BI 408/508 – Ocean Acidification
Summer 2017

Instructor: Julie B. Schram
E-mail: jschram@uoregon.edu
Phone: (541) 888-2581 ext. 230
Office: CTELab (Invert building)
Office Hours: By appointment

Class Meeting: July 15-16; 22-23
Meeting room: McConnaughey

Overall Course Goal/Purpose: The course is for upper level undergraduate and graduate students. This course will introduce students to the dynamic biogeochemical shifts in the world's oceans and specifically along the Southern Oregon Coast through a combination of lectures and field observations. Students will learn about underlying chemistry essential to developing and implementing experiments to explore the impacts of seawater acidification. Students will have the opportunity to apply this knowledge and experience to develop their own educational outreach materials to communicate what they have learned about in this course with the public to address issues of importance to local community members and stakeholders.

Course Learning Objectives: At the end of this course student will be able to:

1. Identify environmental drivers that are influence organismal responses to ocean acidification (demonstrate understanding in group discussions and written concept summaries)
2. Explain the basic underlying chemistry that drives changes in seawater pH (demonstrate in class discussions, written concept summaries, group activities, and group presentations).
3. Compare and contrast ecological and evolutionary advantages of invertebrate adaptations in the context of ocean acidification (demonstrate comprehension through team-based learning activities and group discussions).
4. Evaluate recent research on ocean acidification (demonstrate through team-based learning activities, written concept summaries, and group discussions).

Course Requirements

1. Read required materials and come to class ready to discuss the readings.
2. Participate in class discussions and activities.
3. Research, develop, and prepare education outreach materials

Required Readings: No text book. Assigned primary scientific literature. Readings will be made available in class.

Course Assignments

1. Students will be expected to participate in discussions and activities related to lecture material. This will be considered part of the participation grade.

2. Students will complete written summaries of primary literature in the field of ocean acidification.

3. Students will develop and present an original outreach project (e.g. informational poster, pamphlet, animation, etc.) to communicate the science of ocean acidification.

Course policies

1. Attendance is expected. Students are responsible for all materials presented and discussed during class periods, including instructor, guest lectures or peer presentations.

2. Class participation is a significant portion of this course. There will be individual and/or group activities for which students receive credit as part of their daily class participation. There are no make-ups for missed participation points unless accompanied by an appropriate excuse (see below).

3. If a student is ill or otherwise unable to attend class, contact your instructor **before** you miss class to obtain an alternate assignment to take the place of missed participation points and, if necessary, arrange a make-up exam. If you are ill you must present a dated medical documentation of your illness within one week of the absence.

4. Late assignments will be docked 5% for each day that they are late. Missing assignments (defined as any assignment not turned in) will receive a zero.

5. There will be limited opportunities for extra credit. Extra credit will only be available for the entire class; there will be no individual extra credit. There will not be sufficient opportunities for extra credit to make up for any assignment.

6. Academic dishonesty will not be tolerated. For more on the University of Oregon's Academic Honor Code and definition of academic dishonesty, visit the university website for more specific information on repercussions of academic dishonesty.

BI 408/508 - Ocean Acidification (OA) Summer 2017 - Tentative Schedule

Date	Topic/Activity	Format/Location
Sat 7/15	Introduction to OA chemistry I	Lecture
	Collect field samples for analysis and perform field observations	Field Trip
	Introduction to outreach assignment	Lecture
	OA concerns for the US West Coast & Globally: group discussion	Laboratory
Sun 7/16	Introduction to OA chemistry II	Lecture
	Introduction to total alkalinity titrations & spectrophotometric pH measurements & their use in estimating carbonate chemistry	Laboratory
	From organismal to community responses to OA	Lecture
	Introduction to outreach assignment guidelines: hands on outreach/demo	Laboratory
Sat 7/22	OA and Science communication	Lecture
	Charleston Marine Life Center: Community outreach through a local museum	Field Trip
	Work on outreach projects	Laboratory
	Group discussion: What elements are essential to effective science outreach?	Lecture
Sun 7/23	Field measurements: Collect samples for spectrophotometric pH and total alkalinity (optional)	Field Trip
	What's next? Future of OA research: Lecture and group discussion	Lecture
	Meet as a class to troubleshoot lingering questions/issues with outreach projects	Lecture
	Present finalized projects	Lecture