

# BIO 4130: General Ecology (WI)

## Winter Semester 2019

Instructor: Megan Wallen, Ph.D.  
3112 Biological Sciences Building  
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### LECTURE MEETING LOCATION/TIME

0027 State Hall

Tuesday & Thursday 10:00 – 11:15am

Instructor office hours: Tuesday 11:30am – 12:30pm or by appointment

### LAB MEETING LOCATION/TIME

2028 Science Hall

Thursday 11:30am – 3:20pm (Ali Shakoor)

Friday 9:30am – 1:20pm (Mike Sergeant)

### TEACHING ASSISTANTS

**Mike Sergeant** (gl1336@wayne.edu)

Office Hours: by appointment

**Ali Shakoor** (ali.shakoor@wayne.edu)

3177 Biological Sciences Building

Office Hours: Tuesday 12:00pm – 1:00pm or by appointment

### COURSE DESCRIPTION

Ecology is a broad, integrative scientific discipline that examines how organisms interact with each other and with their environment. The course will utilize both theoretical and empirical studies of ecological phenomena to build your understanding of the fundamental processes that control the abundance, distribution, and diversity of organisms in both terrestrial and aquatic ecosystems. In both lectures and lab activities you will also be exposed to the basic process of scientific inference (hypothesis formation, hypothesis testing, and data interpretation).

This course also meets the writing intensive requirement for biology and environmental science majors. The writing component is a critical and required portion of the course for all students, regardless of whether or not you are a biology or environmental science major, already have a degree, or have already completed a writing intensive course. This course (lecture plus lab) is 4 credits.

### COURSE GOALS

- To acquire an ecological literacy about how the natural world works
- To develop an understanding of how scientific methods are used to construct ecological knowledge
- To gain a greater appreciation of why it is important to study the interaction of living organisms on Earth
- To become familiar with some of the major ecological challenges facing the Earth today, and the important research which needs to be done to address these concerns

- Improve analytical and writing skills through analysis and interpretation of ecological data

## LEARNING OBJECTIVES

By the end of this course, you should be able to:

- understand and describe the major ideas of natural selection, population, community and ecosystem ecology, and biodiversity.
- address issues of ecological concern using qualitative and quantitative arguments.
- describe how species interactions are mediated by organisms' morphological, physiological and behavioral traits
- understand how energy and matter are transformed (e.g., trophic dynamics, nutrient recycling and how these things are mediated by both abiotic and biotic processes).
- understand how species interactions and abiotic factors influence population structure and dynamics; how biotic interactions and abiotic factors influence community composition/diversity and community dynamics; how ecosystem processes are influenced by community composition/diversity)
- apply working knowledge of the scientific method and be able to use hypothetico-deductive reasoning to formulate predictions and tests of those predictions
- comprehend, interpret and evaluate conclusions drawn from experimental studies.
- exhibit critical thinking by integrating and synthesizing outside sources with your own observations, data and/or interpretation; produce a conclusion that effectively interprets previously presented evidence and key points, adds new insights, and results in an integrated whole; produce focused writing that exhibits consistency, flow, correct style formatting, and mechanical/grammatical correctness.

## COURSE PREREQUISITES

BIO 3070 and BIO 3500 with grades of C-minus or above, or consent of instructor; consent of departmental adviser for Environmental Sciences majors.

## TEXTBOOK

*Ecology Global Insights & Investigations*, 2015 (2<sup>nd</sup> Edition) by Peter Stiling. This book is required and essential for reference and reading prior to lectures. Most of the material covered in lecture will be covered to some extent in the text.

## ADD/DROP POLICY

Add forms will not be signed after the second week of class.

- Friday, Jan. 18, 2019 is the last day to drop the class with a tuition refund.
- Sunday, Mar. 24, 2019 is the last day to withdraw.

Students who withdraw from the course before Mar. 24 will be assigned one of the following three marks: WP (withdrew but was passing at the time), WF (withdrew but was failing at the time), or WN (withdrew and never attended class or no graded work). Withdrawals after Mar. 24 will not be approved, and a grade will be assigned. (<https://bulletins.wayne.edu/graduate/general-information/records-and-registration/>)

## EXAM DATES

**Two midterm examinations (February 12<sup>th</sup> and March 21<sup>st</sup>) will be given during the lecture period, and a two-hour final will be given during the regularly scheduled final exam period. The final examination is scheduled for Tuesday April 30<sup>th</sup> from 8:00am-10:00am. The final exam will be cumulative. All students are expected to take the exams at these times.** Reasonable

exceptions will be granted in cases of illness which will require notification prior to the exam (via email or phone) and must be followed up with an original signed note from a physician on official letterhead. Exams will be closed book and held in class. No electronic devices of any kind will be allowed unless indicated otherwise in advance, and cell phones must be turned off. Anyone who leaves the exam room will not be allowed back in. Late-arriving students should know that admittance into the exam room will not be allowed after the first student has left the room.

**GRADING BREAKDOWN**

Exam 1	225	Plagiarism Essay	10
Exam 2	225	Literature Review	5
<u>Final exam</u>	<u>275</u>	Lab Reports (x 8)	80 (10 each)
<i>Exam Component</i>	<i>725 points</i>	Article Summaries (x 3)	45 (15 each)
		Peer Reviews	10
		Primary Paper Summary	10
		First Draft Term Paper	10
		Second Draft Term Paper	10
		<u>Final Draft Term Paper</u>	<u>70</u>
		<i>Writing Component</i>	<i>250 points</i>

Note: Because this is a writing intensive course, *you cannot pass this class without earning at least 60% (150) of the 250 possible points for the writing component*, even if you earn all possible points from the exam component! In other words, you must be able to prove your writing skills upon leaving this course in order to successfully complete it.

Assuming you have passed the writing component of this course, you will be graded based on a soft-bottom scale. That is, you will receive at minimum (though potentially higher) the following grades:

A-	>89.9%
B-	80-89.9%
C-	70-79.9%
D-	60-69.9%
F	<60%

Students given an "I" will automatically receive an F if the work is not completed within 1 calendar year. The failure notation at Wayne State has been changed from an E to an F. There can be no exceptions to this grading policy. Further information on the grading policy can be found at: <https://wayne.edu/registrar/records/grades/course-policy/>.

**LATE ASSIGNMENT POLICY**

Any papers, lab reports, or other assignments turned in after the due date will be deducted 10% of the final grade per day late. The final draft of the term paper will not be accepted more than 3 days past the due date.

**POSTING OF GRADES**

All grades will be posted on Canvas as soon as possible after the exam/assignment has been administered.

**GRADE DISPUTES / CHALLENGE OPTION**

Students will have 2 weeks after the return of an exam or a written assignment to challenge a grade for any question. Failure to challenge the grade within this period indicates a willingness to accept the assigned grade. The challenge should consist of a written description of why the answer is correct and a complete copy of the exam or written assignment. All questions on exams and full written assignments are subject to review when a grade is challenged, and thus, it is possible to receive a lower grade if the instructor discovers any previous grading errors.

### **CHEATING**

A strict zero-tolerance policy for cheating will be enforced. Anyone caught cheating on an exam will receive a score of zero for that portion of the grade with no opportunity to drop or replace that score. A second episode of cheating will result in a grade of "F" for the course and may also result in initiation of university disciplinary action. Be aware that I take cheating very personally as disrespectful and an insult to myself, your TA, and your classmates, and will not be lenient in how I handle it.

### **RELIGIOUS HOLIDAY CONFLICTS**

If you have a conflict with any of the scheduled exam times due to religious reasons, you must notify me (Dr. Wallen) in writing by class time on Tuesday, January 22, 2019. No make-up exams will be given unless I am notified in writing by this date.

### **WHAT I EXPECT FROM STUDENTS**

Ecology is an integrative science that draws on principles of biology and evolution as well as physical sciences such as climatology, geology, chemistry, and physics. Most importantly, ecology cannot be studied or understood in modular form – that is, ecological principles build upon each other, and principles taught early in the course must therefore be mastered because they are a foundation for further learning later in the course. The course is designed to provide you with every opportunity to succeed, but I also expect you to participate in your own potential for success. Here is a general (not exhaustive) list of what I expect from you:

- 1) Except for extenuating circumstances, attend all scheduled course meetings (both lecture and labs). Because of the integrative nature of the science, getting behind in the course is a sure path to failure.
- 2) Be actively engaged in all parts of this course, including both lecture and lab. You should be at ease to ask questions or lend comments at any time over the course of the semester. Active learning in the course requires that you attend lectures and lab, interact with your classmates and instructors, and think critically about the material being presented. Think, and take notes!
- 3) Work to complete assignments on time and with your best effort. As in most places in your academic life, the instructors in this course will return hard work and perseverance by any given student in kind. I am very willing to help out a struggling student who is obviously working hard.
- 4) Be respectful of your instructors and fellow classmates. This includes arriving to class on time, minimizing talking during lectures and labs, and allowing others to participate without interrupting them.

### **WHAT YOU CAN EXPECT FROM ME**

Just as professors have certain expectations of students, it makes sense that students have certain expectations of their instructors. You can expect the following in this course:

- 1) We will be prepared and equipped to develop your understanding of ecological principles in an informal setting that encourages your input and questions, and makes it easy to participate fully.
- 2) We will provide whatever access and assistance is appropriate and necessary to help you succeed in this course. If you need help in succeeding despite your best efforts, we will do our best to get you on the right track.
- 3) At all times in evaluating your performance in this class, I will be fair and open about examinations, the material I expect you to know, and your overall evaluation in the course. This does *NOT* mean I will provide you with an “easy A,” but it does mean you will get the grade you deserve based on a combination of performance and effort.

### **SPECIAL CONSIDERATIONS FOR INDIVIDUALS WITH DISABILITIES**

If you have a physical or mental impairment that may interfere with your ability to complete the requirements for this course successfully, you are invited to contact Educational Accessibility Services (583 Student Center Building; 577-1851) to discuss appropriate accommodations on a confidential basis.

### **UNEXPECTED UNIVERSITY CLOSURES.**

If the University is officially closed on an exam day, the exam will be held on the next regularly scheduled class day. Closure of the University is announced by the following mechanisms:

1. the University Newline (313) 577-5345 \*
2. WSU Homepage ([www.wayne.edu](http://www.wayne.edu)) \*
3. WSU Pipeline ([www.pipeline.wayne.edu](http://www.pipeline.wayne.edu)) \*
4. WDET-FM (Public Radio 101.9)
5. by other local radio and television stations

\* Note: The information on closures and class cancellations is likely to be found at these locations before it is broadcast by local radio and television stations

### **OTHER**

The instructor reserves the right to modify the schedule as necessary. Students will be informed of any changes to the schedule during class and via Canvas. Any specific issue not covered by this syllabus will be resolved using University policies. Disputes which cannot be resolved following the guidelines present in this syllabus will be resolved by following the guidelines of the University “Student Due Process.”