**Biology 2227 – Principles of Ecology**
**Spring 2017**

*Instructors:* Dr. Amy Freestone will instruct August 28 – October 16
Dr. Matthew Helmus will instruct October 18 – December 11

**Class Meetings:** Monday, Wednesday, Friday 12:00 - 12:50 pm; Beury 164

**Course Prerequisites:** Biology 1111 or 1911 with a grade of C or better.

**Teaching Assistant:** TBD; Office Hours: TBD

**Instructor Scheduled Office Hours and by Appointment:**
Dr. Freestone – Bio-Life 205; Mondays, Wednesday, Friday 1-2pm from Aug 28 – Oct 16
Dr. Helmus – SERC 538; Mondays, Wednesday, Friday 1-2pm from Oct 18 – Dec 11

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TA: TBD

**Course Description:**
The purpose of this course is to provide an overview of ecology from the level of individual organisms to populations, communities, ecosystems and the biosphere. It examines the physical, chemical, and biological components of ecological interactions, and includes terrestrial and aquatic ecosystems.

**Learning Objectives:** The primary goals of this class are to have students gain:
1. An understanding of the sub-disciplines in ecology, hierarchical processes, and emergent ecological patterns.
2. An understanding of basic ecological questions and methodology.
3. An ability to interpret and evaluate ecological data.
4. An ability to understand and evaluate advancements made through past and current ecological research.
5. An ability to synthesize course material and apply this knowledge to novel situations.
6. Knowledge of the relevance of ecological research to global change and social issues.

**Course Approach:** The course will be lecture-based, with short interactive activities, videos, and discussions to highlight central themes of the material. Lectures are presented as PowerPoint presentations based on material from the textbook and other relevant sources. Reading the textbook is required and an integral part of course grading assessment.

**Digital Text:** Connect Access of Molles, M.C. Jr. 2015. Ecology, Concepts and Applications, 7th Ed. WCB/McGraw-Hill. Only the digital text is required, the hardcopy is not. A photocopied version of the text may be purchased if desired.

**Grades:** Attendance to class is expected. Grades will be calculated based on four lecture tests (80%), online quizzes (10%), and E-Text reading assignments (10%).

**Tests:** (20% each; 80% total)**:** There will be four written lecture tests to assess achievement of the Learning Objectives. Tests will be multiple choice including questions on data interpretation. Tests will focus on material covered during class.

**Quizzes:** (10% total)**:** Regular quizzes will be given online. Approximate quiz dates are noted in the syllabus. Students will generally be given several days to complete the quiz, but quizzes must be completed independently by each student. Quizzes will focus on material covered during class and from the textbook readings.

**Online Reading Assignments:** (10% total): Reading the text is required. As you read through the E-Text, questions are asked periodically to assess your comprehension. The questions asked are adaptive—the more you miss, the longer it takes to complete the reading. You will gain partial credit for reading assignments if you only complete some of the reading by the assigned due date. Missed readings completed after the assigned due date will help with test review, but they will not be graded. *It is best to start your readings early.*

**No Final Exam:** There will not be a final exam.

**No Extra Credit:** No extra credit will be given.

**Missed Quizzes and Tests:** There will be no make-up quizzes or tests. Missed quizzes will receive a zero. Students can avoid being penalized for missed tests only if absences were excused in advance. Day-of absences will require a doctor's note, or other verifiable information, for approval communicated as soon as possible to the instructor.

Approved absences will only be granted in advance for activities that are university sanctioned or that would provide you with a significant opportunity for learning or professional development. Questions about quiz or test grading should be directed to the Teaching Assistant and will not be accepted more than 1 week after answers are made available to students.

**Certificate in Sustainability:** This course counts toward Temple's Certificate of Sustainability.

**Civility & Temple's Code of Conduct (COC):** Violations of the COC include, but are not limited to: academic dishonesty, impropriety, plagiarism, cheating, and interfering with or disrupting the conduct of classes or any other normal activities of the University. Please avoid entering lectures late or leaving early. Enter and exit as unobtrusively as possible.

**Using Technology in Class**: Usage of phones is prohibited in class. You may take notes in class with laptops or other personal devices. While in class, you may not use these devices for personal activities. The Teaching Assistant sits in the back of class and if you are found violating these rules you will receive a warning. If you violate these rules a second time, you will be asked to leave the classroom for the remainder of that lecture.

**Disability Disclosure:** We are happy to make accommodations for any student with a disability and we strive for an instructional design that is universal to all learning styles. Temple University is committed to the inclusion of students with disabilities and provides accessible instruction, including accessible technology and instructional materials. The process for requesting access and accommodations for this course is: (1) Advice the current instructor of the need for access or accommodations; (2) Contact Disability Resources and Services to request accommodations; (3) DRS will consult with instructors as needed about essential components of the program; (4) Present instructors with a DRS accommodation letter.

**Preliminary Schedule:** Presence at class meetings is expected. Lecture topics will vary from this schedule. Updates will be posted on Canvas. Please check Canvas and your TU e-mail account regularly for messages & schedule changes.

*Dr. Freestone will instruct August 28 – October 16*

| Week | Date | Available Online | Lecture Topic | Reading Assignment |
|---|---|---|---|---|
| 1 | 28-Aug | | Introduction to Ecology | Chap. 1 |
| 1 | 30-Aug | | Life on Land | Chap. 2 |
| 1 | 1-Sep | | Life in Water | Chap. 3 |
| 2 | 6-Sep | Quiz 1 | Population Genetics, Natural Selection | Chap. 4 |
| 2 | 8-Sep | | Population Genetics, Natural Selection | Chap. 5 |
| 3 | 11-Sep | | Temperature Relations<br>**Last day to add or drop** | Chap. 6 |
| 3 | 13-Sep | Quiz 2 | Water Relations | |
| 3 | 15-Sep | | Water Relations | Chap. 7 |
| 4 | 18-Sep | | Energy and Nutrient Relations | |
| 4 | 20-Sep | | Energy and Nutrient Relations | |
| 4 | 22-Sep | | **EXAM # 1** | Chap. 8 |
| 5 | 25-Sep | | Social Relations | |
| 5 | 27-Sep | | Social Relations | Chap. 9 |
| 5 | 29-Sep | | Population Distribution, Abundance | |
| 6 | 2-Oct | Quiz 3 | Population Distribution, Abundance | Chap. 10 |
| 6 | 4-Oct | | Population Dynamics | |
| 6 | 6-Oct | | Population Dynamics | Chap. 11 |
| 7 | 9-Oct | Quiz 4 | Population Growth | |
| 7 | 11-Oct | | Population Growth | Chap. 12 |
| 7 | 13-Oct | | Life Histories | |
| 8 | 16-Oct | | **EXAM # 2** | Chap. 13 |

*Dr. Helmus will instruct October 18 – December 11*

| Week | Date | Available Online | Lecture Topic | Reading Assignment |
|---|---|---|---|---|
| 8 | 18-Oct | | Intro to Species Interactions | Chap. 13 |
| 8 | 20-Oct | | Competition | |
| 9 | 23-Oct | Quiz 5 | Parasitism, Herbivory | Chap. 14 |
| 9 | 25-Oct | | Predation | |
| 9 | 27-Oct | | Mutualism | Chap. 15 |
| 10 | 30-Oct | Quiz 6 | Abundance, Diversity | Chap. 16 |
| 10 | 1-Nov | | Abundance, Diversity | |
| 10 | 3-Nov | | Food Webs, Community Structure | Chap. 17 |
| 11 | 6-Nov | | Food Webs, Community Structure | |
| 11 | 8-Nov | | **EXAM # 3** | |
| 11 | 10-Nov | | Primary Production, Energy Flow | Chap. 18 |
| 12 | 13-Nov | | Nutrient Cycling, Retention | Chap. 19 |
| 12 | 15-Nov | Quiz 7 | Succession, Stability | Chap. 20 |
| 12 | 17-Nov | | Succession, Stability | |
| 13 | 20-Nov | | **FALL BREAK** | |
| 13 | 22-Nov | | **FALL BREAK** | |
| 13 | 24-Nov | | **FALL BREAK** | |
| 14 | 27-Nov | | Landscape Ecology | Chap. 21 |
| 14 | 29-Nov | Quiz 8 | Landscape Ecology | |
| 14 | 1-Dec | | Geographic Ecology | Chap. 22 |
| 15 | 4-Dec | | Geographic Ecology | |
| 15 | 6-Dec | | Global Ecology | Chap. 23 |
| 15 | 8-Dec | | Global Ecology | |
| 16 | 11-Dec | | **EXAM # 4** | |
| Finals Week | | | **NO FINAL EXAM** | |