Oceans and Human Health, BIOL 4590.002
Department of Life Sciences
Spring 2020

A. COURSE INFORMATION

Course number/section: BIOL 4590.002  
Class meeting time: Tuesday & Thursday 2:00 – 3:15 PM  
Class location: Bay Hall 128  
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Michael G. Reuscher  
Office location: Tidal Hall 121  
Office hours: MTWR 11:30 – 1:00 PM  
e-mail: Michael.reuscher@tamucc.edu  
Appointments: please email

C. COURSE DESCRIPTION

Oceans are increasingly recognized for their role in the health of the human population. They modulate the global climate and are sources of waterborne disease as well as new bioactive (medicinal) agents. Indeed, healthy oceans are essential to the habitability of our planet – for humans and all other forms of life. Students will explore links between oceans, pollution, human well-being, ecosystem services, resource management, and the science and legislation governing the enforcement of water quality standards. This multidisciplinary subject will be administered using a combination of lecture and discussion of primary literature.

D. PREREQUISITES AND COREQUISITES

Prerequisites  
None. This course is intended for undergraduate students with a background in the marine biological sciences. It is ideally suited for undergraduate students in fulfillment of the Human Impacts requirement of the Marine Biology Program.

Corequisites  
None.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

No textbook is required. Lectures and primary literature will be made available on Blackboard https://bb9.tamucc.edu prior to class. For further reading, I recommend Oceans and Human Health: Implications for Society and Well-Being (2014) edited by RE Bowen, MH Depledge, CP Calalane and LE Fleming from WILEY Blackwell.
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

SLO 1: Identify links between the health of our oceans and the habitability of our planet.
SLO 2: Explore current themes central to oceans and human health (e.g. food provision, artisanal fishing, natural products, carbon storage, coastal protection, tourism & recreation, coastal livelihoods & economies, sense of place, clean waters, and biodiversity).
SLO 3: Understand the science and legislation governing water quality standards
SLO 4: Demonstrate ability to understand and think critically about peer-reviewed literature
SLO 5: Demonstrate ability to communicate scientific ideas in writing and discussions

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Each week, topics will be covered in lecture on Day 1 (Tuesday) followed by open discussion of primary literature on Day 2 (Thursday). All students will be required to co-lead one lecture and one discussion. Lecture leaders will be required to give a PowerPoint presentation that summarizes the week’s topic and highlights important concepts. Discussion leaders will be required to facilitate a discussion of the peer-reviewed literature that advances understanding of the week’s topic.

Lectures and primary literature will be posted to Blackboard https://bb9.tamucc.edu at least one week prior to class. A short (500-1,000 words) summary/response essay of each reading assignment will be due on Day 2. Participation in discussions will contribute significantly to your grade. Students are required to complete a minimum of two experiential learning activities that aim to improve ocean health. The first is https://missionaransas.org/nurdle-patrol. The second could be a beach cleanup or similar activity.
### H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Leading</td>
<td>20</td>
</tr>
<tr>
<td>Discussion Leading</td>
<td>20</td>
</tr>
<tr>
<td>Discussion Participation</td>
<td>15</td>
</tr>
<tr>
<td>Peer-Review Essays</td>
<td>30</td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>10</td>
</tr>
<tr>
<td>Attendance</td>
<td>5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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Grades will be based on the following:

A. 90.0% – 100.0% Excellent  
B. 80.0% – 89.9% Good  
C. 70.0% – 79.9% Satisfactory  
D. 60.0% – 69.9% Passing  
E. 0.0% – 59.9% Failing
I. **COURSE CONTENT/SCHEDULE**

General themes listed below are organized by week. Unless otherwise noted, topics will be covered in lecture on Day 1 followed by open discussion of primary literature on Day 2.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Course Introduction</td>
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<td>2.</td>
<td>Oil Spill/Pollution – Reuscher</td>
<td></td>
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<td>3.</td>
<td>Loss of Global Biodiversity and Potential Consequences – Reuscher</td>
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<tr>
<td>4.</td>
<td>The Global Thermostat and Climate Change Perceptions – Student</td>
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<td>5.</td>
<td>Shark Conservation – Student</td>
<td></td>
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<tr>
<td>6.</td>
<td>Marine Animals as Models for Biomedical Research – Student</td>
<td></td>
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<tr>
<td>7.</td>
<td>Plastic Pollution – Student</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Spring Break (no class)</td>
<td></td>
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<tr>
<td>9.</td>
<td>Geoengineering – Student</td>
<td></td>
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<tr>
<td>10.</td>
<td>Fisheries and Seafood Consumption – Student</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Infectious Microbes – Student</td>
<td></td>
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<tr>
<td>12.</td>
<td>Coral Loss and Conservation/Restoration – Student</td>
<td></td>
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<tr>
<td>13.</td>
<td>Natural Product Discovery – Student</td>
<td></td>
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<td>14.</td>
<td>Residual Pharmaceuticals – Student</td>
<td></td>
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<tr>
<td>15.</td>
<td>Oceans as Sinks for Waste Disposal – Student</td>
<td></td>
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<tr>
<td>16.</td>
<td>Freshwater Inflow and Water Quality – Reuscher or guest speaker</td>
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Note: This is a preliminary list, which may be adjusted according to students’ interests. Students may request other topics, which relate to the topic of Oceans and Human Health. Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.
J. COURSE POLICIES

Attendance/Tardiness
Attendance is mandatory. Exceptions will be granted in the event of illness, death in the family, university sponsored event and military deployment. Other conflicts such as attendance of professional symposia or the need to conduct field research will be considered on a case-by-case basis. In any case, documentation must be provided for absences to be considered excused. Students with a university approved scheduled absence (athletics, military duty, etc.) or other conflict must contact the instructor well in advance of the anticipated absence.

Late Work and Make-up Assignments
In the event of an absence, it is the student’s responsibility to find out what you missed, get notes, learn about changes in the syllabus, etc. An unexcused absence will result in a 0 for that assignment.

Cell Phone Use
Not allowed.

Laptop Use
Allowed for class-related purposes.

Participation
Participation is required for discussion of peer-reviewed literature. Therefore, unexcused absences may lower scores received for class discussion participation, as well as attendance.

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

• 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.

• **Statement of Civility**
Texas A&M University-Corpus Christi has a diverse student population that represents the
population of the state. Our goal is to provide you with a high quality educational
experience that is free from repression. You are responsible for following the rules of the
University, city, state and federal government. We expect that you will behave in a manner
that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial
origin, religious background, sexual orientation or disability. Behaviors that infringe on the
rights of another individual will not be tolerated.

• **Deadline for Dropping a Course with a Grade of W (University)**
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 your academic advisor, the Financial Aid Office, and me, before you decide to
drop this course.* 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. Please consult the Academic
Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a
course.

• **Grade Appeals (College of Science and Engineering)**
As stated in University Procedure 13.02.99.C2.01, 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 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 Procedure
13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible
through the University Rules website at
[http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science
and Engineering Grade Appeals webpage at
[http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the
grade appeal process, students may contact the chair or director of the appropriate
department or school, the Office of the College of Science and Engineering Dean, or the
Office of the Provost.

• **Disability Services**
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 (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

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.

http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

M. **GENERAL DISCLAIMER**

- I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.