

GEL/ESP 116: Oceanography

Winter 2019

Professor Tessa Hill

Objective: In this class, we aim to investigate the field of oceanography, with emphasis on research techniques, current research questions, scientific approach, oceanographic data, and analytical skills. This course provides a general introduction to these topics (in-depth examination of these topics takes place in other Oceanography courses at UCD), with these specific objectives:

- 1) Understand and integrate fundamental principles in marine science, including
 - a) Development of modern ocean/earth system
 - b) Adaptation of marine life to the ocean environment
 - c) Impact & importance of ocean circulation
 - d) Biogeochemical cycles & ocean productivity
 - e) Processes at the terrestrial-marine interface
 - f) Anthropogenic impacts and management of marine resources
- 2) Develop skills to communicate scientific information through different methods
- 3) Interpret and discuss scientific data and published literature
- 4) Evaluate modern issues in marine science

What I expect from you, as students: To come prepared to class, having read assigned material (before class); to participate in class projects, discussions, and presentations; to think critically about scientific questions; to delve into major questions in Oceanography using your background and expertise as a guide.

What you can expect from me, as your professor: To provide you with information on current oceanographic research; to prepare and present the necessary background information that you will need; to be available for questions and discussions both inside and outside of the classroom.

Class Schedule:

Lecture: Mondays, 12:10-2:00pm, Art 204

Discussion Section (Required): EPS 1309

Field trip (optional, see below): March 2, ~9am-3pm; trip will be focused on impacts of sea level rise in the SF Bay Area.

Teaching Assistants:

Lena Capece

lcapece@ucdavis.edu

Cait Livsey

cmLivsey@ucdavis.edu

Contact your teaching staff: The best way to contact all three of us is to use the email tool on Canvas, and/or post a message on Piazza - see below.

Office Hours:

Professor Hill: *By appointment*, on Mondays, EPS 1129

Lena Capece: Tues 12-1 pm in EPS 1309

Wed 11-12 pm in EPS 1309

Cait Livsey: Thurs, 1-2pm, in EPS 1st floor atrium (outside Professor Hill's office)

Textbook/ Reading:

There will be weekly assigned readings from peer-reviewed journals (posted on Canvas). These are due prior to class starting on Monday, as they will be discussed in lecture and sections that week.

Readings from two assigned books: *Sea Change* (Sylvia Earle) + a second book that you will get to choose (from a reading list).

Lecture material is derived from *Ocean Biogeochemical Cycles* (Open University Press), which is an excellent book (purchase is not required for this course)

Online Class Discussions/ Questions

We will be using Piazza for class discussions and as a place to post questions. The system is highly catered to getting you help fast and efficiently from classmates and teaching staff. Rather than emailing questions to the teaching staff, we encourage you to post your questions on Piazza. *You can post questions directly to Professor Hill, or post them publicly (to the class), and you can also do so anonymously.*

Find our class page at: piazza.com/ucdavis/winter2019/gelesp116/home

To do well in the course, you need to participate fully and put your best effort into all assignments and class activities. Your overall grade is based upon:

Class participation	10%
Wiki writing (done in class)	10%
Reading reflections (due: Feb 4, Mar 4)	15%
Discussion section activities & participation	20%
Group presentation (in Discussion section)	10%
Mid Term Essay (Feb 11)	15%
Final Exam Essay (Mar 22)	20%

Missed classes, participation grades, and extra credit

It is assumed that you will attend all lectures, and participation points will be accrued at each lecture. However, we recognize that there are important and valid reasons that you may need to miss class. As such, we will provide extra credit opportunities during the course that will enable you to make up points missed during one (1) absence.

It is assumed that you will attend all discussion sections. The field trip (March 2) is optional; however, participation in the field trip will replace the points accrued during one (1) day of discussion. As such, if you know you are able to attend the field trip, this can make up for one discussion section absence. The field trip signup form is on Canvas.

Schedule of Topics / Assignments

		Lecture topic	Discussion topic	Book Reading
Week 1	7-Jan	Introduction Ocean Circulation	Group Presentation Topics	
Week 2	14-Jan	Nutrients/ productivity Wiki writing (in class)	Coral Reef Health	Earle: Ch 1-3
Week 3	21-Jan	HOLIDAY	ENSO	Earle: Ch 4,5
Week 4	28-Jan	Carbon cycle	Book discussion	Earle: Ch 6-9
Week 5	4-Feb	Shallow water processes Due: book reflection & 2nd book choice	Scientific Writing	Earle: Ch 10,11
Week 6	11-Feb	DUE: Mid term essay Paleoclimate Wiki writing (in class)	Harmful algal blooms	Earle: Ch 12-14
Week 7	18-Feb	HOLIDAY	Book discussion + Groups working on presentations	Earle: Ch 15-end Begin 2nd book choice
Week 8	25-Feb	Deep sea environments Science Communication Wiki writing (in class)	Arctic sea ice	
	2-Mar	Fieldtrip (optional)		
Week 9	4-Mar	Climate change Due: book reflection	Group presentations	
Week 10	11-Mar	Book discussions Marine Policy	Group presentations	
	22-Mar	Final Exam (Essay)		

Your Course Fee

You paid a course fee when you enrolled in this class (\$7.00). This fee contributes to the following costs: the field trip bus, supplies & materials, and calibration of a multisensor instrument used for one week of section and the field trip. We are aware of the many costs incurred by students and try to keep this fee to a minimum, as well as the costs of books for the course.

UC Davis Code of Academic Conduct

The UC Davis Code of Academic Conduct exists to support high standards of behavior and to ensure fair evaluation of student learning. Students who violate the Code of Academic Conduct are subject to disciplinary sanctions that include censure, probation, suspension, deferred separation or dismissal from the University of California. Unless specifically authorized by the instructor in writing, misconduct includes, but is not limited to the following: academic misconduct on exams and coursework, plagiarism, misuse of course materials, and class disruption. Please read the full Code here, as violations resulting in suspension or dismissal will be marked on the student transcript:

<https://ossja.ucdavis.edu/code-academic-conduct>

Accommodations for this course

Any student who feels he or she may need an accommodation based on the impact of a disability should contact Prof. Hill privately to discuss his or her specific needs. In addition, the student should contact the Student Disability Center (SDC) at (530) 752-3184, sdc@ucdavis.edu (and <https://sdc.ucdavis.edu/>) as soon as possible to better ensure that such accommodations can be implemented in a timely fashion. All accommodations must have prior approval from the SDC on the basis of medical or other appropriate documentation. Two portions of the course discussions/field trip may require walking short distances; if this is not possible, please notify your teaching staff so that we can develop an alternate curriculum plan for you.

Diversity & Inclusion

The Department of Earth and Planetary Sciences is committed to creating a community that respects each person as an individual. We promote diversity, creativity, and rigorous intellectual inquiry for all members of our department and the University community, through excellence in research, teaching, mentoring, and service. Diversity and excellence – in perspectives, scientific approaches, and contributions to society – are the cornerstones of our success as a department. The department is committed to the UC Davis Principles of Community. Earth and Planetary Sciences faculty members encourage individuals, representing all races, creeds and social circumstances, to join our community of scholars with a common interest in the world around us and beyond.

As part of this course, we are especially committed to increasing the representation, expertise, and voices of populations that have been historically excluded from participation in US higher education and the scientific enterprise. You may observe this commitment in our course readings, in the way in which discussions are moderated and facilitated, and in the design of the course. If there is any way that we can additionally improve the inclusion of members of this course please bring your ideas to the teaching staff.