Coral Reef Conservation – BIOL 4590.004  
Department of Life Sciences  
Spring 2018

A. COURSE INFORMATION

Course number/section: BIOL 4590.004  
Class meeting time: Lecture 3:30-4:45 MW  
Class location: Lecture EN-108  
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr J. Derek Hogan  
Office location: HRI 102  
Office hours: MW 11am – 1:30pm  
Telephone: 825-5883  
e-mail: james.hogan@tamucc.edu  
Appointments: Upon request when available

C. COURSE DESCRIPTION

Catalog Course Description  
Coral reefs are on track to be one of the first ecosystem to be eliminated from the planet. Learn about the threats facing coral reef ecosystems in the 21st century and strategies for conserving these ecosystems for future generations; topics include biology and ecology of reef ecosystems, symbioses, climate change impacts, coral bleaching/disease, over-fishing and the effectiveness and design of marine protected areas. 3 semester hours. (3:0)

D. PREREQUISITES AND COREQUISITES

Prerequisites
None

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
None

Readings
Primary literature provided by the professor

Supplies
None
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:

1. Demonstrate a familiarity with coral reef ecosystems, their formation and how they function.
2. Demonstrate an understanding of the various threats facing coral reef ecosystems.
3. Demonstrate an ability to lead and participate in discussions of science
4. Demonstrate an ability to think critically about the scientific literature on the selected topics
5. Demonstrate an ability to communicate scientific ideas in writing

G. INSTRUCTIONAL METHODS AND ACTIVITIES

This course will be a combination of traditional lecture, discussion, paper reading and in class presentations. This is a group learning style of course. Attendance and participation in class discussions are essential for this type of class to work, the importance of attendance and participation are reflected in the grading scheme.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Attendance: Attendance in this class is mandatory. There are few formal lectures, and no tests, so attendance to the class is integral, furthermore, participation in class discussions will make up a large portion of your grade.

Participation: This is a discussion based course. Students will receive 40% of their grade from participation and sharing of ideas every week in lecture. Vigorous discussion and debate is welcome, but respect for your fellow colleagues is expected at all times. Discussions will be moderated by the professor.

Presentation/Discussion Lead: All undergraduate students are expected to co-lead one presentation and discussion of the focal paper in one lecture this semester. The presenters/discussion leaders are expected to give a summary of the topic of the day, highlighting or defining important concepts related to the topic, with emphasis on the focal paper. The use of brief powerpoint slide shows is encouraged for the summary portion. The presenters/discussion leaders are expected to also lead the
discussion of this topic by coming prepared with questions to pose to the group that will be answered by anyone in the class and to keep the flow of the conversation moving. All students are expected to come prepared to lecture each week by reading the focal assigned paper as well as finding their own paper to add to the discussion of the specific topic. In addition, the co-leading pair of students will create a summary of the discussion from that day’s lecture and will read back the summary to the class at the end of each class.

Term Paper:
Topic: “The World Bank (WB) and Global Environment Facility (GEF) are looking to fund global projects that are designed to protect and restore coral reefs in a “last ditch” effort to save these ailing ecosystems. You, being an expert in the field of coral reefs (as a result of this awesome class you have taken), have been asked by the WB and GEF to write a report to help them in directing their funding. Using your vast expertise in the understanding of coral reef issues, your report should contain three broad sections: 1. Introduce coral reef ecosystems and discuss the ecosystem services that we humans derive from coral reefs. What is at stake (i.e. what services are lost) if coral reef ecosystems are severely degraded or lost forever; 2. Identify and review the 5 biggest threats that are facing coral reefs today; 3. Propose what actions that must be taken to address each of the 5 problems you outline in order to promote persistence of coral reefs into the future. The GEF and WB will use your recommendations for proposed actions to fund projects that will achieve the goals you set out in your report so be specific about what needs to be done in order to stem the tide of coral reef declines globally. It is important to support your review of the problems and your proposals for actions using the latest scientific information by citing peer-reviewed scientific literature.”

Evaluation: Students will be evaluated on the quality of their term paper. Quality will be determined by assessing whether the student has written a paper that addresses the 3 goals outlined in the Topic statement above. To ensure the paper is progressing throughout the semester, students will hand in a paper outline no later than Wednesday March 7th. The outline is worth 10% of the students’ grade and should be in short form or bullet points, briefly outline the ecosystem services and the costs of what services could be lost if action is not taken, the 5 biggest threats that are facing coral reefs as well as the actions that can be taken to address the threats. Final versions of the complete term paper are due no later than Monday April 30th at 5:00pm CDT. The paper should be no longer than 10 double spaced pages (shorter is better; minimum font size is 12 pt), reference lists should be appended to the end of the paper, but do not count towards the 10 page limit.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Participation</td>
<td>40%</td>
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<tr>
<td>Student Presentation(s)</td>
<td>20%</td>
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I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>PRESENTER</th>
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<tbody>
<tr>
<td>17-Jan</td>
<td>Syllabus, What is a coral reef?</td>
<td>HOGAN</td>
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<tr>
<td>22-Jan</td>
<td>Reproduction in corals and fishes</td>
<td>HOGAN</td>
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<tr>
<td>24-Jan</td>
<td>Larval Dispersal &amp; Connectivity</td>
<td>HOGAN</td>
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<tr>
<td>29-Jan</td>
<td>Recruitment of corals and fishes</td>
<td>HOGAN</td>
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<tr>
<td>31-Jan</td>
<td>Coral-algal symbiosis</td>
<td>HOGAN</td>
</tr>
<tr>
<td>5-Feb</td>
<td>Coral-algal competition</td>
<td>HOGAN</td>
</tr>
<tr>
<td>7-Feb</td>
<td>Herbivory and bioerosion</td>
<td>HOGAN</td>
</tr>
<tr>
<td>12-Feb</td>
<td>Community structure, phase shifts</td>
<td>HOGAN</td>
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<tr>
<td>14-Feb</td>
<td>The Future of Coral Reefs</td>
<td>GRAD</td>
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<tr>
<td>19-Feb</td>
<td>Ecosystem services of coral reefs</td>
<td>GRAD</td>
</tr>
<tr>
<td>21-Feb</td>
<td>Coral Bleaching</td>
<td></td>
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<tr>
<td>26-Feb</td>
<td>Coral Diseases</td>
<td></td>
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<tr>
<td>28-Feb</td>
<td>Coastal Runoff/Pollution</td>
<td></td>
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<tr>
<td>5-Mar</td>
<td>Crown of Thorns Starfish</td>
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<td>7-Mar</td>
<td>Coral Reef Fisheries; TERM PAPER OUTLINE</td>
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<td>12-Mar</td>
<td>Spring Break</td>
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<tr>
<td>14-Mar</td>
<td>Spring Break</td>
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<tr>
<td>19-Mar</td>
<td>Live fish trade/Aquarium trade</td>
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<tr>
<td>21-Mar</td>
<td>Ocean Acidification/Climate Change: Corals</td>
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<tr>
<td>26-Mar</td>
<td>Climate Change: Fishes</td>
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<tr>
<td>28-Mar</td>
<td>Marine Protected Areas</td>
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<tr>
<td>2-Apr</td>
<td>MPA Design</td>
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<td>4-Apr</td>
<td>Coral Restoration</td>
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<td>9-Apr</td>
<td>Traditional Management</td>
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<td>11-Apr</td>
<td>Natural Resilience</td>
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<td>16-Apr</td>
<td>TERM PAPER WORK</td>
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<td>18-Apr</td>
<td>TERM PAPER WORK</td>
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<td>23-Apr</td>
<td>Management in the 21st century</td>
<td>GRAD</td>
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<td>25-Apr</td>
<td>Something more radical</td>
<td>HOGAN</td>
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<tr>
<td>30-Apr</td>
<td>Term Paper Due</td>
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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
Attendance is mandatory. Participation in class discussions is graded, therefore, both tardiness and lack of attendance will directly, negatively impact grades.

Late Work and Make-up Exams
A note is required to excuse students from all graded in class work such as attendance, discussion participation, student presentations. Students will be given a chance to make-up the work but it must be done in a timely manner.

Extra Credit
Extra credit will not be assigned for this class.

Cell Phone Use
Please refrain from using cell phones in class, this include texting, tweeting, posting or any other such shenanigans.

Laptop (Tablet) Use
Laptop use in class is permitted and encouraged as long as the student is using it to facilitate the learning process and discussions. Appropriate uses include; taking notes, looking up materials during discussion and looking at relevant papers. Inappropriate uses include; checking email, looking at Facebook and playing Candy Crush Saga. If a student continually abuses the privilege of using a laptop in class they will be asked not to use it any more.

Food in Class
Eating in class is not prohibited unless it proves disruptive.

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.