

Instructor: James Hunt, Director of Marine Sciences at East Stroudsburg University

Required Materials:

- Marine Biology: an ecological approach by J.W. Nybakken & M.D. Bertness
- dedicated notebook for field log/lab notes

Course purpose: marine ecology is a sub-discipline of marine science that investigates the relationship of organisms and their environment. As such, it requires a comprehensive review of many areas of marine biology as well as physical and chemical oceanography. The focus of this course is on field methods and quantitative data analysis. Though calculators are permitted, students will be expected to understand how to apply mathematical tools to datasets, how to approach a variety of questions in ecology, and begin to appreciate the creative process that is at the core of all scientific inquiry.

Course goals: by the end of this course, you should be able to: 1) identify the major ecological systems in the oceans and define the unique characteristics for survival and the dominant organisms found in each, 2) use a variety of field and lab methods (including biodiversity indices) to analyze ecological questions and 3) have an increased understanding and appreciation for the intricacies of oceanic ecology.

Grading:

|                  |     |
|------------------|-----|
| 3 one-hour exams | 75% |
| Lab & Field work | 25% |

Course Grading Scheme:

|               |
|---------------|
| A = 90 – 100% |
| B = 80 – 90%  |
| C = 70 – 80%  |
| D = 60 – 70%  |
| E = below 60% |

Exams: there will be three exams during the course. Each will be worth 25% of your final grade. Reading the textbook will be essential to doing well on the exams. Although material in class will highlight the reading, we cannot cover all aspects presented in the text in detail in the classroom.

Laboratory & Field work: this is obviously a class where work in the field and laboratory will be important. Students will be given assignments to complete either independently, in small groups, or sometimes as a class. Your individual participation therefore is essential for a successful class project, and for your own lab & field grade. You will be required to keep a lab & field notebook of your observations, data, lab work, and general information. I will collect these notebooks before the end of the course and assign a grade for your work based on completeness, organization, and clarity. Grades from your notebook, homework assignments, and participation in class will all be reflected in a final lab & field grade worth 25% of your final grade.

## Daily Syllabus

| Day                | Topics   | Reading/assignments                    |
|--------------------|--|--|
| Monday, June 11    | PM: Introduction to the course;<br>Review water structure and properties<br>Basic Ecology and Oceanography     | Chapter 1                              |
| Tuesday, June 12   | AM: estuaries; salt marshes<br>PM: describing distributions  | Chapter 8                              |
| Wednesday, June 13 | AM: <i>Field Trip: Chincoteague Park</i><br>PM: Plankton; Larval ecology; biodiversity indices                 | Chapter 2                              |
| Thursday, June 14  | ALL DAY PARKER CRUISE  |  |
| Friday, June 15    | AM: Lab work on plankton<br>PM: TBA  | Study for Exam I !                     |
| Monday, June 18    | AM: <b>EXAM I</b><br>PM: Subtidal benthic communities  | Chapter 5 (minus seagrasses)           |
| Tuesday, June 19   | ALL DAY MONITOR CRUISE TO TOM'S COVE   |  |
| Wednesday, June 20 | AM: Lab work from Tom's Cove<br>PM: Deep-sea Ecology   | Chapter 4                              |
| Thursday, June 21  | AM: Intertidal ecology<br>PM: <i>Field trip, intertidal</i>  | Chapter 6                              |
| Friday, June 22    | AM: tropical ecosystems<br>PM: TBA   | Chapter 9<br>Study for Exam II !       |
| Monday, June 25    | AM: <b>EXAM II</b><br>PM: seagrasses, behavioral ecology, nekton   | Chapter 3<br>Seagrasses from Chapter 5 |
| Tuesday, June 26   | ALL DAY MONITOR CRUISE TO GREENBACKVILLE   |  |
| Wednesday, June 27 | AM: lab work from Greenbackville<br>Human impacts<br>PM: <i>Field trip: Wallops Island schedule permitting</i> | Chapter 11                             |
| Thursday, June 28  | AM: Global Ecology/Future Work<br>PM: Lab clean up   | Field and lab notes collected          |
| Friday, June 29    | AM: <b>Exam III</b>  |  |