

# Texas A&M University Central Texas

## BIOL 301 Ecology

### INSTRUCTOR AND CONTACT INFORMATION

**Instructor:** Dr. Weiser Erlandson

**Office:** 404 Warrior Hall

**Phone:** 254-519-5723

**Email:** [laura.erlandson@tamuct.edu](mailto:laura.erlandson@tamuct.edu)

**Online:** [Blackboard](#) enhanced

**Office Hours:** Tuesday: 9:00 – 10:00, Wednesday: 11:00 – 2:00, Thursday: 9:00 – 10:00

I am also available by appointment or you can just stop by my office; if I'm there, I'd be glad to chat. I encourage you to either call or e-mail me so we can find a time that is mutually convenient.

### Course Calendar

**Time/Day:** Lecture: TR 10:30 – 11:45; Laboratory: T 12:00 – 3:00

**Where:** Lecture: 316 Warrior Hall; Laboratory: 407 Warrior Hall

### UNILERT

Emergency Warning System for Texas A&M University – Central Texas

UNILERT is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in UNILERT through their myCT email account. Connect to [UNILERT](#) to change where you receive your alerts or to opt out. By staying enrolled in UNILERT, university officials can quickly pass on safety-related information, regardless of your location.

### COURSE INFORMATION

#### Course Overview and description:

Covers interactions at the organismal, population, and community level. Applications of ecological theory to current environmental problems are examined throughout the course. Emphasis in the laboratory and field exercises will be placed on ecological methodology and the application of these methods. Students will be required to use various statistical methods to analyze and interpret the data. Each exercise will require a report in the format of a scientific paper. Three hours of lecture each week. Prerequisite: BIOL 1407.

#### Course Objective:

#### *Student Learning Outcomes*

*Students will:*

- a. receive a sound basis of current scientific theories and knowledge
- b. be able to apply this knowledge and test theories experimentally

- c. be familiar with the interactions between living organisms and their environment
- d. learn techniques for gathering data in the field and laboratory
- e. understand the scope of the problems that we (humans) are facing such as unsustainable use of ecological resources, erosion, pollution, extinctions, etc...
- f. be able to critically analyze new findings in research areas and why results are often contradictory
- g. be informed of open areas of research where current knowledge is lacking

### Required Reading and Textbook(s):

- a. Molles, MC. 2015. Ecology: concepts & applications. McGraw Hill, New York, NY. ISBN:987-0-07-783728-0.
- b. Kingsolver, RW. 2006. Ecology on Campus. Benjamin Cummings, San Francisco, CA. ISBN: 978-0-80-538214-3.

*I expect you to read the corresponding chapters in your textbook before coming to class.*

*Other Readings: I feel that it is important for you to explore cutting edge research in Cell Biology; therefore, I may assign additional papers from primary literature from time to time.*

### WEEKLY COURSE OUTLINE AND CALENDAR (subject to change)

1. Week of August 22
  - a. Lecture Topic: Introduction and Life on land
    - i. Chapters 1 and 2 Molles
  - b. Laboratory: Laboratory Safety and check in
2. Week of August 29
  - a. Lecture Topic: Life on land
    - i. Chapter 2 Molles
  - b. Laboratory: Soils
    - i. Chapter 15 Kingsolver
3. Week of September 5
  - a. Lecture Topic: Life in water
    - i. Chapter 3 Molles
  - b. Laboratory: Describing a population
    - i. Chapter 1 Kingsolver
4. Week of September 12
  - a. Lecture Topic: Population genetics (Tuesday) and Exam I (Thursday)
    - i. Chapter 4 Molles
  - b. Laboratory: Aquatic environments
    - i. Chapter 16 Kingsolver
5. Week of September 19
  - a. Lecture Topic: Temperature Relations and Water Relations
    - i. Chapters 5 and 6 Molles

- b. Laboratory: Population Genetics
    - i. Chapter 6 Kingsolver
- 6. Week of September 26
  - a. Lecture Topic: Energy and Nutrient relations and Social relations
    - i. Chapters 7 and 8 Molles
  - b. Laboratory: Spatial Patterns
    - i. Chapter 7 Kingsolver
- 7. Week of October 3
  - a. Lecture Topic: Population distribution and Population dynamics
    - i. Chapters 9 and 10 Molles
  - b. Laboratory: The Niche
    - i. Chapter 8 Kingsolver
- 8. Week of October 10
  - a. Lecture Topic: Population Growth (Tuesday) and Exam II (Thursday)
    - i. Chapters 11 Molles
  - b. Laboratory: Demography
    - i. Chapter 5 Kingsolver
- 9. Week of October 17
  - a. Lecture Topic: Life Histories and Competition
    - i. Chapters 12 and 13 Molles
  - b. Laboratory: Population Growth
    - i. Chapter 4 Kingsolver
- 10. Week of October 24
  - a. Lecture Topic: Exploitative interactions and Mutualism
    - i. Chapters 14 and 15 Molles
  - b. Laboratory: Competition
    - i. Chapter 10 Kingsolver
- 11. Week of October 31
  - a. Lecture Topic: Species abundance and Species interactions
    - i. Chapters 16 and 17 Molles
  - b. Laboratory: Predator Prey and Mutualism
    - i. Chapters 11 and 12 Kingsolver
- 12. Week of November 7
  - a. Lecture Topic: Primary and Secondary Production (Tuesday) and Exam III (Thursday)
    - i. Chapter 18 Molles
  - b. Laboratory: Community Concept and Biodiversity
    - i. Chapters 9 and 13 Kingsolver
- 13. Week of November 14
  - a. Lecture Topic: Nutrient recycling and Succession
    - i. Chapters 19 and 20 Molles

- b. Laboratory: Energy Flow
    - i. Chapter 17 Kingsolver
14. Week of November 21
- a. Lecture Topic: Landscape and Geographic ecology
    - i. Chapters 21 and 22 Molles
  - b. Laboratory: Succession
    - i. Chapter 14 Kingsolver
15. Week of November 28
- a. Lecture Topic: Global Ecology and Review
    - i. Chapters 23 Molles
  - b. Laboratory: Island Biogeography
    - i. Chapter 18 Kingsolver
16. Week of December 5
- a. Comprehensive Final Exam (Tuesday)

## **COURSE REQUIREMENTS**

### **Course Assessments:**

- 35% Three lecture exams
- 25% Final Comprehensive Exam
- 10% Assignments (Current Events)
- 25% Laboratory reports (due weekly)
- 5% Participation

### **Current Event Summary Assignment**

*Introduction:* It is vital to understand the importance of what we learn in the classroom and how it affects us in the real world (to answer the question “why are we studying this?”). Cutting edge research is being conducted all over the world to help us to understand our world at large, live healthier lives, and have cooler technological gizmos, just to name a few. However, often we see that scientific news is not always reported correctly or that pseudoscience is reported. Many people are deceived and defrauded by pseudoscience. As future scientists, you need to be able to critically view a finding and determine its validity.

Your assignment is to critique current news items for their scientific merit. The article will be provided for you by your instructor. Be sure to research the science behind the article and compare the two sources.

You need to do the following:

1. Summarize, in your own words (not theirs), what the article is about
2. Is this scientifically correct, is it pseudoscience? Why or why not. Be specific.
3. Why is the subject of this article important (i.e. to you, your students, the public, etc.)?

## Criteria Rubric and Conversion

### Grading scheme

**A 4.00 (90 +)** Achievement that is outstanding relative to the level necessary to meet course requirements.

**B 3.00 (80-89%)** Achievement that is significantly above the level necessary to meet course requirements.

**C 2.00 (70-79%)** Achievement that meets the course requirements in every respect.

**D 1.00 (60-69%)** Achievement that is worthy of credit even though it fails to meet fully course requirements.

**F 0.00 (<60%)** Represents failure and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an "I" (incomplete).

**I (Incomplete)** The "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances, the student was prevented from completing the work of the course on time. The assignment of an "I" requires a written agreement between the instructor and student specifying the time and manner in which the student will complete the course requirements. In no event may any such written agreement allow a period of longer than one year to complete the course requirements. For graduate and professional students, an "I" is to remain on the transcript until changed by the instructor or department. For all other students, work to make up an I must be submitted within one year of the last day of final examinations of the term in which the "I" was given; if not submitted by that time, then the "I" will automatically change to an F. *To obtain an incomplete you must have been doing passing work in the course*

## COURSE AND UNIVERSITY PROCEDURES AND POLICIES

Read these carefully as I am strict with my policies.

**Grading Policy and Point Breakdown.** Grades in this course will be criteria-based on a number of activities including exams, discussion, and projects. This means that grades will not be curved and anyone achieving a 90% or above will receive an A in this course.

**Grade Dispute Policy.** Grading disputes must be put in writing (with justification such as supporting statements from the text or another credible source) and given to me no earlier than 24 hours after the assignment has been returned. I will consider your request carefully, but reserve the right to adjust your grade up or down.

**Assignments.** These will be varied in nature, but will consist of activities that cause the students to reflect upon the state of knowledge of the topic of the week, how that topic is perceived in the media, and/or analysis of specific research projects relevant to the subject. All assignments are to be turned in, on time (i.e. at class time on due date), to the Blackboard website. I will distribute instructions on how to do this. I will not accept e-mailed assignments of any kind.

**Late Assignments.** I expect all assignments to be turned in on time. Late assignments interfere with my ability to provide timely, detailed feedback, as well as with your ability to learn and process new material. Accordingly, any unauthorized late assignment will receive a 5% reduction in grade for each day it is late. No assignments will be accepted after it has been graded and returned.

**Exams.** The exams will be a mixture of matching, multiple choice and short answer, designed to provoke reflection, critical thought, and application of knowledge. You will receive a list of several sample or real exam questions ahead of time. You are encouraged to prepare for the exam by reviewing reading materials, outlining a draft of a response, and discussing these thoughts with your peers. You will then demonstrate your individual, integrated thoughts on the topic in a closed-book exam during the class period.

**Missed exams.** If you know you will miss an exam, please contact me BEFORE the exam. I will gladly give make-up exams if the student has an unavoidable reason for missing the exam (i.e. death in the family, severe illness). Keep in mind that I will expect documentation of your reason for missing the exam (e.g. doctor's note, obituary notice). Exams must be made up within a week of the original scheduled date, no exceptions regardless of excuse.

**What I expect of you.** To get the most out of this class, you are expected to conduct yourself in a professional manner, which includes contributing to class discussions, being punctual, and notifying me of absences in advance.

**Class Attendance.** I expect that you attend each class session and arrive on time. If an unavoidable situation arises that prevents you from attending class, I expect that you also promptly contact me to discuss the missed material and get the notes from a classmate. I will not distribute my notes to students as they are often abbreviated and do not contain the detail needed to sufficiently understand the material.

**What you can expect of me.** You can expect me to start and end class on time, be available through office hours, e-mail, and by appointment, be responsive to student suggestions for course improvement, answer questions to the fullest extent possible and/or direct you to appropriate resources, return graded assignments and exams within a reasonable time frame, and treat you with respect as future colleagues.

**Discussion.** The topics in this class encompass a diversity of issues that merit in-depth thought and discussion. Since individuals will be expressing their opinions, I expect that you will respect others' contributions, as you would want them to do for you.

**Credits and Workload expectations.** For undergraduate courses, one credit is defined as equivalent to an average of two hours of learning effort per week (over a full semester) necessary for an average student to receive an average grade for the course. A student taking a four-credit class that meets for four hours a week should expect to spend an additional eight hours a week outside the classroom in order to earn an average grade.

**Class Structure.** Classes will involve a balance of active lecture and engaging learning activities. I believe that students learn the theories and concepts much better when they have an active role. I know that this may be new to some of you, but please keep an open mind and I know that you will get more out of this class because of it.

**Drop Policy.** If you discover that you need to drop this class, you must go to the Records Office and ask for the necessary paperwork. Professors cannot drop students; this is always the responsibility of the student. The record's office will provide a deadline for which the form must be returned, completed and signed. Once you return the signed form to the records office and wait 24 hours, you must go into Warrior Web and confirm that you are no longer enrolled. Should you still be enrolled, FOLLOW-UP with the records office immediately? You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the deadline or fail to follow the procedure, you will receive an F in the course.

**Academic Integrity.** Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

**Disability Support and Access Services.** At Texas A&M University – Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to an education that is barrier-free. The Office of Disability Support and Access is responsible for ensuring that students with a disability enjoy equal access to the University's programs, services and activities. Some aspects of this course or the way the course is taught may present barriers to learning due to a disability. If you feel this is the case, please contact Disability Support and Access at (254) 501-5831 in Warrior Hall, Ste. 212. Please visit their website <http://www.tamuct.edu/departments/disabilitysupport/index.php> for more information. Any information you provide is private and confidential and will be treated as such.

**Tutoring.** Tutoring is available to all TAMUCT students, both on-campus and online. Subjects tutored include Accounting, Finance, Statistics, Mathematics, and Writing, and APA formatting. Tutors are available at the Tutoring Center in Warrior Hall, Room 111. For tutor schedules and contact information, please visit the [Office of Academic Support](#). If you have questions, need to schedule a

tutoring session, or if you are interested in becoming a tutor, contact Academic Support Programs at 254-501-5833.

Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables TAMUCT students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in Mathematics, Writing, Career Writing, Chemistry, Physics, Biology, Spanish, Calculus, and Statistics. To access Tutor.com, log into your Blackboard account and click "Online Tutoring."

**University Library.** The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 72,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at TAMUCT are available through our website to help students navigate these resources. On-campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available twenty-four hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the TAMUCT main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our homepage: <http://www.tamuct.edu/departments/library/index.php>

## **TECHNOLOGY REQUIREMENTS AND SUPPORT**

**Technology Requirements:** This course will use the TAMUCT Blackboard Learn learning management system.

- Logon to [Blackboard](#) to access the course.
- Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)
- Initial password: Your MyCT password
- Check browser and computer compatibility by using the "Test Your Browser" button, found in the "Check Your Browser" module on your Blackboard dashboard, once you have logged in.

**Technology Support.** For technology issues, students should contact Help Desk Central. 24 hours a day, 7 days a week:



- **Email:** helpdesk@tam.u.edu
- **Phone:** (254) 519-5466
- **Web Chat:** <http://hdc.tamu.edu>
- When calling for support please let your support technician know you are a TAMUCT student.
- For issues related to course content and requirements, contact your instructor.
- Technology issues are not an excuse for missing a course requirement – make sure your computer is configured correctly and address issues well in advance of deadlines.

## BIO 301 - Ecology

### Syllabus Contract

#### Directions:

- First, read the syllabus.
- Second, read the statement below to confirm your personal reading and understanding of the contents of the syllabus.
- Third, provide confirmation by printing the document and providing your signature and date of completion in the space provided below.
- Last, submit this contract to me. Note that your grade for the first assignment will not be calculated until this contract is received.

I have received a copy of the syllabus. I have read and understand the policies of this course as stated in the syllabus.

**Print Name** \_\_\_\_\_

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_