Texas A&M University - Corpus Christi  
College of Science and Technology  
Department of Physical and Environmental Sciences  

Course Syllabus  
CMSS 6307 – Coastal and Marine Systems  

Fall 2013  

INSTRUCTOR:  
TBD  

CLASS MEETING:  
Monday & Wednesday, 10:00 am - 11:15 am, Center for Instruction (CI) 128  

TEXTBOOKS:  
Class Textbook, Required:  
Estuarine Ecology, 2nd Edition, John W. Day (Editor), W. Michael Kemp (Editor), Alejandro Yáñez-Arancibia (Editor), Byron C. Crump (Editor).  

I. COURSE CATALOG DESCRIPTION  
Description of coastal and oceanic ecosystems to provide an overview of the fundamental concepts of the abiotic and biotic components, physical-chemical processes, and interactions with environmental and human systems.  

II. COURSE AUDIENCE  
Ph.D. students in the Coastal and Marine Science System Science or Marine Biology doctoral programs are the primary audience for this course. Secondary audience includes Masters graduate students in Biology, Environmental Science, Marine Biology, Mariculture and Fisheries, and Mathematics.  

III. LEARNING OUTCOMES  
At the conclusion of this course the student should be able to:  
1. Identify and categorize various coastal and oceanic physical and chemical features.  
2. Analyze principles for the processes that drive circulation, tides, and biogeochemical dynamics.  
3. Identify major biological resources and human interactions with coasts and oceans.  
4. Evaluate the interactions between physical, biological, and human systems.  
5. Synthesize the current issues related to coastal and ocean systems world-wide.  

IV. COURSE TOPICS  
- System Science concept (energetics, cycles, coupled systems).  
- Watersheds and hydrology
- Land use change.
- Basic ecology (food webs, interactions)
- Hot button issues, problems is the coastal zone: For example: climate change, sea level rise, eutrophication; and then analyze/discuss the problem from each perspective.
- Introduction to oceanography topics (currents, tides, waves, water chemistry, geomorphological conditions, survey life in the ocean).
- Natural versus human influenced systems.
- History of the field with descriptions of the “big name” founders
- Human dimensions of coastal and marine systems.

V. INSTRUCTIONAL METHODS AND ACTIVITIES

Traditional lectures via board demonstrations and power point presentations, classroom discussions, and student projects.

Homework will consist of assigned readings and critical analysis of scientific papers from the primary literature. Students will make class presentations and lead discussions on their readings and analyses. All students will participate in the discussion.

Projects are required that will entail reviewing scientific literature on a specific area of the student’s choosing from within the broad topic of coastal and ocean systems. Students will write a prospectus listing a bibliography of materials to be reviewed, prepare a written project report, and present the results of the report orally in class.

VI. EVALUATION AND GRADE ASSIGNMENT

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Overall Grade Percentage</th>
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<tbody>
<tr>
<td>Homework, journal article reviews and class topic presentations</td>
<td>20%</td>
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<tr>
<td>Mid-term Exam</td>
<td>30%</td>
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<tr>
<td>Term paper and Presentation</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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<tr>
<td>Total:</td>
<td>100%</td>
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<table>
<thead>
<tr>
<th>Class Average X</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>X ≥ 90.0%</td>
<td>A - Excellent</td>
</tr>
<tr>
<td>89.9% ≤ X &lt; 80.0%</td>
<td>B – Good</td>
</tr>
<tr>
<td>79.9% ≤ X &lt; 70.0%</td>
<td>C - Satisfactory</td>
</tr>
<tr>
<td>69.9% ≤ X &lt; 60.0%</td>
<td>D - Passing</td>
</tr>
<tr>
<td>X &lt; 60.0%</td>
<td>F - Failing</td>
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</table>
VII. COURSE POLICIES

Attendance: Students are required to attend all class meetings. Participation is essential to do well in the class. Discussions and student input are considered an important part of the class. Class exams cannot be retaken other than for an excused absence. Excused absences are limited to medical emergencies that can be certified in writing by a physician, participation in a TAMUCC sanctioned event or other similar circumstances justified in writing and specified in the TAMUCC graduate catalog for the ongoing academic year. Assignments are expected on time unless prior arrangements are made. Such prior arrangements will be granted only in exceptional circumstances as well. Submitting an assignment late without prior arrangement may lead to a grade of 0 and at least to a substantial penalty.

Academic honesty: Please review the University policies on academic integrity and honesty listed in the Graduate Catalog under the Academic Honesty section. This instructor will follow these guidelines if such infraction such as plagiarism or other dishonest conduct occurred as part of this class. These guidelines will be followed for both the evaluation of the gravity of the infraction and the determination of an appropriate penalty. Any student who has been penalized for academic dishonesty has the right to appeal the judgment or the penalty assessed. The Appeals Procedure will be the same as that specified for grade appeals. The grade appeals procedure may be found in the University Rules manual at http://www.tamucc.edu/provost/university_rules/.

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. April 1 is the last day to drop a class with an automatic grade of “W” this term.

Classroom, Professional Behavior: Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

VIII. DISABILITIES ACCOMMODATIONS

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. If you believe you have a disability requiring
an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

IX. ACADEMIC ADVISING

The College of Science & Engineering Academic Advisor will help set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. The College's Academic Advising Center is located in CI 350 and can be reached at (361) 825-3721.

X. GRADE APPEAL PROCESS

As stated in University Rule 13.02.99.C2, Student Grade Appeals, 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 upon 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, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site 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.

XI. TENTATIVE COURSE PROGRESSION

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>History of Oceanography &amp; the Water Planet</td>
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<td>2</td>
<td>Plate Tectonics</td>
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<td>3</td>
<td>Sea Floor and Sediments</td>
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<td>4</td>
<td>Physical Properties of Seawater &amp; Chemistry of Seawater</td>
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<td>5</td>
<td>Atmosphere</td>
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<td>6</td>
<td>Circulation</td>
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<td>7</td>
<td>Currents</td>
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<td>8</td>
<td>Waves &amp; Tides</td>
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<tr>
<td>9</td>
<td>Coasts, Beaches, Estuaries</td>
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<tr>
<td>10</td>
<td>Environmental Issues</td>
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<td>11</td>
<td>Living Ocean &amp; Production</td>
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<tr>
<td>12</td>
<td>Plankton</td>
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<td>13</td>
<td>Nekton</td>
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<td>14</td>
<td>Benthos</td>
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<tr>
<td>15</td>
<td>Human Dimensions</td>
</tr>
</tbody>
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XII. BIBLIOGRAPHY

Open Source

http://oceanworld.tamu.edu/resources/oceanography-book/contents.htm


Paola Rizzoli, 2008, MIT OpenCourseWare, Wave Motion in the Ocean and the Atmosphere

Alan Plumb, 2004, MIT OpenCourseWare, Atmospheric and Ocean Circulations


Books

Alongi, Daniel M., Coastal Ecosystem Processes

Bertness, Gaines & Hay, Marine Community Ecology

Gross, M. Grant, Oceanography, a View of the Earth.


