BIO 312 001/200  MARINE BOTANY  SPRING 2010

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Office hrs: Tue.& Thur. 8:30-9:30am, 11-12pm; Tue. 11-12:30pm FR 1002A

Lecture: Tue. & Thur., 9:30-10:45am FR-3014  Lab: Thur., 2:00-4:50pm FR-3104

Texts:  (A)  Marine Botany, C. J. Dawes, Wiley
       (B)  The Botany Coloring Book, P. G. Young, Harper-Perennial.

Materials: Fine-line felt tip coloring pens, folder for herbarium sheets.

Evaluation:  A=90-100, B=80-89, C=65-79, D=50-64, F=0-49
1.  150  Lab Practicals (3) 50 pts each.
2.  100  Herbarium collection (15 species, including at least 10 algal species - 10 pts each).
3.  100  Library work - Annotated bibliography: summaries of 10 research papers on marine or
       freshwater plants published since 1990 from peer-reviewed scientific journals. Summaries
       must be complete and accurate with the complete citation (see format below). One per week for
       first ten weeks of course, due on Tuesday (10 pts each, graded for format, summary, spelling,
       syntax, and grammar).
4.  400  Lecture Exams (4) 100 pts each.
5.  50   Class participation and Lab work (discussions, lab homework, drawings, field trips)

Herbarium collection:  1) One species per sheet (your name in pencil on the back, lower left).
2) Specimen firmly attached to paper and aesthetically arranged (no overlapping tissues).
3) Herbarium label (use only labels provided) attached to lower right-hand corner of sheet.
4) Label must be typed and correctly state: a) Genus species Author, b) Family, c) Collector's Name,
   d) Collection Date, and e) Place of Collection.
5) Your 15 best specimens are due by the last day of class in order to be evaluated.

Annotated Bibliography:  Typed or printed neatly, one summary per sheet, should be the size of a 5 x
8 Index card.
Format: Author Last Name, Initials. Year Published. Title (only first word and proper nouns

characteristics affect diel estimates of in situ electron transport of Posidonia australis. Aquatic Botany
80: 209-220.
This paper reported on the results of a study where virtually simultaneous replicated measurements
of diel changes in effective quantum yields of eight Posidonia australis short shoots were obtained in situ
over a two-day period using a multi-channel PAM fluorometer. Leaf-specific spectral absorptance
was also determined on leaves from the same eight short shoots using a fiber-optic spectrometer. The
results demonstrated diel variation in photosynthetic characteristics with highest yields recorded
during the night and minimum values during mid-day. Among-shoot variability in yield was generally
low, with a standard deviation about 10% of the mean, except during mid-day when variability rose to
about 25% of the mean. Absorptance of PAR (400 to 700 nm) was about 68% of total irradiance, with
about 7% reflected and 16% absorptance by non-photosynthetic tissues. The results indicated that
reflectance and non-photosynthetic absorptance need to be taken into account when estimating electron
transport rates from quantum yield measurements.
Course Goals: After taking this class students should be able to-

1. Explain how the marine environment and marine plants interact;
2. Recognize the main biochemical, morphological and life history characteristics that taxonomically separate marine and coastal plants;
3. Access and summarize scientific literature dealing with marine plants;
4. Utilize a dichotomous key to identify local marine macroalgae; and
5. Prepare properly labeled marine plant herbarium specimens.

Disabilities: The course instructor is happy to make accommodations to those students with disabilities. Students should first contact the Office of Disability Services in Westside Hall (3746). After obtaining your referral from this office, please contact the faculty in your course.