I. COURSE: BIOL 5430 Marine Plankton 4 semester hours (3:3)
Lecture: TR 8-9:15 Room BH 224
Laboratory: R 1-4 Room CS 240

II. FACULTY: Dr. Roy L. Lehman CS 247
Phone: 825-5819 roy.lehman@tamucc.edu
Office Hours are posted on the door (CS 247)
Additional Hours Available by Appointment

III. COURSE DESCRIPTION:
A study into the systematics, distribution and ecology of marine plankton with emphasis on their communities and environmental characteristics. 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 the region. Microscopic plants and animals form the base of the marine 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 collection and identification of common marine plankton, comparative analysis of field samples, identification of habitat structure, the study of life histories and the environmental factors affecting the ecology of the marine plankton. Current literature topics will also be reviewed.
Pre-Requisites: Marine Ecology or equivalent.

IV. TEXTBOOKS:
   ISBN 0-12-693018-X QK934.I44
   ISBN 0-7872-2113-9
   ISBN 0-8018-8168-4

Bibliography/References:
A computer file of scientific journal articles, book chapters (as.pdf’s) and professor generated literature and guides will be available and required reading to all students.
V. STUDENT LEARNING OUTCOMES:
The student will:

* describe the ecological and environmental properties which effect the growth, physiology and distribution of marine plankton.

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

* differentiate between the major groups of marine plankton.

* evaluate and describe human influences on marine planktonic environments.

* review and discuss current marine plankton literature topics and evaluate the future direction of research especially with improved technology.

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 19–29 of the 2007-2008 A&M-CC graduate catalog.

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, 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.
VIII. COMPONENTS OF COURSE GRADE:

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>VALUE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lecture Examinations (2)</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>2. Library Research Project/Presentation</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>2. Laboratory Exam (2)</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>3. Laboratory Projects (3)</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
<td>1,000</td>
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</tbody>
</table>

FINAL GRADE: Total Number of points ÷ 1,000 = FG (%)

Grade Values
90% - 100% = A
80% - 89% = B
70% - 79% = C
60% - 69% = D
0 – 59% = F

LABORATORY REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students will collect samples of plankton from various habitats each week and:</td>
<td></td>
</tr>
<tr>
<td>A. Students will prepare 20 microscope slides (mounts) identifying different marine plankton</td>
<td>100</td>
</tr>
<tr>
<td>B. Students will prepare 25 digital images of marine plankton</td>
<td>100</td>
</tr>
<tr>
<td>C. Students will develop Keys for Common Plankton of the Texas Gulf Coast</td>
<td>100</td>
</tr>
<tr>
<td>2. Students will complete two laboratory exams (200 points)</td>
<td>200</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>500</td>
</tr>
</tbody>
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IX. LECTURE TOPIC OUTLINE

A. INTRODUCTION
1. Marine Plankton and their Environment
2. Historical Background (Overview)

B. USE OF FIELD SAMPLES AND CULTURES IN RESEARCH
1. Comparison of field sampling methods
2. Culture methods for marine plankton
3. Comparison of Analytical Methods
4. Ecology and Geographic Distribution of Marine Plankton
C. COMPARATIVE MORPHOLOGY AND ULTRASTRUCTURE
1. Cyanophyta (Blue-green Algae)
2. Marine Diatoms
3. Dinoflagellates
4. Planktonic Marine Flagellates
5. Modern Coccoithophorids
6. Zooplankton Phyla

D. CURRENT LITERATURE TOPICS

E. MANAGEMENT SUGGESTIONS AND DISCUSSIONS

X. LABORATORY/FIELD TRIP TOPIC OUTLINE:

9/3  Lab # 1  Field Sampling Techniques; Laboratory Techniques
9/10 Lab # 2  Field Sampling - Corpus Christi Bay; Id of Field Material
9/17 Lab # 3  Id of Field Material; Permanent Mount Preps.
9/24 Lab # 4  Field Sampling - Port Aransas & Redfish Bay; Identification,
10/1  Lab # 5  Id of Field Material; research & readings
10/8  Lab # 6  Id of Field Material; research & readings
10/15 Lab # 7  Field Sampling - Nueces Bay
10/22 Lab # 8  Prep for Field Trip; Id of Field Material
10/22-24 Field Sampling – Laguna Madre Diurnal & Baffin Bay
10/29 Lab # 9  Identification of Field Material; Cleaning of Diatom Frustules
11/5  Lab # 10 Evaluation of Field Samples
11/12 Lab # 11 Evaluation of Field Samples
11/19 Lab # 12 Evaluation of Field Samples
12/3  Lab # 13 Final Lab Exam

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.