

BIO 216: Ecology
Spring 2019 Tentative Syllabus
Lecture: T/Th 9:00-10:15
Lab: T 1:25-4:25 or Th 1:25-4:25

Instructor: Kate Mathis (KMathis@clarku.edu)

TA: Dale Stevens (DalStevens@clarku.edu)

Room: Lasry 237 (lecture) ; Lasry 112 (lab)

Office Hours: (Kate) Thursday 11:40-12:40pm or by appointment, in Biology 234
(Dale) Monday 12-1pm in Lasry 340 (3rd floor grad office)

I. Course description:

Course description: This course an overview of ecology as a scientific discipline. The primary emphasis is on efforts to explain and predict the distribution and abundance of organisms, how ecological communities are composed and why they vary in time and space.

Learning Goals:

- Explore concepts from the breadth of ecological fields, including behavioral ecology, population ecology, landscape ecology, species interactions, and community ecology.
- Demonstrate the ability to synthesize and interpret primary ecological literature, including identifying key questions and hypotheses, interpreting the results and conclusions and evaluating the overall quality of the research.
- Become familiar with the use of common ecological sampling techniques such as transects, quadrats, and mark & recapture.
- Learn how to effectively analyze ecological data using T-tests, chi square tests, and ANOVA
- Become familiar with classic ecological models and their applications
- Successfully work in teams to execute original ecological research, from forming questions and hypotheses to analyzing data and drawing conclusions.
- Demonstrate the ability to communicate original ecological research in an oral presentation.

II. Assignments and grading

1. Grading overview: You will be able to earn a total of 1000 points, which will come from the following activities:

Activity	Points possible	Percentage of total points
Exams (Best 3 of 4)	600	60% (20% each)
Labs	200	20%
Final Project	200	20%
Total	1000	100%

Final Grade:	A	=	94 - 100%	=	940 – 1000 points
	A-	=	90 - 93%	=	900 – 930 points
	B+	=	87 - 89%	=	800 – 899 points
	B	=	84 - 86%	=	800 – 899 points
	B-	=	80 - 83%	=	800 – 899 points
	C+	=	77 - 79%	=	700 – 799 points
	C	=	74 - 76%	=	700 – 799 points
	C-	=	70 - 73%	=	700 – 799 points
	D+	=	67 - 69%	=	600 – 699 points
	D	=	64 - 66%	=	600 – 699 points
	D-	=	60 - 64%	=	600 – 699 points
	F	=	Below 60%	=	000 – 599 points

- 2. Exams:** Over the course of the semester four exams will be given. The best three of four exams will be used to calculate final grades.
- 3. Labs:** There are 9 lab sessions where you are required to record information/data/responses to questions in a worksheet that you will submit on Moodle. Each lab is worth 20 points (180 points total), the remaining 20 points will be given for coming to lab on time and actively participating.
- 4. Final Project:** One of the requirements of this lab is the completion of a group research project with two to three other students. The larger the group, the more work is expected. It is highly recommended that your group project be a field project of some kind, though lab projects are also fine given the timing of the course. The goal of this project is to seek the answer of some ecology-related question. By the middle of October, you will have a good idea of different methods you can use to gather data on populations and analyze them in a variety of ways. The group project grade is broken down into a number of categories, including timeliness of handing in your initial proposal, quality of presentation, quality of paper, and peer feedback. You'll receive a great deal more information on the group projects later in the semester.
- 5. Attendance and participation:** You are expected to arrive to class on time and actively participate each class period. Complete attendance is mandatory during all student presentations; otherwise presentation points will be forfeited. If for whatever reason you need to miss a class, please email me beforehand. Attendance in the labs is required and will be taken. If you miss a lab, you will receive a zero for your lab activities for that lab. Only two excused absences from lecture or lab are permitted, for every additional absence you will lose a full letter grade.

III. Policies

What you will need:

1) **You will need access to a computer.** If you do not have one, you can arrange to check out one of the department laptops in Lasry (they must be kept within the building). The computer you use in lab should have wireless access to the web.

2) What to bring for all labs:

- Computer and/or lab handout
- Pencil
- Rite in rain notebook
- Lab Handout

3) What additional items to bring for field labs:

Field labs are rain, snow or shine, so be sure to prepare...

- Water. You should also drink the water.

- Sunblock
- Clothes appropriate for tromping around the cold and/or wet
- Pay special attention to your shoes — no flip-flops or high heels; sandals leave your feet exposed to thorns, ****snakes****, hiking boots of your Prof and/or TA...

Make-up and Late Work Policy: In general, make-ups and late work are not accepted. Likewise, assignments are due at the beginning of class unless otherwise noted, and no make-ups or late work are accepted unless otherwise stated (see grading rubrics). However, most work may be turned in early when you know you have to miss a class. I suggest emailing your work to me early enough to receive a confirmation email from me.

Rebuttal System: If you think you were graded unfairly (or erroneously) on an assignment, please turn in a written explanation (rebuttal) with your graded assignment to me within one week of getting your graded assignment back from me. I will write a response and return it to you. We can set up an appointment if you disagree with my response.

Classroom Etiquette: I expect you to treat other students with courtesy and respect at all times. This includes treating your fellow students' viewpoints with respect, refraining from talking or causing distractions during a lecture or while another student is talking, and doing your share in all group activities. Also, no taking video or photography of lectures please.

Time/Workload: It is expected that you will spend 180 hours working on this course. Only 55 hours of this time will be spent in class and lab, therefore the majority of the work you will be doing will be when we are not together. This will involve spending additional time working on projects and labs as well as reviewing the material learned in class.

Academic Dishonesty: Any effort to circumvent the evaluation procedures of the course to improve the grade for yourself or other students (aka "cheating") is considered academic dishonesty. This includes, but is not limited to, misrepresentation of the cause for an absence during a class or laboratory, submitting the work of another (partially or entirely) as one's own, altering a problem set or lab answer to be submitted for regrading. You are encouraged to report academic dishonesty and anonymity will be protected if requested. If we believe that academic dishonesty has occurred and we have supporting evidence, we will report the case to the College Board immediately after informing the student that we are doing so, and why. Please read Clark's academic dishonesty policy at CUWeb (<http://www2.clarku.edu/offices/aac/integrity.cfm>). If you are uncertain about these guidelines, please consult with us.

Student/Accessibility: Students with learning differences or in need of accommodations of any sort should consult with Student Accessibility Services, accessibilityservices@clarku.edu or (508)-798-4368.

Safe Learning Environment: As an instructor, I am responsible with creating a safe learning environment in our classroom. I am required to share information regarding sexual misconduct or information about a crime that may have occurred at Clark. The only exceptions to this reporting responsibility are designated "Confidential" sources, including the professional staff in Clark's Center for Counseling and Personal Growth and the medical providers at the Health Center, as well as Prof. Cordova (jvs.confidential@clarku.edu), Prof. Palm Reed (kpr.confidential@clarku.edu), and Prof. Stewart (als.confidential@clarku.edu).

Tentative Schedule

Week	Day	Date	Lectures	Lab
1	T	8/27	Intro to Ecology	1: Take home activity (No Lab)
	Th	8/29	Science + Practice of Ecology	
2	T	9/3	Ecology and Evolution	2: Observations, Questions & Analysis (outside)
	Th	9/5	Life History I: Adaptations to the environment	
3	T	9/10	Life History II: Tradeoffs	3A: Plant Quadrat Sampling (outside)
	Th	9/12	Behavioral Ecology	
4	T	9/17	Exam 1	3B: Plant Quadrat Sampling (inside)
	Th	9/19	Population Distribution and Abundance	
5	T	9/24	Population Growth and Regulation	4: Field Collection of Insects – Techniques (outside)
	Th	9/26	Population Dynamics	
6	T	10/1	Biogeography	5A: Diversity & Similarity (outside)
	Th	10/3	Conservation Biology	
7	T	10/8	Landscape Ecology	5B: Diversity & Similarity (outside)
	Th	10/10	Paper Discussion: Rewilding with Charismatic Megafauna	

Week	Day	Date	Lectures	Lab
8	T	10/15	FALL BREAK	Take Home: Methods for Final Project
	Th	10/17	Exam 2	
9	T	10/22	Species interactions overview	6: Behavioral Ecology (inside)
	Th	10/24	Competition Part 1	
10	T	10/29	Competition Part 2	7: Mark & Recapture (inside)
	Th	10/31	Predation Part 1	
11	T	11/5	Predation Literature Activity	8: Competition (inside)
	Th	11/7	Parasitism & Disease	
12	T	11/12	Mutualism	9. Field Trip (Nov 10th 11am-3pm)
	Th	11/14	Exam 3	
13	T	11/19	Guest Lecture (KM Away)	No Lab
	Th	11/21	Community Ecology Part 1	Presentations – Part 1
14	T	11/26	Community Ecology Part 2	Presentations – Part 2
	Th	11/28	THANKSGIVING	No Lab
15	T	12/3	Community Ecology Part 3	Take Home Peer Review
	Th	12/5	Exam 4	