

**BIOLOGY 463: GENERAL ECOLOGY**—Fall 2019 (3 credits)

**Instructor:** Dr. Matthew Ferrari                      **Office:** W243 MSC

**Email:** mferrari@psu.edu or through the course Canvas site

**Lectures:** MWF 3:35-4:25 PM in 106 Forest Resources

**Lecture Materials:** <http://prezi.com/gmsiehm3-d/biol-463/>  
<http://prezi.com/gmsiehm3-d/biol-463-part-2/>  
<http://prezi.com/gmsiehm3-d/biol-463-part-3/>

**Office Hours:** Monday 2-3 PM W243 MSC or by appointment in W243 MSC  
-- subject to change during semester --

**Course Website:** <https://sites.psu.edu/ecology463>

**Text and Reading**

Readings from the primary literature will be assigned to complement and supplement the lectures.

There is no required textbook. However, the course closely follows the structure in Townsend, Begon & Harper 2008 Essentials of Ecology (3rd Ed) Blackwell. This textbook provides conceptual detail and empirical examples that can be only summarized in lecture. For your reference, the course schedule indicates chapters in this text that follow the lectures.

**Grading**

- Your grade will be based on 500 points: three 100-point exams and four 50-point homework assignments.
- Exams will involve a combination of multiple choice, short answer and essay questions.
- ***Tentative*** due dates for homework assignments are below (***subject to change***):

<u>Assignment</u>	<u>Date Assigned</u>	<u>Date Due</u>
Homework 1	Sept 9	Sept 16
Homework 2	Oct 9	Oct 16
Homework 3	Oct 23	Oct 30
Homework 4	Nov 15	Nov 22

**Attendance**

Lecture material will cover topics beyond those covered in the text and students are responsible for any changes to the assignments or schedule that are presented in class. Thus, classroom attendance is strongly recommended. Excessive absence (>3 unexcused absences) will be grounds for loss of points.

**Academic Integrity**

Unless specifically directed otherwise, all assignments must be completed without assistance from others, except for guidance from Dr. Ferrari and/or guest instructors, and must represent your own work.

**PSU's Academic Integrity Policy** is posted at  
<http://www.science.psu.edu/academic/Integrity/Policy.htm>

Our College has also adopted a “**Code of Mutual Respect and Cooperation**” It is available at

<http://www.science.psu.edu/climate/code-of-mutual-respect-and-cooperation-1/code-of-mutual-respect-and-cooperation/?searchterm=code%20of%20Mutual%20respect>

**Course Goals and Objectives:**

The science of ecology is fundamentally concerned with the scaling up of processes to explain patterns observed at the scale of populations, communities, and ecosystems. The goals of this course are to introduce the general concepts and vocabulary to allow discussion of biological systems at these various scales and to learn to use those concepts to understand the emergent properties of complex biological systems.

The objectives of this course are to:

1. understand the basic principles and limitations of observational study design in ecology
2. quantify how the demographic processes of birth, death, emigration and immigration combine to generate population growth and decline
3. quantify how competitive interactions limit population growth
4. evaluate the relative impact of top-down and bottom-up regulation
5. evaluate the relative impact of intrinsic and extrinsic controls on community structure and stability