I. COURSE: Ecology of Marine Plants 4 semester hours (3:3)
MWF 10-10:50 Room BH 234
Laboratory: M 1-4 Room CS 240
Laboratory: W 2-5 Room CS 240

Office Hours are posted on the door (CS 247)
Additional Hours Available by Appointment

II. FACULTY: Dr. Roy L. Lehman CS 247
Phone: 825-5819 Email: roy.lehman@tamucc.edu
Office Hours Posted CS247 Additional Hours by Appointment.

III. COURSE DESCRIPTION:

Marine plants are a diverse group that includes unicellular algae, seaweeds, seagrasses, salt marshes, and mangrove forests. The goal is to present taxonomic, physiological, chemical, and ecological aspects of marine plants, their adaptations, and how abiotic and biotic factors interact in their communities. The use of recent journals and original scientific research will allow the student to evaluate anthropogenic effects to these communities and develop methods of restoration and management. Prerequisite: none.

IV. TEXTBOOKS:

Required:


Marine Botany Laboratory Manual
Compiled by Roy L. Lehman. Offered as a download by Dr. Lehman.
V. STUDENT LEARNING OUTCOMES:

The student will:

- describe the ecological and environmental properties which effect the growth, physiology and distribution of marine plants (seagrasses, halophytes, macroalgae).
- list the characteristics, environmental factors and composition of each of the major marine plant communities.
- evaluate and describe human influences on marine plant environments.
- discuss and explain methods for the management of marine plant systems.

VI. COURSE REQUIREMENTS AND GRADING CRITERIA:

Evaluation is ongoing to enhance experimental learning, providing the student with feedback about performance in meeting the course objectives. Conferences with the faculty provide opportunities to discuss progress toward the course objectives. Grading is a process of measuring the outcome of learning against standards and assigning a symbol to the level of performance achieved.

All students are expected to conform to college-level standards of ethics, academic integrity, grammar and spelling. In particular, you should review pages 19-28 of the 2006-2007 A&M-CC graduate catalog. Except in cases where prior arrangements have been made with the instructor, there is no provision for making up late work and/or missed quizzes or exams. All excuses MUST be recorded with the professor by e-mailing information including the student’s name, class, date, time and reason for the absence. Two or more absences from class/field activities may result in an unsatisfactory grade for the class.

Disability and Veterans’ Services: Texas A&M University-Corpus Christi is committed to providing persons with disabilities an equal opportunity to access campus facilities, resources and programs. The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. Support and accommodations are also available for returning veterans who experience cognitive and/or physical access issues in the classroom or on campus. Our Office of Disability Services arranges such support and academic accommodations. To make a request, or for more information, call (361) 825-5816 or visit Driftwood 101. It is important to contact the Office of Disability Services in a timely fashion as it will take time for them to review requests and prepare accommodations and accommodation letters.

Grade Appeals: As stated in the Texas A&M University-Corpus Christi University Rules and Procedures (Section B [Academic Program], Part 13 [Students]: 13.02.99.C2 [Student Grade Appeals] and 13.02.99C2.01 [Student Grade Appeal Procedures]), a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult the University Rules and Procedures specified above (accessible through the University Rules and Procedures website at http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.
LABORATORY REQUIREMENTS

REQUIREMENT VALUE

1. Students will collect samples of marine plants from various habitats each week and prepare an archive of herbarium mounts and microscope slides (mounts) representing the flora of different marine plant communities .............................................................. 400

2. Term paper of a field or laboratory research project completed in the laboratory (includes journal research) .......................................................... 200

3. Students will complete two laboratory exams ........................................... 200

TOTAL: ........... 800

VII. COMPONENTS OF COURSE GRADE:

<table>
<thead>
<tr>
<th>VALUE</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>200</td>
<td>600</td>
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<tr>
<td>100</td>
<td>200</td>
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<td>200</td>
<td>600</td>
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TOTAL: 1,400

FINAL GRADE: Total Number of points ÷ 1,400 = FG (%)

FINAL EXAMINATION DATE: December 16, 2009???? (8-10:30)

Required Equipment/Materials for the class/laboratory/field trips:

- Plant Press
- Dissecting Kit
- Pocket Knife
- Nylon/Rayon Material
- Field Notebook
- Zip Loc Bags

VIII. LECTURE TOPIC OUTLINE

A. INTRODUCTION

1. Marine Plants and their Environment
2. Marine Plant Sampling Methods

B. ECOLOGICAL AND ENVIRONMENTAL PROPERTIES

1. Geological Factors and Descriptions
2. Hydrological (Physical) Factors
3. Chemical Factors
4. Ecology and Geographic Distribution
5. Marine Plant Physiology

C. **THE DIVISIONS OF ALGAE (An Overview)**
   1. Cyanophyta
   2. Chlorophyta
   3. Phaeophyta
   4. Rhodophyta
   5. Chrysophyta
   6. Pyrrophyta

D. **MARINE PLANT COMMUNITIES**
   1. Salt Marsh Communities
   2. Seagrass Communities
   3. Lithophytic Communities
   4. Phytoplankton Communities

E. **HUMAN INFLUENCES ON MARINE PLANT ENVIRONMENTS**
   1. Marine Pollution
   2. Effects of Dredging
   3. Biocides and Heavy Metals
   4. Utilization of Marine Plants

F. **MANAGEMENT SUGGESTIONS AND DISCUSSIONS**

**IX. LABORATORY/FIELD TRIP TOPIC OUTLINE: “TENTATIVE”**

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab #</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/31 &amp; 9/2</td>
<td>Lab # 1</td>
<td>Introduction/Laboratory Techniques</td>
</tr>
<tr>
<td>9/9</td>
<td>Lab # 3</td>
<td>Salt Marsh/Blind Oso</td>
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<tr>
<td>9/14 &amp; 16</td>
<td>Lab # 4</td>
<td>Algae from the Port Aransas Jetties (Demo/Notes)</td>
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<tr>
<td>9/21 &amp; 23</td>
<td>Lab # 6</td>
<td>Sea Grasses/Upper Laguna Madre Plants</td>
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<tr>
<td>9/25-9/26</td>
<td><strong>Field Trip to Laguna Madre Field Station; Fri-Sat</strong></td>
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<tr>
<td>9/28 &amp; 9/30</td>
<td>Lab # 5</td>
<td>Lithophytic Communities</td>
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<tr>
<td>10/5 &amp; 7</td>
<td>Lab # 7</td>
<td><strong>Field Trip to Port A Jetties</strong></td>
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<tr>
<td>10/9-10/10</td>
<td><strong>Field Trip to Laguna Madre Field Station; Fri-Sat</strong></td>
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<tr>
<td>10/12 &amp; 14</td>
<td>Lab # 8</td>
<td><strong>First Laboratory Examination</strong></td>
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<tr>
<td>10/19 &amp; 21</td>
<td>Lab #9</td>
<td><em>Spartina</em> marsh/Gulf Beach Plants</td>
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<tr>
<td>10/26 &amp; 28</td>
<td>Lab # 10</td>
<td>Laboratory Project first half due.</td>
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<tr>
<td>11/2 &amp; 4</td>
<td>Lab # 11</td>
<td>Corpus Christi Bay Shoreline</td>
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<tr>
<td>11/9 &amp; 11</td>
<td>Lab # 12</td>
<td>Laboratory Project Work Day</td>
</tr>
<tr>
<td>11/16 &amp; 18</td>
<td>Lab # 13</td>
<td>Laboratory Project Work Day</td>
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<tr>
<td>11/23 &amp; 25</td>
<td>Lab # 14</td>
<td><strong>Final Project Due.</strong></td>
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<tr>
<td>11/30 &amp; 12/2</td>
<td>Lab #15</td>
<td><strong>Final Laboratory Examination</strong></td>
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**LAB SAFETY BRIEFINGS:** Mandatory Laboratory Safety Briefings are scheduled outside of the regularly scheduled lab time. You must attend and complete one of the Lab Safety Briefings to be admitted into your lab.