BIOL 585 Spring 2021 - Marine Ecology

Tuesday/Thursday 2:00 PM - 03:15 PM

Instructor: Dr. Kaho Tisthammer

Contact: ktist@sfsu.edu

Office Hours: Tuesday and Thursday by appointment. For all class matters please e-mail me at the address listed above.

Course Description & Objectives:
This is an upper division Marine Ecology course, and will cover the various concepts of marine ecology and biology. Marine environments have many unique components compared to terrestrial environments. We will focus on understanding different factors that influence the abundance, distribution, and diversity of marine organisms.

This course will loosely follow the textbook, Marine Biology 5th Edition by J. Levinton, with additional primary literature to supplement the course. The goal is to educate you to be a marine ecologist, being able to form scientific questions/hypotheses and figure out how to scientifically answer them. Also, our environments are rapidly changing due to human actions, including climate change. Therefore, we will also focus on understanding anthropogenic and environmental stressors and their impacts on marine organisms.

The major goals of this course are:

- To understand ecological concepts about marine coastal habitats
- To learn key factors structuring marine communities
- To read, summarize, interpret, and discuss primary scientific literature
- To discuss and interpret your ideas and findings with your peers

Course Format:
Synchronous: We will meet every Tuesday and Thursday from 2-3:15pm via Zoom at: https://sfsu.zoom.us/j/81097050570?pwd=c05xN0RqL0pqcjJpVFpNdG8xRkcydz09.

Text materials:

1. **Required**--Marine Biology: Function, Biodiversity, Ecology, 5th edition, by JS Levinton. 2017. Oxford University Press, New York. It is best to use this most up to date revision of this text.
2. Provided readings will be hardcopy or pdfs on iLearn. It is vital that you are able to access iLearn frequently for assignments.

Grading policy:

- Mid-term and Final: 100 pts each = 200 pts total
- Short paper review: One concise (1 page of appropriate requested information) reviews of an assigned scientific paper. 50 pts
- Quizzes/Assignments: These will occur periodically and will be used to help you keep up with materials covered in class. 10 quizzes/assignments during the semester 10 pts each x 10 = 100 points total.
- Weekly evaluation, including attendance and positive participation, discussion preparation: 5 pts each week = 75 pts

Total 425 points

Online Best Practices:

I understand we did not sign up for online learning. We cannot just do the same thing online: Some assignments are no longer possible, some expectations are no longer reasonable, and some objectives are no longer valuable. So we will be flexible and adjust to the situation and prioritize supporting each other. Meeting online is not the same as meeting and talking in-person, and some of you may feel shy to ask questions. But please, please email me or talk to me if you have questions, concerns, or requests for the class and school. Please get to know your peers, share resources, and help each other. Working together is highly encouraged!

Disclosures of Sexual Violence (Title IX)

SF State fosters a campus free of sexual violence including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. If you disclose a personal experience as an SF State student, the course instructor is

required to notify the Dean of Students. To disclose any such violence confidentially, contact:

- The SAFE Place – (415) 338-2208; psyservs.sfsu.edu/content/safe-place
- Counseling and Psychological Services Center – (415) 338-2208; psyservs.sfsu.edu

Disability Access

Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email to dprc@sfsu.edu.

BIOL 585 Spring 2021 - Marine Ecology Schedule

Tuesday/Thursday 2:00 PM - 03:15 PM

Note: The schedule is subject to change. Modifications will be posted on iLearn or given in class.)

	Date	Topic	Reading assignments
1	1/26/21 1/28/21	• Introduction • Scientific Method	• Chap 1 • Ecological Sampling
2	2/2/21 2/4/21	• Ocean Environment	• Chap 2
3	2/9/21 2/11/21	* CAS REU Program introduction by Dr. Lauren Esposito (10 minutes) • Climate Oscillation • Principles of marine ecology	• Chap 3 • Chap 4
4	2/16/21 2/18/21	• A short Quiz on 2/16 at 2PM • Chemical and Physical Environment • Adaptation	• Chap 5 • Sanford & Kelly (2010) ' Local Adaptation in Marine Invertebrates"
5	2/23/21 2/25/21	• Reproduction, Dispersal and Migration • (2/25) Guest Lecturer: Mr. Mykle Hoban (Phylogeography)	• Chap 7
6	3/2/21 3/4/21	• (3/2) Guest Lecturer: Dr. Alison Gould (Marine microbiology/symbiosis) • Plankton/Processes in the Water Column	• • Aprill 2017 "Marine Animal Microbiomes: Toward Understanding Host–Microbiome Interactions in a Changing Ocean" • Chap 8/11

7	3/9/21 3/11/21	• (3/9) Guest Lecturer: Ms. Brijonnay Madrigal (Marine mammal acoustics) • Marine vertebrates	• Chap 9
8	3/16/21 3/18/21	• Marine • (3/18) Guest Lecturer: Dr. Danny Coffey (Ecology of Sharks) • Mid-Term exam distribution	• Excersie16: ' When whale I sea you again?' • Chap 10
Spring Break			
9	3/30/21 4/1/21	• (3/30) No class • (4/1) Guest Lecturer: Ms. Moe Flannery (Marine Mammals, CAS)	• Chap 10 • Videos (Watch before 4/1)
10	4/6/21 4/8/21	• Marine Invertebrates • Deep Sea/ Hydrothermal vents	• Chap 14 • Chap 18
11	4/13/21 4/15/21	• Coral Reef Ecology • Coral Ecotoxicology with Ms.Lexi Meltel & Keiko Wilkins from Kewalo Marine Lab.	• TBD • Written report on Hughes 1994 due on 4/16/21
12	4/20/21 4/22/21	• The Tidelands • The Shallow Coastal Subtidal • (4/22) Guest Lecturer: Dr. Sarah Cohen	• Chap 16 • Chap 17
13	4/27/21 4/29/21	• Human Impacts 1: Climate Change • (4/29) Guest Lecturer: Dr. Emma Timmins-Schiffman (Ocean Acidification)	• Chap 12 • Poloczanska et al. 2016
14	5/4/21 5/6/21	• Human Impacts 2: Pollution • Coral Bleaching and thermal adaptation • Molecular Tools for Marine Biology	• Chap 22 • Molecular Tools Chapter

15	5/11/21 5/13/21	• (5/11) Guest Lecturer: Dr. Kaipo Perez, Traditional knowledge of natural resource management marine conservation • Invasive Species	• TBD