Syllabus—Principles of Ecology Bio3403

Instructors and venues

Workshops (Monday and Wednesday, 11:30-12:20): PHSC 224.

Dr. Michael Kaspari, mkaspari@ou.edu. Office Hours: by appointment.

Labs (1:30-4:20, Monday or Wednesday): Richards 214: Thayer Hallidayshult thayer@ou.edu, and Karl Roeder karoeder@ou.edu

Required materials

Cain, M.L., WD. Bowman and S.D. Hacker. 2011. Ecology, 2nd Edition, and an i-clicker2. Other course materials are available online on D2L.

Course format

Principles of Ecology is an integrated course combining a 3-hour lab, and two 1-hour workshops each week. In both you will be working with two other individuals in a team, assigned by me, throughout the semester. The rhythm of the class will proceed roughly as follows

Thursday:

Readings and video lectures are assigned, associated online content quiz and any other assignment.

Sunday 1159 PM:

You are required to have completed the online content quiz by this time. This allows me adjust workshop time to the course content requiring the most review.

Monday

Workshop

Clicker Quiz (individual)
Discussion among the team
Retake Clicker Quiz
Problem solving, discussion, planning for that week's lab

Lab

Review hypotheses
Review equipment and supplies
Design experiment
Execute the experiment

Wednesday

Workshop

Clicker Quiz (individual)
Discussion among the team
Retake Clicker Quiz
Problem solving, discussion

Lab

Review hypotheses
Review equipment and supplies
Design experiment
Execute the experiment

A note about the lab

As this is an ecology course, about half the labs will take place out of doors, in the field. This may mean working on the grounds of the south oval, in the grasslands south of the Natural History Museum, in the Aquatic Research Facility (ARF), or in Oliver's Woods, just south of Highway 9 across from the ARF. **Field labs require closed shoes (i.e., sneakers, not sandals) and long pants. I also recommend long-sleeved shirts. Be prepared to get dirty. If you have allergies to bugs or plants, let your TA know.**

What contributes to your grade, why, and by how much

The following activities, each associated with a point total, give you opportunities to gauge your progress in learning the approaches, tools, and concepts of ecology and scientific problem solving. The total number of points earned in the course will be divided into 1000 (you may notice that the grading scheme below provides the opportunity to earn more than 1000 points). Those students earning 900 or more points will earn an A; those earning 800-899 will earn a B; those earning 700-799 will earn a C, those earning 600-699 will earn a D; those earning less than 600 will earn an F.

Online content quizzes (112 points)

Online content quizzes allow me to get a first look at what you have learned from the readings and videos. Each of 16 content quizzes are worth 7 points. They consist of a series of short answer questions that must be answered before 1159PM Sunday before Monday's workshop. I will review them Monday morning when preparing for class. They are graded pass/fail.

Clicker Quizzes (319 points total)

Clicker quizzes allow me to quickly evaluate how the class grasps the concepts and tools from the preceding week's readings and videos. Each clicker quiz will be administered first for individuals and will be worth 5 points. Next, teams will be given the opportunity to discuss their answers. Finally, individuals will retake the quiz, which is now worth 6 points. Thus each workshop's clicker quiz will earn a possible 11 points. We will drop your two lowest clicker quizzes, and prorate those scores.

Assignments (100 points)

Over the course of the semester, there will be opportunities to summarize and integrate what you have learned in the form of one-page assignments combining graphics and text. Sometimes they will be individual work; sometimes, as in the case of lab summaries, your team will generate them. There will be 10 opportunities for assignments throughout the semester. We will drop your lowest assignment score and prorate it.

Midterms (2, at 100 points each)

One third, and two thirds of the way through the semester we will have a traditional midterm exam during time normally reserved for workshops. It will consist of 10 questions, some multiple-choice, some short answer, some requiring a drawing.

Final Exam (200 points)

The final exam, scheduled 10 December, 1:30-3:30, will consist of 20 multiple-choice questions.

Final Project (100 points)

A key test of how much one grasps a topic is one's ability to communicate it to others. For the final project, you have a choice of one of three activities.

1) Create a 10-slide PowerPoint presentation that explains an ecological concept. Record the narration so that it is a self contained video that could be posted to the Principles of Ecology YouTube channel.

2) Write a 400-500 word essay aimed at the readership of the Daily Oklahoman making the case for how a better understanding and practice of ecological principles would improve the life of the citizens of Oklahoma.

3) Create a piece of art that captures an ecological principle. Create a description of the piece that would hang next to it, that includes the name of the piece, the name of the artist, the date it was created, and a short description of the materials and process by which you created it and the principle it was meant to project. These are due the last day of class.

Highlighting Excellence in Principles of Ecology

While grades are pretty good ways for evaluating how much folks have achieved, Principles of Ecology would like to recognize excellence in another tangible way. There are thus four awards determined by a panel consisting of your instructor and your lab instructors and outside experts. Each winner will earn a $50 gift card from Amazon.com, and a certificate of merit.

The Principles of Ecology Scholarship award:

This award celebrates the person who earns the most possible points. In the unlikely case of a tie, all winners will receive the certificate, and one, determined randomly, will receive the gift card.

The Principles of Ecology Best Educator award

This award celebrates the best educational video from the final project.

The Principles of Ecology Best Writer award:

This award celebrates the best essay from the final project.

The Principles of Ecology Best Artist award

This award celebrates the most compelling art from the final project.

Missed Exams and Assignments:

In general, there will be no opportunity to make up missed assignments. Missed exams and assignments will receive a grade of 0. The exception to this policy will be for students who miss an exam or assignment due to a suitable and documented reason. Suitable reasons might include a confining illness or injury or death in the immediate family, and appropriate documentation might include a letter from a physician. Determination of whether an excuse is suitable is at the discretion of the instructor. Students missing exams must report their reason to the instructor on the day of the exam or a grade of 0 will be recorded.

Reasonable accommodation:

Any student in this class who has a disability that may prevent her or him from fully demonstrating their abilities should contact the instructor as soon as possible to discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

Cheating and academic misconduct:

You, the student, are responsible for understanding and abiding by the guidelines published in the Student Code, including the Academic Misconduct Code. Cheating will not be tolerated.

Schedule

Week	Date	Topic	Lab	Dress for Field?	Assignment
1	19-Aug-13	Introduction and Biodiversity	Ant biodiversity surveys	Y	Y
	21-Aug-13	Biodiversity		Y	
2	26-Aug	Biodiversity	Quantifying ant biodiversity		Y
	28-Aug	Biodiversity			
3	2-Sep	NO CLASS	NO LAB Monday or Wednesday		
	4-Sep	Biodiversity			
4	9-Sep	Abiotic Limits	Set up Field Experiment	Y	
	11-Sep	Abiotic Limits		Y	
5	16-Sep	Abiotic Limits	Set up Mesocosms	Y	
	18-Sep	Abiotic Limits		Y	
6	23-Sep	Invasive Species	Big Data		Y
	25-Sep	Midterm 1			
7	30-Sep	Organismal Biology	Plant Life History Harvest	Y	
	2-Oct	Organismal Biology		Y	
8	7-Oct	Organismal Biology	Plant Life History Processing		Y
	9-Oct	NO CLASS			
9	14-Oct	Thermal Ecology and Climate Change	Thermal ecology of ants	Y	Y
	16-Oct	Thermal Ecology and Climate Change		Y	
10	21-Oct	Thermal Ecology and Climate Change	Constructing TPCs in the lab		Y
	23-Oct	Thermal Ecology and Climate Change			
11	28-Oct	Thermal Ecology and Climate Change	Drawing as Observation		Y
	30-Oct	Thermal Ecology and Climate Change			
12	4-Nov	Midterm 2	Harvest Mesocosms, Invert ID		
	6-Nov	SNOMNH Ecological Principles			Y
13	11-Nov	Ecosystem function	Process mesocosms		

	13-Nov	Ecosystem function			
14	18-Nov	Ecosystem function	Harvest field experiments	Y	Y
	20-Nov	Ecosystem function		Y	
15	25-Nov	Ecological Economics and Sustainability	Thanksgiving week –NO LAB		
	27-Nov	Ecological Economics and Sustainability			
16	2-Dec	Ecological Economics and Sustainability	Process Field Experiment		Y
	4-Dec	Ecological Economics and Sustainability			
	10-Dec	Final Exam	1:30-3:30PM		