

ESS 15 (2013 Spring): Blue Planet: Introduction to Oceanography

Tuesdays and Thursdays: 11:00am - 12:15pm in Moore 100

Lecturer: David Jewitt jewitt@ucla.edu

TAs: Jeanine Ash (jlash@ucla.edu) Sections A, B, C
(Office Hrs: Geology 3677, Tuesday 2-3pm)
Kevin Coffey (kevincoffey@ucla.edu) Sections E, F, G
(Office Hrs: Geology 5631, Tuesdays 5-6 pm)
Paul Cox (paulcox@ucla.edu) Sections D, J, O
(Office Hrs: Geology 1815, Wednesdays 3-4pm)
Peter Haproff (peterhaproff@ucla.edu) Sections H, I, L
(Office Hrs: Geology “unknown”, Thursdays 1-2 pm)

Discussion Sections: As above

Discussion Locations: Geology 3820

Font of Administrative Wisdom: Lauri Holbrook (holbrook@ess.ucla.edu)

Book: Essentials of Oceanography, Trujillo & Thurman,
11th edition

Syllabus & Notes Version 2013 May 08

Notes on the Class

The aim of the class is to be broad, informative and fun: you should end up being excited about the oceans and have a decent feeling for what we know, don't know and want to know about them. We will use numbers to describe things but will not rely much on mathematics because this is an introductory class and most of the people who take it do not have mathematical backgrounds.

We will cover many, diverse aspects of the oceans in this class, from the broadest planetary context to the nature and origin of water, the nature of ocean currents, waves, buoyancy & salinity cycles, interaction with the atmosphere, distribution and nature of life, relation to climate and we will go beyond to consider the buried oceans of other planets and satellites and their relation to the likelihood and distribution of life elsewhere.

Book

The course book is there for background. You will benefit from reading the book in parallel with the lectures (ideally before the relevant class) and you are encouraged to read ahead as much as you like (in your copious free time). There are many other, similar introductory level books and earlier editions of the same book. In my mind they're all about the same.

Interactions

You have several opportunities for interaction. First, please ask me questions in the lectures. This is the main way I can tell whether or not I am hitting the right notes: I need your feedback and right there in the lecture is the best place and time to start. Second, there are “labs” (UCLA-speak for “discussion/interaction sessions”) run by Jeanine, Kevin, Paul & Peter in which you are specifically encouraged to ask lots of questions and interact with them. Third, my office is Geology 3713 and you are welcome to see me at any time to discuss the subjects of this class (send me email if you want to be sure that I’m there, or take your chances and stop-by). Email is another good way to interact with me: phone is not a good way (because I don’t answer the phone).

Labs

You must go to the labs in order to have access to 30% of the final grade that will be allocated from them.

Grades

The various graded aspects of the class are not there to trip you up. They are there to focus your attention on the key points of the class. The final grades will be weighted between homeworks, in-class exams, discussion section activities and the final exam as

Lab Activity	30% (best 7 of ~9)
In-class exams (2)	20% (multiple choice)
Final exam	50% (multiple choice)**

The answer to the inevitable question “do you grade on a curve?” is “I think so”. You can assume that if you make a reasonable effort you will get a reasonable response in terms of the grades, and you will know from the homeworks and exams how you are doing as the class progresses, so there should be no surprises. We’ll have some extra-credit exercises as well. If you want to get an "A" you can, by working at it.

** I will make the final exam questions (perhaps 50 - 75 in number) available roughly a week before the final exam (which is scheduled for Monday, June 10th, 3pm - 6pm, in Ackerman Grand Ballroom). The final will consist of a subset of these questions, possibly with a few extra questions added.

Practical Details

PDFs of the lectures will be posted on-line but, since PDFs cannot show movies or animations and have no sound, these may not be an effective substitute for attending the class.

Where practical, I will also post .mov (e.g. iPod) versions of the lecture slides and movies, to supplement the PDFs. It's by far the best thing to attend the lectures, though, and use the on-line material and the book as back-up, if needed.

There are no make-up exams and late homeworks will not be graded because these things place a disproportionate burden on the TAs. No electronic devices may be used during the exams.

Date	N	Subject	Chapter	Week
APRIL				
Tu Apr 02	1	Science & Introduction to Course	1	1
Th Apr 04	2	Plate Tectonics & Oceans	2	
Tu Apr 09	3	Water, Circulation	5, 7	2
Th Apr 11	4	Circulation of Atmosphere & Ocean	6	
Tu Apr 16	5	Feedback Loops, Air, Ocean, Gaia	?	3
Th Apr 18	6	Waves	8	
Tu Apr 23	7	In-Class Exam 1		4
Th Apr 25	8	Tides	9	
Tu Apr 30	9	Beaches & Coasts	10, 11	5
MAY				
Th May 02	10	Uses of the Ocean		
Tu May 07	11	Origin of the Ocean		6
Th May 09	12	Distribution of Life	12, 13	
Tu May 14	13	Pelagic Life	14	7
Th May 16	14	Benthic Life	15	
Tu May 21	15	In-Class Exam 2		8
Th May 23	16	Oceans of Other Worlds		
Tu May 28	17	Climate, Greenhouse, Feedback	16	9

Date	N	Subject	Chapter	Week
Th May 30	18	Climate, Snowball Earth	16	
JUNE				
Tu Jun 04	19	Cool Things About Oceans		10
Th Jun 06	20	Review of the Course	ALL	(Cheltenham)
Mo Jun 10		Final Exam, 15:00-18:00 (in Ackerman Grand Ballroom)		

The above syllabus is an outline. It will change as we go along and I will post updates to the class web site accordingly. Watch the date towards the top of this document.