

**East West Marine Biology**  
**Marine Botany**  
**Bio U501;502**  
**Fall, 2003**

Instructor: Donald Cheney, Office: 442 RI and MSC  
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Office hrs.: by appointment and while at MSC

Lecture and Lab: 9:00-5:00, Fridays at MSC

Textbooks:

1. *Algae*, by Linda Graham and Lee Wilcox, 2000, Prentice-Hall
2. *Illustrated Key to the Seaweeds of New England*, by Martine Villalard-Bohnsack

**Tentative Lecture and Laboratory Schedule**

- Sept. 12 - Lecture 1: Course introduction; overview of algae, marine plants; local and regional biogeography  
Lecture 2: Nomenclature, species definitions and modern taxonomic tools  
Lab: General collecting, use of keys, microscopes, making herbarium specimens; MSC herbarium collection
- Sept. 19 - Lecture 1 & 2: Chlorophyta  
Lab: Collecting and identification of Chlorophyta
- Sept. 26 - Lecture 1 & 2: Phaeophyta  
Lab: Collecting and identification of Phaeophyta  
Special: Discussion of Metaxas and Scheibling paper
- Oct. 3 - Lecture 1 & 2: Rhodophyta  
Lab: Collecting and identification of Rhodophyta, and identification of tide pools for field study  
Special: Algae Quiz!
- Oct. 10 - Lecture 1 & 2: Seaweed ecology and adaptations  
Lab: Conduct tide pool study; discuss results, methods of analysis
- Oct. 17 - Lecture: Trip to Woods Hole and MBL, on Cape Cod  
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- Oct. 24 - Lecture: Trip to Cobscook Bay, ME  
Lab: Trip to Cobscook Bay, ME
- Oct. 31 - Lectures 1 & 2: Phytoplankton groups; diatoms, dinoflagellates  
Lab: Boat trip, dredging and plankton tows; plankton identification  
Special: Research talk  
Tide pool reports due.
- Nov. 7 - Lecture: 1 & 2: Applied phycology - seaweed uses, aquaculture and biotechnology  
Lab: Examples of seaweed products in food and industry

- Nov. 14 -      Lecture: Salt marsh plants and seagrasses  
                  Lab:     Collection and comparison of marsh plants and seagrasses  
                  Special: Guest lecture
- Nov. 21 -      Presentation of student independent project oral reports
- Nov. 28 -      Lecture: Thanksgiving - no class!!!  
                  Lab:     Thanksgiving - no class!!!
- Dec. 5 -        Preparation of “Algal identification notebooks” and study for lab practical
- Dec. 12 -      Final Exam and lab practical  
                  Independent project written reports and Algal ID notebooks due

### **Course Objectives, Requirements & Grading**

The purpose of this course is to introduce students to the major groups of macro- and microscopic marine algae and flowering plants, with an emphasis on the flora of the Gulf of Maine. The course will include both classical training in the identification of the algae, as well as the latest molecular and evolutionary information. In addition, ecological and physiological adaptations of algae will be discussed, and wherever possible, examples of their economic importance described.

Students will be expected to prepare a laboratory "write-up" on a tide pool study, to keep an identification notebook, and to present an oral and written independent project report on “The greatest alga(algae) is (are)...”. For the latter, you will research a single algal species, genus or group that you feel are important and discuss why and how. The alga (algae) may be important ecologically or economically, or has made important contributions to cytological, evolutionary studies, etc.

A summary of how grading will be determined follows:

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|--------------------------------|-----|
| 1. Tide pool study report      | 15% |
| 2. Algal ID notebook           | 10% |
| 3. Independent project reports | 25% |
| 4. Final exam and practical    | 50% |