Global Change Ecology (BIOL 4323.001)
Department of Life Sciences
Spring 2017

A. COURSE INFORMATION

Course number/section: BIOL 4323.001
Class meeting time: MWF 0900-0950
Class location: CS-103
Course Website: Refer to Blackboard course website

B. INSTRUCTOR INFORMATION

Instructor: Dr. Michael Wetz
Office location: Science Lab 2, Room 102
Office hours: MWF 1000-1145; Please note that you are welcome to come by at any
time during normal business hours, but scheduling an appointment by calling or emailing
ahead of time will ensure that I will be available when you come by.
Telephone: 361-825-2132
e-mail: michael.wetz@tamucc.edu
Appointments: By email or personal communication

C. COURSE DESCRIPTION

Catalog Course Description
An introduction to the effects of climatic and anthropogenic change on terrestrial and aquatic
structure and function. Includes readings from the current literature and discussion of
controversial articles.

Extended Course Description
This course will introduce students to the effects of climatic and anthropogenic change on
terrestrial and aquatic ecosystem structure and function. Course goals are to produce
students capable of:
• recognizing and distinguishing ecological and biogeochemical patterns caused by natural
climate variability versus manmade environmental change (e.g., nutrient loading, land
use change and hydrologic modifications, climatic perturbations)
• confidently and effectively communicating with the general public on issues related to
global change.

D. PREREQUISITES AND COREQUISITES

Prerequisites
BIOL 3428 or permission of instructor.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)

*Climate Change Biology* by Lee Hannah. Lectures will cover material presented in the book and augmented by the instructor with material from the primary literature.

Secondary Sources

Instructor will post scientific papers to Blackboard at the beginning of the semester. Students are encouraged to supplement readings from primary textbook with relevant chapters from the following sources:


F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

- Students will be able to analyze principles of ecosystem structure and function and effects of global environmental changes through interpretation of graphs and datasets.
- Students will be able to synthesize current issues pertaining to global environmental change as they relate to ecological processes.
- Students will develop and refine critical thinking skills and gain experience defining and defending their ideas through class discussions and critiques of controversial articles.
- Students will be endowed with ability to effectively communicate knowledge of global change to the general public.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Proposed topics will be covered in instructor-led lectures and class discussions of the primary literature.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Grading will be based on 10-minute writing assignments, participation in case studies, completion of scientific paper assessments, and exams.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Overall Grade Percentage</th>
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<tbody>
<tr>
<td>10-minute writing assignments (x 16, 1 free; 1% each)</td>
<td>15%</td>
</tr>
<tr>
<td>Case studies (x 3; 5% each)</td>
<td>15%</td>
</tr>
<tr>
<td>Scientific paper assessments (x 8; 2.5% each)</td>
<td>20%</td>
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<tr>
<td>Exams (x 3; 10% each)</td>
<td>30%</td>
</tr>
<tr>
<td>Final exam</td>
<td>20%</td>
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<tr>
<td>Total:</td>
<td>100%</td>
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### Class Average (X) Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Class Average (X)</th>
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<tbody>
<tr>
<td>A – Excellent</td>
<td>X ≥ 90.0%</td>
</tr>
<tr>
<td>B – Good</td>
<td>89.9% ≥ X &gt; 80.0%</td>
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<tr>
<td>C – Satisfactory</td>
<td>79.9% ≥ X &gt; 70.0%</td>
</tr>
<tr>
<td>D – Passing</td>
<td>69.9% ≥ X &gt; 60.0%</td>
</tr>
<tr>
<td>F – Failing</td>
<td>X &lt; 60.0%</td>
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**10-minute writing assignments** – This in-class activity will help develop your ability to synthesize and integrate information and ideas. We will spend the first 10 minutes of class answering questions related to the previous day’s lecture topic.

**Case studies** – Throughout the semester, we will use different case studies to learn scientific concepts and content, while challenging your critical thinking skills. Many of these cases are based on contemporary, and often contentious, science problems from the news. Each case study is different, but will involve classroom discussions and teamwork outside of class. Case studies will be graded based on engagement in the discussion, critical thinking, and completeness of assigned activities.

**Scientific paper assessments** – This exercise will expose you to the primary mechanism by which scientists communicate their results, the peer reviewed manuscript, and will give you experience in synthesizing key findings from these manuscripts. At the beginning of the semester, you will be given access to peer-reviewed manuscripts on “hot topic” areas that we will cover in class. Prior to the day of class on which a paper assessment is scheduled, you should read (probably more than once…) the assigned paper. On the day of class, you will each be given a list of questions that must be answered pertaining to the paper. 20 minutes will be allotted to this part of the exercise. The remainder of class will be spent discussing the paper and its findings. **Please note that you are allowed to bring to class one printed copy of the manuscript along with any written notes that you took when you read it. You will not be allowed to use a computer/tablet for this exercise.**

## I. COURSE CONTENT/SCHEDULE

### Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction; ecology refresher</td>
</tr>
<tr>
<td>2,3</td>
<td>Marine science refresher</td>
</tr>
<tr>
<td>3-6</td>
<td>Earth’s climate system</td>
</tr>
<tr>
<td>7-10</td>
<td>Effects of climate change and climate variability</td>
</tr>
<tr>
<td>11-12</td>
<td>Eutrophication</td>
</tr>
<tr>
<td>13</td>
<td>Harmful algal blooms</td>
</tr>
<tr>
<td>14</td>
<td>Ocean deoxygenation/hypoxia</td>
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</table>
Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor.

J. COURSE POLICIES

Attendance/Tardiness
Attendance is mandatory. Students are expected to attend all classes. Should you miss a lecture, it is YOUR responsibility to find out what you missed, get notes, learn about changes in the syllabus, etc. A missed grade will result in a score of ‘0’ for that assignment, with exceptions granted only in exceptional circumstances including illness (with doctor’s note), death in the family (with verification), university-sponsored event (with verification) or military deployment (with verification). Students with a university approved scheduled absence (athletics, military duty, etc.) MUST contact the lecture instructor well in advance of a scheduled absence.

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)**
The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation **WILL NOT** automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. 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/](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.

**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.