I. COURSE: Marine Botany 4 semester hours (3:3)
MWF 10-10:50 Room CI 122
Laboratory: M 1-4 Room CS 240
Laboratory: W 2-5 Room CS 240

II. FACULTY: Dr. Roy L. Lehman CS 247
Phone: 825-5819 roy.lehman@tamucc.edu
Office Hours: MWF 9-10; MWF 11-12
Additional Hours Are Available by Appointment

III. COURSE DESCRIPTION:
The course includes studies into the ecology, community structure and environmental characteristics of marine plants. The coastal waters of the Gulf of Mexico are a valuable national and regional resource. In order to safeguard that resource, we need to know and study the biological components of the marine and estuarine waters of that region. Marine plants form the base of the food chain within the environment and may be the first indicator of possible ecological problems. The emphasis in the class will be directed towards the identification of common marine plants, their habitat structure, the study of life histories and the environmental factors affecting the ecology of the marine plants.

IV. TEXTBOOK:
Recommended:


*Marine Botany Class and Laboratory Manual*
Compiled by Roy L. Lehman. Includes supplemental readings as PDF’s. Offered as a free 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.

*list the characteristics, environmental factors and composition of each of the major marine plant communities.

*differentiate between the divisions of marine plants.

*evaluate and describe human influences on marine plant environments.

*discuss and explain methods of 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 24-41 of the 2009-2010 A&M-CC 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.
Dropping a Class: I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November __, 2011 is the last day to drop a class with an automatic grade of “W” this term.

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

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

**LABORATORY REQUIREMENTS**

1. Students will collect and curate samples of algae/marine plants from various habitats each week. One-half of the project (slides and/or herbarium mounts) is due by the end of laboratory session on either **October 17 or 19, 2011** depending upon your laboratory schedule. (All of A & B are due on either **November 21 or 23, 2011** by 5 pm)

   **A.** Students will prepare 20 microscope slides (mounts) showing different marine algal structures ............................................................... 200

   **B.** Students will prepare 25 herbarium mounts of marine plants ............... 200

   - Rhodophyta = 7; Phaeophyta = 4; Chlorophyta = 4;
   - Halophytes (flowering = + points) = 6; Seagrasses = 4

2. Student quizzes ................................................................. 30

3. Students will complete two laboratory exams (100 points each) ................................................................. 200

   **TOTAL:** ........................................................................ 630

**VII. COMPONENTS OF COURSE GRADE:**

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Examinations (3)</td>
<td>200</td>
</tr>
<tr>
<td>(9/30; 11/5; 12/14)</td>
<td></td>
</tr>
<tr>
<td>Laboratory Exams (2)</td>
<td>100</td>
</tr>
<tr>
<td>Laboratory Quizes</td>
<td>30</td>
</tr>
<tr>
<td>Laboratory Projects (2)</td>
<td>200</td>
</tr>
</tbody>
</table>

**TOTAL:** 1,230

**FINAL GRADE:** Total Number of points – 1,230 = FG (%)

**FINAL EXAMINATION DATE:** December 14, 2011 (8-10:30)
VIII. LECTURE TOPIC OUTLINE

A. **INTRODUCTION**
   Week 1
   1. Marine Plants and their Environment
   2. History of Phycology in the Gulf of Mexico (Overview)

B. **ECOLOGICAL AND ENVIRONMENTAL PROPERTIES**
   Week 2
   1. Geological Factors and Descriptions
   2. Hydrological (Physical) Factors
   3. Chemical Factors
   4. Ecology and Geographic Distribution
   5. Marine Plant Physiology

C. **THE ALGAE**
   Week 3
   1. Cyanophyta
   Week 4
   2. Chlorophyta
   Week 5
   3. Phaeophyta
   Week 6
   4. Rhodophyta
   Week 7
   5. Chrysophyta
   Week 8
   6. Pyrrophyta
   7. Cryptophyta/Euglenophyta

D. **MARINE PLANT COMMUNITIES**
   Week 9
   1. Salt Marsh Communities
   Week 10
   2. Seagrass Communities
   Week 11
   3. Lithophytic Communities
   Week 12
   4. Mangrove Communities
   Week 13
   5. Coral (Biotic) Reefs
   6. Phytoplankton Communities
   7. Marine Fungi and Bacteria

E. **HUMAN INFLUENCES ON MARINE PLANT ENVIRONMENTS**
   Week 14
   1. Marine Pollution
   2. Effects of Dredging
   3. Biocides and Heavy Metals
   4. Utilization of Marine Plants

F. **MANAGEMENT SUGGESTIONS AND DISCUSSIONS**
   Week 15
### IX. LABORATORY/FIELD TRIP TOPIC OUTLINE: “TENTATIVE”

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab/Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/27 &amp; 8/29</td>
<td>Lab # 1 Introduction/Laboratory Techniques</td>
</tr>
<tr>
<td>9/3</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>9/5</td>
<td>Salt Marsh/Blind Oso Bay</td>
</tr>
<tr>
<td>9/10 &amp; 9/12</td>
<td>Lab # 2 Salt Marsh/Blind Oso Bay</td>
</tr>
<tr>
<td>9/17 &amp; 9/19</td>
<td>Lab # 3 Sea Grasses/Upper Laguna Madre Plants/Seaweeds</td>
</tr>
<tr>
<td>9/21-9/22</td>
<td><strong>Field Trip to Laguna Madre Field Station; Fri-Sat</strong></td>
</tr>
<tr>
<td>9/24 &amp; 9/26</td>
<td>Lab # 4 Algae from the Port Aransas Jetties (Demo/Notes)</td>
</tr>
<tr>
<td>9/29</td>
<td><strong>Field Trip/Port A Jetties</strong></td>
</tr>
<tr>
<td>10/1 &amp; 10/3</td>
<td>Lab # 5 Lithophytic Communities</td>
</tr>
<tr>
<td>10/5 &amp; 10/6</td>
<td><strong>Field Trip to Laguna Madre Field Station; Fri-Sat</strong></td>
</tr>
<tr>
<td>10/8 &amp; 10/10</td>
<td>Lab # 6 Lithophytic Communities</td>
</tr>
<tr>
<td>10/15 &amp; 10/17</td>
<td>Lab # 7 <strong>First Laboratory Examination</strong></td>
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<tr>
<td>10/22</td>
<td>Lab # 8 Laboratory Project first half due.</td>
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<tr>
<td>10/29 &amp; 10/31</td>
<td>Lab # 9 Jetties/Phytoplankton</td>
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<tr>
<td>11/5 &amp; 11/7</td>
<td>Lab # 10 Laboratory Project Work Day</td>
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<tr>
<td>11/12 &amp; 11/14</td>
<td>Lab # 11 Laboratory Project Work Day</td>
</tr>
<tr>
<td>11/19</td>
<td>Lab # 12 <strong>Final Project Due</strong></td>
</tr>
<tr>
<td>11/26 &amp; 11/28</td>
<td>Lab # 13 <strong>Final Laboratory Examination</strong></td>
</tr>
</tbody>
</table>

**LABORATORY SAFETY:** Mandatory Laboratory Safety Courses are scheduled outside of the regularly scheduled laboratory time. You must successfully complete the ON-LINE Laboratory Safety Course and submit proof of completion to your Laboratory instructor to be admitted into your lab.