Principles of Ecology BIOL 3428.001
Department of Life Sciences
Spring 2018

A. COURSE INFORMATION

Course number/section: BIOL 3428.001
Class meeting time: TR 9:30-10:45am
Class location: EN-107
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Dr. Benjamin Walther
Office location: SL1-102
Office hours: Wednesday: 9am-12pm
Tuesday & Thursday: 11am-12pm
Telephone: x4168 or 361-825-4168
E-mail: benjamin.walther@tamucc.edu

Appointments: You are welcome to make appointments with me to meet outside of office hours. Please email me to arrange an appointment at a mutually-agreeable time.

All communication with me via email must be through your school email address (yourname@islander.tamucc.edu). I will communicate with you through this email, so you must set up your account and check it regularly. It is your responsibility to check email frequently for important course announcements and updates. Confidential information will not be shared to any non-TAMU-CC email addresses.

C. COURSE DESCRIPTION

Catalog Course Description
Introduction to the interrelationships of organisms and their environment. Population structure, community classification and regulation, and energy flow in ecosystems will also be covered. Laboratory sections will focus on experimental design and field techniques in ecology.

D. PREREQUISITES AND COREQUISITES

Prerequisites
1. BIOL 1407 – Biology II
2. BIOL 2200-Professional Skills or BIMS 220-Professional Skills or UCCP 1101 & 1102-First Year Seminar I & II
3. Chemistry 1411-General Chemistry I
4. Math 2413-Calculus I (Math 2413 may be taken as co-requisite).

Corequisites
1. SMTE 0091-Biological Laboratory Safety Seminar
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook


Supplies

You will need a calculator for some exams. This calculator needs to be able to calculate standard mathematical operations, including exponents and logarithms (natural and base 10).

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. Describe how organism interactions with their environment give rise to patterns in their abundance and distribution
2. Explain how ecological principles operate at 4 different levels of organization from the individual to the ecosystem
3. Explain how ecological processes influence evolutionary processes and vice versa.
4. Formulate ecological research questions and use the scientific method to answer them including collection and analysis of data.
5. Prepare and deliver written and oral scientific presentations.
6. Demonstrate knowledge of data analysis and basic statistical tests common to ecology.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Information will be delivered using traditional lectures, interactive and written activities, assigned readings, online videos, and group projects.

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Proportion of FINAL GRADE (in points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (3 @ 150 pts each)</td>
<td>450</td>
</tr>
<tr>
<td>Final Exam (Comprehensive)</td>
<td>150</td>
</tr>
<tr>
<td>Lab (Reports, Quizzes, Presentations)</td>
<td>400</td>
</tr>
<tr>
<td>TOTAL POINTS</td>
<td>1000</td>
</tr>
</tbody>
</table>
GRADING SCALE:

- >900 pts = A
- 800-899 pts = B
- 700-799 pts = C
- 600-699 = D
- <600 = F

*Forgiveness final policy: I will replace your lowest exam score with your Final Exam grade if the Final Exam grade is higher.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>Thurs 1st February</td>
</tr>
<tr>
<td>Exam 2</td>
<td>Tues 27th February</td>
</tr>
<tr>
<td>Field Trip</td>
<td>Thurs 1st - Sun 4th March</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Thurs 5th April</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Thurs 10th May 8:00-10:30am</td>
</tr>
</tbody>
</table>

A lecture examination may contain questions in the following format: multiple choice, true/false, making drawings, labeling drawings, making lists, filling in charts, short answer questions, and essay questions.

Other important dates:
- 24 January – Last day to register or add a class
- 6 April – Last day to drop a class
- 30 April – Last day to withdraw from the University

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. All students are expected to attend all classes and labs. Should you miss a lecture or lab session, it is YOUR RESPONSIBILITY to find out what you missed, get notes, learn about changes in the syllabus, etc. There are no excused absences. Additionally, routinely being tardy to class is inconsiderate to me and to your classmates. Repeated lateness can result in dismissal from class. On time means being in your seat and being prepared to take notes, quizzes, or exams promptly at the starting time.

No student is admitted to an exam after the first exam-taker has left.
Late Work
A missed grade due to an unexcused absence or lateness will result in a score of ‘0’ for that assignment. Late work will not be accepted.

Extra Credit
The grading scale is NOT subject to discussion. In other words, begging for points or last minute extra credit will get you nowhere. THERE IS NO SUCH THING AS EXTRA CREDIT. There are ample opportunities for improving your grade throughout the course.

If you find yourself struggling with class, please come talk to me during office hours and we will review concepts that may be challenging. The sooner you see me, the better.

Cell Phone Use
Cell phones must be placed in silent mode during class. PHOTOS AND VIDEOS of lectures and PowerPoint slides may not be taken without prior permission of the Instructor.

Laptop Use
Laptops may be used in class as long as they are primarily used for note-taking and course-related work. Disruptive or disrespectful use of any technology (laptops, phones, tablets, etc.) may result in dismissal from class.

Missed Exams
Students with a university-approved scheduled absence (athletics, military duty, etc.) must contact the lecture and lab instructor well in advance of a scheduled absence. Exams may be taken at an alternate date in those specific cases. Students who do not arrange to take exams on alternate dates ahead of time will not be eligible for this special consideration. A written excuse from the university department involved is required.

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.

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.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue 16-Jan</td>
<td>Syllabus Review – Introduction</td>
<td>Chap 1 &amp; 2</td>
</tr>
<tr>
<td>Thr 18-Jan</td>
<td>Ecology &amp; Evolution/Distributions of Organisms</td>
<td>Chap 4-7</td>
</tr>
<tr>
<td>Tue 23-Jan</td>
<td>Population Growth Parameters</td>
<td>Chap 8</td>
</tr>
<tr>
<td>Thr 25-Jan</td>
<td>Life Tables</td>
<td></td>
</tr>
<tr>
<td>Tue 30-Jan</td>
<td>Limitations on Population Growth</td>
<td>Chap 9</td>
</tr>
<tr>
<td>Thr 1-Feb</td>
<td>Exam 1</td>
<td></td>
</tr>
<tr>
<td>Tue 6-Feb</td>
<td>Competition</td>
<td>Chap 10</td>
</tr>
<tr>
<td>Thr 8-Feb</td>
<td>Predator-Prey Interactions</td>
<td>Chap 11</td>
</tr>
<tr>
<td>Tue 13-Feb</td>
<td>Coevolution, Symbiosis</td>
<td>Chap 12</td>
</tr>
<tr>
<td>Thr 15-Feb</td>
<td>Harvesting Populations</td>
<td>Chap 15</td>
</tr>
<tr>
<td>Tue 20-Feb</td>
<td>Biological Control</td>
<td>Chap 16</td>
</tr>
<tr>
<td>Thr 22-Feb</td>
<td>Exam review</td>
<td></td>
</tr>
<tr>
<td>Tue 27-Feb</td>
<td>Exam 2</td>
<td></td>
</tr>
<tr>
<td>Thr 1-Mar</td>
<td>CAMPING TRIP – NO CLASS</td>
<td></td>
</tr>
<tr>
<td>Tue 6-Mar</td>
<td>Behavioral Ecology</td>
<td>Chap 3</td>
</tr>
<tr>
<td>Thr 8-Mar</td>
<td>Life History Strategies</td>
<td></td>
</tr>
<tr>
<td>Tue 13-Mar</td>
<td>SPRING BREAK – NO CLASS</td>
<td></td>
</tr>
<tr>
<td>Thr 15-Mar</td>
<td>SPRING BREAK – NO CLASS</td>
<td></td>
</tr>
<tr>
<td>Tue 20-Mar</td>
<td>Succession</td>
<td>Chap 18</td>
</tr>
<tr>
<td>Thr 22-Mar</td>
<td>Succession</td>
<td></td>
</tr>
<tr>
<td>Tue 27-Mar</td>
<td>Biodiversity</td>
<td>Chap 19</td>
</tr>
<tr>
<td>Thr 29-Mar</td>
<td>Food Webs</td>
<td>Chap 20</td>
</tr>
<tr>
<td>Tue 3-Apr</td>
<td>Exam review</td>
<td></td>
</tr>
<tr>
<td>Thr 5-Apr</td>
<td>Exam 3</td>
<td></td>
</tr>
<tr>
<td>Tue 10-Apr</td>
<td>Island Biogeography</td>
<td>Chap 21</td>
</tr>
<tr>
<td>Thr 12-Apr</td>
<td>Metapopulations</td>
<td></td>
</tr>
<tr>
<td>Tue 17-Apr</td>
<td>Primary Productivity</td>
<td>Chap 22</td>
</tr>
<tr>
<td>Thr 19-Apr</td>
<td>Secondary Productivity</td>
<td>Chap 23</td>
</tr>
<tr>
<td>Tue 24-Apr</td>
<td>Human Impacts</td>
<td>Chap 25-26</td>
</tr>
<tr>
<td>Thr 26-Apr</td>
<td>M&amp;M Predation Activity</td>
<td></td>
</tr>
<tr>
<td>Tues 1-May</td>
<td>Final Exam review</td>
<td></td>
</tr>
<tr>
<td><strong>THR 10-May</strong></td>
<td><strong>Final Exam – 8:00-10:30 PM</strong></td>
<td></td>
</tr>
</tbody>
</table>