Oceanography (ESCI 3351)  
Department of Physical and Environmental Sciences  
Fall 2017

A. COURSE INFORMATION

Course number/section:  ESCI 3351.002  
Class meeting time:  TTh 12:30-1:45 pm  
Class location:  OCNR-117  
Course Website:  https://bb9.tamucc.edu/ (Blackboard Sign In page)

B. INSTRUCTOR INFORMATION

Instructor:  Dr. Brandi Kiel Reese  
Office location:  105 Science Lab 1  
Office hours:  T, W, Th 8:30-10:30 AM and by appointment  
Telephone:  361-825-3022  
E-mail:  brandi.reese@tamucc.edu  
Appointments:  Made at least 24 hrs in advance by phone or e-mail

TA:  Rachel Woodworth  
Email:  rwoodworth@islander.tamucc.edu

C. COURSE DESCRIPTION

Catalog Course Description  
Methods and principles of oceanography. This is an upper-level science course designed for students in a variety of majors. Students are expected to be familiar with the scientific method, with earth science and biological science concepts, and to have an appreciation for the scientific approach to knowledge.

Extended Course Description  
Investigates the broad-scale features and dynamics of the Earth’s oceans. The course is roughly divided amongst the four main disciplines of oceanography: marine geology, marine chemistry, physical oceanography (i.e., circulation), and marine biology. Students will learn that there is much overlap and interdependence between these disciplines. Specific topics include seafloor spreading, marine sediments, salinity, biogeochemical cycles, ocean structure, currents, waves, tides, primary production, marine ecology, global warming, and much more.

D. PREREQUISITES AND COREQUISITES

Prerequisites  
CHEM 1312, or ESCI 1401 and 1402, or GEOL 1403, or permission of instructor.

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook
Trujillo and Thurman, Essentials of Oceanography 12th Edition. Earlier editions may be used but it is up to the student to keep track of differences. Professor is not responsible for variations between textbooks

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

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

1. Analyze and evaluate scientific data to create a conclusion about oceanographic processes
2. Predict distribution of organisms based on physical and chemical hydrographic data
3. Assess news with respect to ocean events or oceanography in general; read and interpret articles in the news
4. Explain interrelationships of oceans to other Earth Systems
5. Evaluate the interaction between humans and the ocean
6. Describe ocean chemistry and processes of nutrient cycling

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The course will be taught through traditional lectures with homework exercises that review and emphasize the lecture material. In addition, there will be a writing assignment that will be due on November 30th at 5:00 pm. No late assignments will be accepted.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Your final letter grade will be based on the percentage you earn out of a possible 100 points, which are distributed as follows. Participation will be assessed through class attendance and clicker questions.

Term Paper: A paper related and expanding a class topic is due on November 30 in word format using Blackboard. Paper should be between 1500 and 2000 words long, 1.5 lines spacing, 1 inch margins, 12 pt times new roman font, citing at least 5 peer reviewed papers, 1 figure, and 1 table.

Letter grades will be assigned as follows: A = 90-100%, B = 80-89.99%, C = 70-79.99%, D = 60-69.99%, F = 0-59.99%. Any student found cheating will result in an automatic zero for the assignment.
The learning outcomes stated earlier will be assessed through a variety of methods as noted in the following table.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams</td>
<td>30</td>
</tr>
<tr>
<td>Homework and Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Participation</td>
<td>10</td>
</tr>
<tr>
<td>Term Paper</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
</tr>
</tbody>
</table>

### I. COURSE CONTENT/SCHEDULE

**Geological Oceanography**

<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Lecture Topic</th>
<th>Learning Concepts</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28-Aug</td>
<td>World oceans, History of oceanography</td>
<td></td>
<td>Ch. 1</td>
</tr>
<tr>
<td>2</td>
<td>4-Sep</td>
<td>Plate tectonics and the Ocean Floor</td>
<td>seafloor spreading, convection, paleomagnetism, IODP</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>3</td>
<td>11-Sep</td>
<td>Marine Provinces</td>
<td>mid-ocean ridges, subduction zones, transforms</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>4</td>
<td>18-Sep</td>
<td>Marine Sediments</td>
<td>Size, stokes law, terrigenous, calcareous, siliceous</td>
<td>Ch. 4</td>
</tr>
</tbody>
</table>

**Chemical Oceanography**

<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>25-Sep</td>
<td>Water and Seawater</td>
<td>heat, temperature, density, light, sound</td>
</tr>
<tr>
<td>6</td>
<td>2-Oct</td>
<td>Biogeochemical Cycles</td>
<td>redox, photosynthesis, respiration, Redfield ratio</td>
</tr>
</tbody>
</table>

**Physical Oceanography**

<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>9-Oct</td>
<td>Air-Sea Interaction</td>
<td>solar radiation, atmospheric circulation, Coriolis force</td>
</tr>
</tbody>
</table>
### Oceanography Field Day

Meet at Dugan Wellness Center Pool - Oct 11, 2016 12:30 pm

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Activity</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>16-Oct</td>
<td>Midterm</td>
<td>Ocean Circulation</td>
<td>Ch. 1-6 &amp; supplement</td>
</tr>
<tr>
<td>9</td>
<td>23-Oct</td>
<td>Waves and Tides</td>
<td>upper ocean currents, deep ocean currents, upwelling</td>
<td>Ch. 7</td>
</tr>
<tr>
<td>10</td>
<td>30-Oct</td>
<td>Coastal Processes</td>
<td>beach processes, shoreline erosion, lagoons</td>
<td>Ch. 10</td>
</tr>
</tbody>
</table>

### Biological Oceanography

<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>6-Nov</td>
<td>Marine Life, Biological Productivity</td>
<td>classification, adaptation, ecosystems, primary production</td>
</tr>
<tr>
<td>12</td>
<td>13-Nov</td>
<td>Pelagic and Benthic Animals</td>
<td>coral reefs, rocky intertidal, deep sea, hydrothermal vents</td>
</tr>
<tr>
<td>13</td>
<td>20-Nov</td>
<td>Marine Pollution</td>
<td>point source vs non-point source pollution</td>
</tr>
<tr>
<td>14</td>
<td>27-Nov</td>
<td>Climate Change</td>
<td>climate vs. weather</td>
</tr>
<tr>
<td>15</td>
<td>5-Dec</td>
<td>Review for Final Exam</td>
<td>Reading Day Dec 7</td>
</tr>
<tr>
<td>16</td>
<td>12-Dec</td>
<td>Final Exam</td>
<td>Tues. Dec 12 @ 11:00-1:30 pm</td>
</tr>
</tbody>
</table>

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<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
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<tr>
<td>11</td>
<td>Marine Life, Biological Productivity</td>
<td>Ch. 12-13</td>
</tr>
<tr>
<td>12</td>
<td>Pelagic and Benthic Animals</td>
<td>Ch. 14-15</td>
</tr>
<tr>
<td>13</td>
<td>Marine Pollution</td>
<td>Ch. 11</td>
</tr>
<tr>
<td>14</td>
<td>Climate Change</td>
<td>Ch. 16</td>
</tr>
</tbody>
</table>

Note: 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**

Each student’s individual career experiences provide valuable perspective to their peers. Therefore, it is critical that you attend class regularly to be a partner in this enhanced learning environment. At each class meeting, attendance will be noted. It is each student’s responsibility to contact the instructor directly (phone or e-mail), in advance, if class will be missed. The instructor will not accept late work without valid reasons. Students with a university approved scheduled absence (athletics, military duty, etc.) must contact the instructor well in advance (>72 hrs) of a scheduled absence. Exams
may be taken early in those specific cases. Students who do not arrange to take exams ahead of time will not be eligible for this special consideration. A written excuse from the university department involved is required.

Students are encouraged to contact the instructor any time they are not achieving their intended level of success, prior to taking any other action. Students who need to withdraw must complete an official form and submit it consistent with college policy no later than the official published date. “Incomplete” grades are awarded only when an emergency prevents a student from completing a minor portion of the course assignments. Active participation is a part of your grade. It includes (1) asking questions; (2) answering questions with supportive evidence; (3) responding to other student’s comments, etc. Students are expected to be on time for class, to address others with respect, and to project an attentive and concerned demeanor.

**Late Work and Make-up Exams**

All exams count toward your class grade. No exam grade will be dropped. No make-up exams will be given. If an exam is missed with proper prior notification, the test may be taken as soon as possible after the exam date, but no later than the following class day. If the exam is not taken, a grade of zero (0) will be entered.

**Extra Credit**

No extra credit assignments will be given.

**Cell Phone Use**

The use of cell phones and other personal electronic devices (PEDs) are a distraction and prohibited during class. All cell phones must be turned off during the class period, unless an exception is warranted. Voice recording of lectures is allowed, but no video or photography is allowed during class.

**Laptop Use**

Laptop computers and tablets may be used in the classroom as long as they are not a nuisance or distracting to other students. Studies have shown that they are a nuisance to other students and are distracting to the user.

**Food in Class**

There is NO eating or drinking in the classroom.

**Missed Exam**

If an exam is missed with proper prior notification, the test may be taken as soon as possible after the exam date, but no later than the following class day. If the exam is not taken a grade of zero (0) will be entered.

**Participation**

Four or more absences, with the exception of death in the immediate family, sick child/spouse, military service, or personal sickness may result in a failing grade. Please
contact the instructor by phone message or e-mail before class to let the instructor know of your absence.

Others
Cheating is defined as:
• Copying to any extent the work of another student
• Intentionally assisting another student during an examination
• Having access to material related to an examination during an examination
• Possessing or having access to unauthorized copies of an examination
• Departing from any stated examination conditions
*Cheating or other academic dishonesty for exams and assignments will not be tolerated and will result in a Failing (F) grade for the class and suspension.

Plagiarism: The Merriam-Webster Dictionary defines plagiarism as "To pass off as one’s own words or ideas of another.”
Plagiarism involves:
• Submitting another person's work as one's own
• Submitting work from any source that is not properly acknowledged by footnote, bibliography, or reference within a paper
• Submitting work pieced together from phrases and/or sentences from various sources without acknowledgement
• Submitting work with another person's phrase(s) rearranged without acknowledgement
• Submitting work that uses any phrase, sentence, or stylistic mannerism without acknowledgement
• Omitting quotation marks from any directly quoted material
• Failure to use three dots (...) to indicate omission of one or more words
• Any other actions deemed to be plagiarism by the faculty

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/) 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, and the College of Science and Engineering Grade Appeals webpage at 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.

**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.