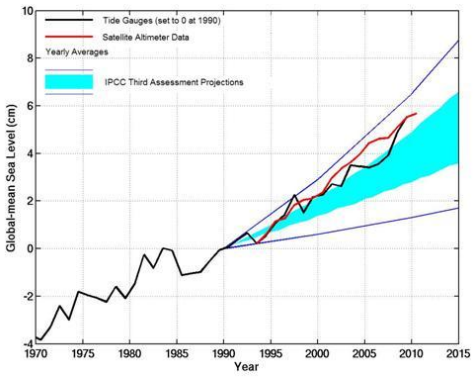

Marine Environmental Science Laboratory: ENV 115L
Laboratory Syllabus
Fall 2015

Human alteration of earth is substantial and growing.
Peter M. Vitousek et al.

Not unlike the lobster, we humans tend not to notice changes in our "water" so long as they happen gradually. For an American, dropping into the "hot pot" of Haiti or Burkina Faso creates a shock of realization: the entire planet is in the same pot, and while there are local spots hotter than others, our "pot" is warming worldwide.
Thom Hartmann

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Environmental Studies
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Phone: Office: 735-4834 (ext. 4834 if calling from on campus); cell: (808) 387-9319 (no calls after 9:00 PM please)

E-mail address: ggrabows@chaminade.edu

Office hours: T: 1:00-3:30; Th 2:30-3:30; F 3:00-5:00; Or by appointment

Course Description: This course introduces students to the scientific methodologies used to determining and studying the current major marine environmental issues. Issues studied include: climate change, marine pollution, marine debris, oil spills, fisheries exploitation, fisheries by-catch, marine alien species, coastal development and coral reef degradation. Laboratory exercises are conducted in the field and on the Chaminade campus. Students taking this course will be engaged in field science activities.

Course Learning Outcomes: When you have completed this course you should:

- Know what science is and how scientific research is conducted
- Be familiar with and experienced at reading the primary scientific literature
- Know the basic units used in making scientific measurements
- Be able to competently collect, record, analyze, present and interpret scientific data
- Be able to write up a scientific research report
- Be able to properly collect, identify and preserve marine biological specimens
- Be able to identify particular marine organisms and their behaviors in the field
- Be comfortable conducting field measurements in a variety of types of marine habitats
- Be able to document the physical effects of a number of the major marine environmental issues
- Be able to document some of the detrimental effect(s) marine environmental issues have on marine ecosystems

Course Requirements: Your grade in this course will be based on the following. Each of the items/activities listed below will be described to you in writing or orally in class.

• Laboratory worksheets, quizzes, homework, etc.	40%
• Hawaiian Invertebrate/Vertebrate Organism Exposé	20%
• Marine environmental issue Journal Article Critique	20%
• Attendance	20%

Course Grading: The proportion that each of the above contributes to your grade in this course is as follows:

Lab worksheets, etc.	200 points
Hawaiian Invertebrate/Vertebrate Organism Exposé	100
Journal Article Critique	100
Attendance	100
	500 points total

Laboratory worksheets, the Organism Exposé and the Journal Article Critique will be graded on *effort*, *correctness* (when there is a correct response etc.) *thoughtfulness* and *organization*. Effort in general manifests itself as neatness, completeness, thoroughness, calories expended per unit time(!), timeliness, correct spelling, any extra creative things you do above-and-beyond what is expected, etc. Correctness means do your statements jive with corresponding scientific knowledge, do your conclusions follow from the evidence before you, did you calculate an equation correctly, interpret a graph accurately, make a table that illustrates your data properly, etc. Thoughtfulness can show up in many ways, perhaps you really think things through, trying to consider all the variables or you worked hard to tie pieces of evidence together, maybe you consider something that may be important that everyone else ignores. By being "thoughtful" I don't mean that you look out for other people (i.e. are kind) I mean that you have done some thinking, really reflected upon a topic, have given it some time, have analyzed it, etc. thoroughly. Organization pertains to the design of your presentation. Did you present the material, answers, ideas, etc. is a way that is understandable, efficient and follows existing protocol (if they exist and/or are explained prior to the assignment).

Texts:
None; Your labs are coming from many sources! Informational handouts will be given in e-copy prior to lab. Worksheets will be given out in hard copy.

Supplemental Texts: We will do a number of laboratory activities that do not come from a specific lab book *per se*. These have been put together by Dr. Gail and/or her colleagues. You will be given handouts for these labs.

Things You'll Need for Class:

1. Snorkel Gear: It is NOT a pre-requisite that you be able to snorkel/swim to take this class but you will have the opportunity to do so in lab if you are able. Snorkel gear: Mask, snorkel and fins can be purchased at a bargain price at Sports Authority, COSTCO, Wal Mart, etc. For better gear check out any dive shop. If you already own your own gear that is great. You are now living in Hawaii and taking a course on Hawaii's (and the world's) ocean environments…it's time you own a set of snorkel gear!
2. Shoes that can get wet: Be sure you have something for your feet that you can cross wet basalt rocks in! These will get wet.
3. Water Bottle: Bring this to all labs that occur in the field.
4. Sunscreen/hat/etc.: To protect you when we are in the field.
5. A love of the field and getting dirty, wet or cold: Guys this is a marine course so you will have/get to go outside! Be ready to be hot/cold, dirty etc. and prepare accordingly. Bring sunscreen if you need it, a towel, a wetsuit, etc. if you'd like and have a mind to be IN nature!

Attendance:

If you miss a lab your absence must be excused if it is not to *formally* effect your grade. Excused absences occur when you bring in a doctor's note, a funeral announcement for a family member, notice of participation in athletic events, etc. Unexcused absences occur when you were working, surfing, sleeping, cramming for an exam in another class, etc. Unexcused absences cost you the assignment you missed that day: you receive a zero for it. Excused absences mean that the lab you missed is not counted in determining your lab grade. You may make up a lab (if it is possible to do so for that particular lab) IFF (that means IF and ONLY IF) it was an excused absence. You cannot make up a lab you missed for an unexcused reason.

ClassroomAtmosphere:

I value a very open, yet courteous class atmosphere. Express your ideas! **Ask your questions!** (The only dumb question is the one in which you ask yourself if you should ask your question.) Respect the thoughts and ideas and opinions of others – really think about what others say. Let them fully express their thoughts and ideas and then you do the same. **The thing I value most from my college days are all the wonderful, valuable, diverse ways of looking at and understanding the world that I was exposed to. Be an open vessel – take ideas in! You will learn as much from each other as you do from me.**

If you are handicapped under the Americans with Disabilities Act:

Chaminade will provide assistance for any student with documented disabilities. Any student who believes he/she may need accommodations in this class must contact Dr. June Yasuhara (735-4845), at the Counseling Center (office is next to security), in order to determine if you meet the requirements for a documented disability in accordance with the Americans with Disabilities Act. Please contact Dr. Yasuhara as soon as possible so that accommodations can be implemented in a timely fashion.

Reminders of Important University-Wide Policies:

The following policies are summarized from the Student Handbook. Please be sure that you have reviewed these and other policies that your Handbook contains.

Academic Honesty:

Students are responsible for promoting academic honesty at Chaminade by not participating in or facilitating others' participation in any act of academic dishonesty, and by reporting incidences of academic dishonesty (such as theft of tests, records, and other confidential materials, altering grades, and/or plagiarism) to their instructors.

Freedom of Expression:
Students are free to take reasoned exception to the views offered in a particular course of study. They may be required to know thoroughly the specific bodies of knowledge or interpretations or theories set forth by the professor, but are free to reserve judgment as to the truth or falsity of them.

Students are expected to maintain the standards of academic performance articulated in course syllabi, supplemental readings, assignments and Academic and Student Affairs policies. The instructor is considered the normal and competent judge of academic work. Students have an appeals process in the rare case of unjust grading and evaluation by the procedure detailed in the Academic Grievance section of the Student Handbook.

This syllabus and course schedule are living documents: they are free to change. I try to adhere as closely as possible to them for your convenience, but there will be times in which we will take longer on a particular topic or add or delete a topic to enhance the course. I like to be able to react to you as the course proceeds and go with the flow a bit in order to make the course experience sort of custom fit to you!

You are responsible for all of the information in this document: losing it or not reading it do not make you exempt from knowing what's in it!
Use it to keep you organized and aware of important dates and how your grade is determined.

Marine Environmental Science Laboratory
Course Schedule
Fall 2015

DATE	**LAB TOPIC**	**ACTIVITIES**
8/26	Lab Intro; Lab Safety	Review lab syllabus; Organisms to know
9/2	Introductory DVD	Blue Planet Opener; **Critter Quiz: Corals, common & species names**
9/9	Ocean Issues	**Share a marine issue of concern** **Critter Quiz: Invertebrates**
9/16	Ocean Environments (from above)	Diamond Head Hike! Worksheet **Critter Quiz: Vertebrates**
9/23	Hawaiian Organism Exposés	**Natural history Organism Exposés** **Critter Quiz: All critters!** (You can do it!)
9/30	Marine Producers: macroalgae collection	Diamond Head; **Need Snorkel Gear!** Worksheet
10/7	Ocean Ecosystems I	Blue Planet: Open Ocean and The Deep
10/14	Marine Animals; Animal Phyla	Waikiki Aquarium; Worksheet
10/21	Ocean Ecosystems II	Blue Planet: Coastal and Seasonal Seas
10/28	Coral Reef Transects; An Unhealthy Reef	Ala Moana; **Need Snorkel Gear!** Worksheet
11/4	Climate Change	**Skits: Use data to convince a denier!**
11/11	NO CLASSES: VETERANS DAY	
11/18	Choose Journal Articles for Critique Overfishing DVD	**Meet in the lobby of the library (**2:30-3:15) Watch: The End of the Line (3:15-4:45)
11/25	A Healthy Reef	Hanauma Bay; **Need Snorkel Gear!** Worksheet
12/2	Real Issues in the Research Literature	**Journal Article Critiques**