

SIO 101: California Current Oceanography (Fall Quarter 2014)

Instructors: Lihini Aluwihare (laluwihare@ucsd.edu), Vaughan 302
Michael Landry (mlandry@ucsd.edu), Ritter 236A
TA: Ali Freibott (afreibott@ucsd.edu)

Lectures: Tuesdays/Thursdays, 2 - 3:20 p.m., Vaughan 100

Labs: Wednesdays, 2-4:50 pm (Hubbs 3300 or as noted)

LECTURE NOTES AND READING MATERIALS:

PDF files of the lecture notes and reading materials will be available throughout the quarter via Ted (<https://ted.ucsd.edu>).

OFFICE HOURS:

We do not have official office hours. Unofficially, we are most available immediately following classes on Tuesday and Thursday. We are also happy to meet you at another time, but please email us to arrange a meeting.

READING ASSIGNMENTS:

Most classes taught by either Landry or Aluwihare will involve a lecture-relevant reading assignment from the current scientific literature. The authors and publication dates of the assigned papers are noted in *italics* on the lecture schedule below. About 1 week prior to each of these lectures, you will be given a handout (via Ted) with specific questions concerning that reading. Your assignment is to address these questions in a **well-crafted essay of no more than TWO double-spaced typed pages**. You are also expected to participate in classroom discussion relating to the readings on lecture day. Essays are **due at the beginning or before class** on the day of each lecture; late essays will be downgraded. Since many of the papers may involve new vocabulary or unfamiliar concepts, you are strongly encouraged to utilize web, wits, or other resources to help prepare your essay and classroom discussion.

LAB ASSIGNMENTS:

Scheduled labs are indicated on the course schedule in **bold font**. Several of these labs will have either homework or in-class assignments (noted). Completion of these assignments is required within one week of the lab class (i.e., on or before the following Wednesday). Homework assignments will be graded.

FINAL EXAM:

A closed book final exam will be held on Thursday, December 12th between 3-6 PM (current schedule). Two weeks prior to the exam date, you will be given a list of ~6-8 broad essay-type questions. The exam will be based on three of those questions (randomly drawn on exam day). You are encouraged to prepare for the exam in study groups. Answers to the questions, which may involve the interactions of complex processes or speculations about future environmental changes in the California Current System, can and should be considered in detail, drawing upon anything that we have covered in the class or readings.

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COURSE GRADING:

Reading and lab assignments	40%
Class attendance and participation	20%
Final exam	40%

SIO 101 SCHEDULE

2 Oct. Introduction and overview. (Aluwihare & Landry)

WEEK 1

7 Oct. Basin-scale and local circulation (Aluwihare). *Howell et al. 2012*

8 Oct. **Database Access Lab (Hubbs 3300)**

9 Oct. Inorganic nutrient distributions (Aluwihare). *Barth et al. 2007*

WEEK 2

14 Oct. Phytoplankton and primary production (Landry), *Kahru et al. 2009*

15 Oct. **Phytoplankton lab (Hubbs 3300; homework assignment)**

16 Oct. Plankton food web structure and processes (Landry), *Landry et al. 2009*

WEEK 3

21 Oct. Pelagic fisheries (Landry), *Rykaczewski & Checkley 2008*

22 Oct. **Zooplankton lab (Hubbs 3300; homework assignment)**

23 Oct. Tracer studies of local coastal circulation (Feddersen)

WEEK 4

28 Oct. Bass tagging project (Lyll Bellquist, Semmens Lab)

29 Oct. **Satellite Oceanography lab (Center Hall Computing; in class assignment)**

30 Oct. Kelp ecosystems (Ed Parnell)

WEEK 5

4 Nov. Harmful algal blooms (Aluwihare), *Lefebvre et al. 2012*

5 Nov. **Ocean Chemistry Lab (Hubbs 3300; homework assignment)**

6 Nov. Carbon and nutrient partitioning (Aluwihare), *Martz et al. 2014.*

WEEK 6

11 Nov. Bacteria and Archaea in the CCE (Aluwihare), *Santoro et al. 2010*

12 Nov. **Ocean Chemistry Lab (Hubbs 3300)**

13 Nov. Isotopes in food web studies. (Aluwihare), *Vokhshoori & McCarthy 2014*

WEEK 7

18 Nov. Benthic marine resources (Landry), *Shanks 2013*

19 Nov. **SIO Collections (Sala, Walker and Cha; meet outside Vaughan Hall, west side)**

20 Nov. Hypoxia in the northeast Pacific (Landry), *Koslow et al. 2011*

WEEK 8

25 Nov. Ocean acidification (Aluwihare), *Hofmann et al. 2014*

26 Nov. **No Lab**

27 Nov. Thanksgiving

WEEK 9

2 Dec. Physics of climate change (Aluwihare), *Chennilat et al. 2012*

3 Dec. **Tagging of Pacific Predators Lab (Center Hall Computing; in class assignment)**

4 Dec. Biological impacts of climate change (Landry), *Rykaczewski & Dunn 2010*

WEEK 10

9 Dec. Pollutant transport and distribution in the SCB (Aluwihare) (*Stapleton et al. 2006*)

10 Dec. **Carbon Lab** (Martz, MESOM TBD)

11 Dec. Review session

18 Dec. **FINAL EXAM (3-6 pm; TBA) (Thursday)**