discovery and validation in Oceanography. Scientific methods of discovery and research provide the means for confirmation and falsification of conjectures and hypotheses. The physical sciences deal with analysis of natural phenomena through quantitative description and synthesis. USC students need to understand how data is generated, presented and interpreted and how scientific discovery spurs technology growth and impacts society. Students will learn to solve scientific problems and to understand the processes by which scientific knowledge is obtained, evaluated and placed in the context of societal relevance. This Oceanography course includes an online laboratory component in which data are collected, analyzed and interpreted.

What to expect
This is a large volume course with 240 students, most students are taking this course as a required physical science GE. Throughout the course I will make connections – I am excited to show you how the science we will study is relevant to your lives and careers!

Students should read the textbook and any assigned materials before class, including any assigned videos, take notes during reading and videos, think about the topics being presented, and attend all live class sessions ready to learn from lectures and to ready to participate in class activities via interactive technology, and in breakout sessions in smaller groups of students. Students who delve into the topics in the news as well as by following the links presented in lecture, have a richer experience from the course.

In the lab sections students will learn in small groups through hands-on activities and questions that assess comprehension, guided by laboratory instructors who are currently pursuing research towards doctoral degrees in the Earth Sciences. Assessment will include lab activity work and quizzes (short answer, multiple choice, fill in the blank, matching etc.) and a presentation. See the lab syllabus.

Meet Professor Feakins https://earth.usc.edu/feakins/ https://twitter.com/SFeakins
I run an organic geochemistry laboratory-based research program – currently studying past climate from marine sediments in the Southern Ocean (near Antarctica), the Indian Ocean and Californian lakes. While I have been teaching this course at USC for twelve years, the online transition is new. I have been busy preparing for the online version of this course this summer. I've taken the CET Accelerated Online Institute and am excited about the new format. As I've recently been a student in an online course myself, I have new insights into your experience and how breakout sessions in particular can help to connect with others as we learn. I am excited to dive into this online course with you! You can reach me here: feakins@usc.edu.

As the lecture and laboratory instructors are scientists with active laboratory, model-based and field research, GEOL 107 students gain insights into current research in the sciences, and learning opportunities that extend beyond the classroom. Ask us about our science! Ask us about the topics you might be interested in the news and for your careers!

Statement on Academic Conduct and Support Systems

Academic Conduct:
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:
Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free, confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention – (213) 821-4710
campussupport.usc.edu/
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety.

USC Department of Public Safety – - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

ONLINE syllabus additions from USC

USC technology rental program
We realize that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please submit an application. The Student Basic Needs team will contact applicants in early August and distribute equipment to eligible applicants prior to the start of the fall semester.

GEOL 107 Zoom etiquette/tips
Please mute your microphone when not speaking, especially in large class settings. Unintended audio can be disruptive.
Recommend camera on in lab; camera on/off in the large class; camera on when speaking.
Please connect to class Zoom with a computer browser whenever possible, if you have connectivity issues and need to use a phone to dial into class, there may be admit issues, unless you email the instructor in advance. Viewing lecture slides and completing exams and assignments require an internet connection.
If you have connectivity or other issues, or other needs for accommodation, please reach out to the instructor outside of the class session. Any immediate issues (e.g., sound quality is unclear, or the font is too small) please raise (e.g. in the chat) for a prompt solution.

Synchronous session recording notice
Per USC policy, synchronous sessions are recorded and provided to all students asynchronously.

Sharing of course materials outside of the learning environment
Students please note that USC has a policy that prohibits sharing of any synchronous and asynchronous course content outside of the learning environment.
SCampus Section 11.12(B) Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (SeeSection C.1 Class Notes Policy).