

## Welcome to BIOE 108: Marine Ecology!

### Course Overview:

The purpose of this course is to provide students with an understanding of 1) ecological processes that determine the patterns, structure, and dynamics of populations and communities in marine ecosystems, and 2) how to conduct ecological research to document patterns and reveal such underlying processes.

Marine ecosystems are inherently complex and have unique features that shape the way organisms live and interact with each other and the abiotic environment. In lecture we will discuss these unique features, but also frame our discussion in a manner that is generally applicable to other ecological studies and ecosystems. We will also discuss the process of doing science, then read and discuss foundational papers in marine ecology to better understand ecological processes and how to conduct rigorous ecological research.

In addition, through developing a pattern journal, students will learn to 1) look for, identify, and describe patterns in nature, 2) develop testable alternative hypotheses for the causes of observed patterns, and 3) design and carry out appropriate empirical tests of the predictions of hypotheses to explain observed patterns.

Through this course we ultimately hope to enhance students' 1) self-efficacy in identifying, understanding, and describing patterns and processes in marine ecosystems, 2) sense of belonging in the science field, and 3) sense of stewardship and appreciation for marine ecosystems and the field of marine ecology.

### Course Learning Outcomes:

Through taking this course, students will achieve learning goals based on six areas of significant learning (Fink 2003). Students will:

#### Foundational Knowledge

- **Review fundamental ecological processes that determine the patterns, structure, and dynamics of populations and communities in marine ecosystems.**
- **Understand the diversity of marine ecosystems**, the environmental drivers that influence them, their unique features, and why they are important.
- **Observe patterns** of distribution and abundance of organisms in marine ecosystems and **build capacity to describe those patterns.**
- Learn to **read, comprehend, and interpret** primary scientific literature.
- **Develop an understanding of fundamentals of scientific writing.**

#### Application

- **Learn to think like a scientist**, through all steps of the scientific method. This includes learning to **make observations, formulate hypotheses, and summarize and present findings**.
- **Demonstrate the ability to communicate original scientific work** in the form of a pattern journal.

### Integration

- **Assess threats to marine ecosystems and understand how they can contribute** to coastal science and conservation.

### Human Dimension

- **Develop collaboration skills** through working with the teaching team and other students.
- **Demonstrate self-agency** in practicing the scientific method.
- **Develop a sense of self-efficacy** through self-directed work.
- **Develop a sense of belonging in science and view themselves and each other** as co-investigators and creators of knowledge.

### Caring

- **Appreciate ecological diversity.**
- **Appreciate the scientific method.**
- **Develop a sense of stewardship** for marine ecosystems and the field of marine ecology.

### Learning how to Learn

- **Analyze their own learning**, and better understand what practices help them best access new information and knowledge.
- **Recognize that everyone has different prior knowledge and learns differently.**
- **Learn to ask questions and seek help from other students and the teaching team when it is needed.**

### **Learning Statement:**

Your success in this class is important to us, and we believe all students deserve the opportunity to succeed in this course. Our classroom will be a collaborative learning community guided by shared community principles, in which everyone's needs are prioritized to ensure equitable learning. We all learn differently, and each student has their respective challenges and needs. We will solicit student feedback throughout the quarter to better understand how the course material is being received and will adjust our teaching approach as necessary. If there are aspects of this course that you feel are preventing you from learning or exclude you, please let us know as soon as possible. Together we can develop strategies to meet both your needs and the requirements of the course.

## **Collaborative Learning Community Principles:**

Our course philosophy and operation will be guided by these principles, which aim to maximize inclusivity and accessibility to learning, and build a collaborative learning community.

### **Collaboration**

We're here to learn in a collective, interdisciplinary setting in which we help each other to develop self-efficacy and a sense of belonging in, and stewardship for, the field. We agree to participate in collaborative work, build a learning community, and incorporate the multiple perspectives of our peers.

### **Communication**

We aim to communicate openly with our colleagues motivated by our sense of curiosity.

We aim to communicate with the instructing team if we are unable to attend / participate, and we invite our instructors to practice understanding and care.

We welcome sharing obstacles or problems when we encounter them to collectively find solutions to promote access and success in this course.

### **Perspective**

We aim to arrive at each class session prepared to the best of our ability, such as by doing the readings and being ready to engage actively.

We aim to identify where our own learning edges are and push them by adopting a growth mindset and being willing to ask questions.

We recognize the agency and power of each student to create meaningful knowledge. We agree to view each other as mutual inquirers and co-creators of our learning.

### **Recognition**

We aim to cite and uplift the ideas we learn from others, such as by directly naming the person(s) and explaining what we learned from their perspective, and inviting them to say more and speak for themselves.

### **Teaching Team:**

If you have questions at any point, please don't hesitate to ask your teaching team:

Instructor: Niko Kaplanis, [nkaplanis@ucsc.edu](mailto:nkaplanis@ucsc.edu)

Teaching Assistant: Paul Kim, [pahakim@ucsc.edu](mailto:pahakim@ucsc.edu)

### **Course Administration:**

This course will be administered through Canvas. All course content can be accessed via the Course Schedule page.

### **Meeting Dates and Location:**

This course will require in-person synchronous learning. We expect students taking this course to attend each week's meetings.

2023/06/24 – 2023/07/26

Tuesday and Thursday, 0900 – 1230  
Coastal Biology Building 110

### **Office Hours:**

Niko: Tuesday and Thursday 1300 – 1400, Coastal Biology Building Redwood Room (CBB 203), and also by appointment.

Paul: Monday and Wednesday, 1100 - 1300, Coastal Biology Building Redwood Room (CBB 203), and also by appointment.

### **Course Evaluation:**

This course has four major components, each of which will require active student participation: 1) Lectures, 2) Readings and Discussions, 3) Exams, and 4) the Pattern Journal. We believe that the more engaged students are, the more interesting the material will be, and that each student has valuable contributions, so please come prepared to participate.

**Lectures** will introduce students to course concepts and foundational knowledge. They will also incorporate interactive activities that will count toward the participation portion of the grade.

**Readings** are designed to expand upon topics covered during lectures. The Reading and Discussion grade will consist of reading and annotating primary literature in Hypothesis and paired reading responses.

**Exams** will test your comprehension of content and ability to apply your knowledge. The midterm and final will each contribute to half of your exam score.

**Pattern Journals** provide an opportunity to practice skills relevant to the study of marine ecosystems, such as making observations and describing patterns in nature.

Student grades will be evaluated on the following criteria:

Lecture and Participation: 25%

Reading and Discussion: 25%

Exams: 25%

Pattern Journals: 25%

### **Grading scale:**

98 - 100% -- A+  
93 – 97% -- A  
90 – 92% -- A-  
87 - 89% -- B+  
83 – 86% -- B  
80 – 82% -- B-  
77 – 79% -- C+  
73 - 76% -- C  
70 – 72% -- C-  
50 - 69% -- D  
<50% -- F

### **Late Assignment Policy**

Assignments will generally not be accepted late. We build missing a couple assignments without penalty into the course grading. Due dates are listed on the course syllabus, modules for each week, and each assignment link. They are also announced in class, and we often send reminders. We will make accommodations if requests are proactive (made before the deadline is reached) and reasonable (context specific), so please come talk to your teaching team if you anticipate missing a deadline.

### **Academic Integrity**

All members of the UCSC community benefit from an environment of trust, honesty, fairness, respect, and responsibility. You are expected to present your own work and acknowledge the work of others to preserve the integrity of scholarship.

Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the Academic Misconduct page at the Division of Undergraduate Education.

### **Resources:**

**Accessibility Accommodations:** UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please affiliate with the

DRC. We encourage all students to benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at [drc@ucsc.edu](mailto:drc@ucsc.edu). For students already affiliated, make sure that you have requested Academic Access Letters, where you intend to use accommodations. You can also request to meet privately with us during office hours or by appointment, as soon as possible. We would like us to discuss how we can implement your accommodations in this course to ensure your access and full engagement in this course.

**CARE and Title IX:** The Title IX Office is committed to fostering a campus climate in which members of our community are protected from all forms of sex discrimination, including sexual harassment, sexual violence, and gender-based harassment and discrimination. Title IX is a neutral office committed to safety, fairness, trauma-informed practices, and due process. Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling 831-502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, 831-459-2628. You can also report gender discrimination directly to the University's Title IX Office, 831-459-2462. Reports to law enforcement can be made to UCPD, 831-459-2231 ext. 1. For emergencies call 911.

**Counseling and Psychological Services:** Many students at UCSC face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation. If you could use assistance in any way, please talk to your teaching team, and visit <https://caps.ucsc.edu/>.

**Slug Support** Is a valuable resource that can help with everything from basic needs (housing, food, or financial insecurity) to getting the technology you need. To get started with SLUG Support, please contact the [Dean of Students](#) Office at 831-459-4446 or you may send us an email at [deanofstudents@ucsc.edu](mailto:deanofstudents@ucsc.edu).

**Thank you for participating in this course!**