

# Marine Ecology

Instructor: Dr. Mark Butler    Class Hours: Tues & Thurs 11 – 12:15 MGB 353  
 Phone: 683-3609    Email: mbutler@odu.edu    Office: 310 MGB  
 Office Hrs: By appointment; this ensures that we can meet when you and I are both available.  
 Text: No text; instead you will read scientific papers that I will provide electronically.

## Course Objectives & Description

This course is designed to familiarize students with important biotic and physical processes that influence the structure and function of marine biotic communities. Our focus will be largely on the ecology of coastal marine communities, especially benthic communities, rather than pelagic communities and processes which are covered in the biological oceanography courses offered in the Department of Ocean, Earth, and Atmospheric Sciences. This course is closely tied to the Marine Ecology Laboratory (Biol 442/542) course, which students are required to take concurrently. Therefore, the distribution of your effort and the credits assigned to each course may not match precisely. Marine Biology (Biol 232) and a previous course in ecology are prerequisites for this course. Thus, I will assume that you have an understanding of general ecological principals and know the basic taxonomy and biology of marine organisms.

## Course Outline

- I. Introduction: history and niche of marine ecology; contrasts to terrestrial ecosystems
- II. Fluid dynamics at small-to-large scales & effects on the ecology of marine organisms
- III. Larval Ecology and Population Connectivity
- IV. Ecology of Coastal Marine Communities
  - A. Estuaries & Salt Marsh Communities
  - B. Mangrove Communities
  - C. Coral Reef Communities
  - D. Seagrass Communities
  - E. Soft-sediment Communities
  - F. Rocky Communities: intertidal & subtidal
- V. Conservation Issues in Marine Ecosystems

## Important Dates to Remember

Oct 1	<b>Exam #1</b>
October 10 & 15	Class trip to Florida Keys
Oct 17	No Class – work on Florida Keys data
November 12	<b>Exam #2</b>
November 28	No Class - Thanksgiving holiday
December 10	<b>Exam #3 (12:30PM; Exam Week)</b>

## Literature Readings in Lieu of a Text

There is no text for this class. Instead, each week I will email you pdf files of scientific papers from the marine ecology literature that correspond with topics that I will be presenting in class. Read them, and be prepared to discuss them in class and to answer questions about them on exams. We will also discuss a few of these papers in detail during group discussions scheduled during lab on November 7<sup>th</sup> and 21<sup>st</sup>.

<u>Assignment</u>	<b>Course Grading</b>	
	<u>Undergraduate Students</u>	<u>Graduate Students</u>
Exam I	300	300
Exam II	300	300
Exam III	300	300
Public Presentation Abstracts (2 @ 50/25pts each)	100	50
Grad Student Lecture	<u>not applicable</u>	<u>50</u>
Total:	1000	1000

**Exams:** The exams will evaluate not only your comprehension of the course material, but your ability to synthesize information. Exams will not be returned to you, but you will have the opportunity to review them. I will assign “+” and “-” to final grades.

**Public Presentation Abstracts:** You are required to attend at least two public scientific presentations held at ODU on a marine science topic. Typically, these are departmental seminars in the Departments of Biological Sciences (Fridays at 3PM), Ocean, Earth & Atmospheric Sciences (Thursdays at 3PM), and the Center for Coastal Physical Oceanography (Mondays at 3PM). Within one week after the seminar, you must submit to me via email a written abstract encapsulating that seminar. The abstract must be no more than 250 words and should summarize the seminar content in the following order: importance/objectives of the research, methodology, results, and implications. Abstracts will be graded on content, format, and grammar.

**Grad Student Lecture:** Graduate students are required to give a 30 minute lecture to the class. Graduate students will meet with me twice (see schedule below) in the course of developing their lectures. First for approval of the topic and second for approval of the lecture outline and choice of lecture materials. The topics covered should be timely and should include information from current primary scientific literature. Appropriate visual aids should be included in the lecture. You will receive written feedback on your lecture from the other students in the class and from me.

Topic approval due:	September 12
Lecture Outline approval due:	October 3
Lecture given on:	November 26

**Original Work & My Classroom Policies:** Students in this course are expected to adhere to the University's Honor Code (see university website for details). I will follow the university's formal procedures for dealing with honor code violations, which are severe, so lets not make this an issue. If you encounter problems that might influence your performance in the course, see me as soon as possible – do not wait until the last minute. It is best to contact me by email, telephone, or after class so as to make an appointment. If you do so, I will be happy to meet with you as long as is necessary. Please do not drop by my office unannounced, especially before class.

#### **Classroom Requirements of the Department of Biological Sciences**

1. There is to be no consumption of food or drink in the laboratory or lecture rooms. If you require food or drink for medical reasons, please move to the lobby.
2. If you are in conflict with a faculty or staff member, your first point of contact is the Biology Chairman. The chairman's office is located in room 110 of MGB.
3. Inform the instructor of any medical conditions or needs you may have.
4. Turn off electronic devices (cell phones, hand palms, etc.) during the lecture and laboratory periods.
5. Read the document “Safety in the Biology Teaching/Research Labs”, which is located in each laboratory. For laboratory courses, fill out and sign the Emergency Information Sheet, which will be provided for you.