BI 471/571: Population Ecology – Syllabus *Winter 2012*

Instructor. Professor Jessica L. Green (jlgreen@uoregon.edu)
Lecture time. Tuesday and Thursdays, 12:00 – 1:20 pm
Lecture room. Earl International House 2
Office hours. Tuesdays 1:30 – 2:30, Wednesdays 9-10
Office hours room. 301 Pacific
Course website: http://blackboard.uoregon.edu

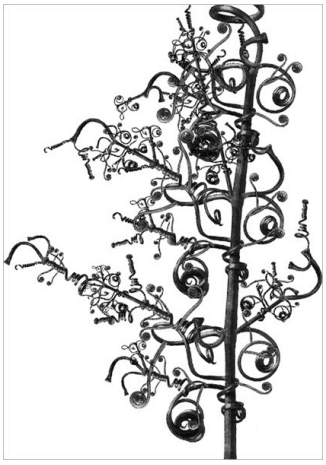
Course Philosophy and Goals. This course should provide a novel, and hopefully fun, way of learning about population ecology. We will learn about population ecology through a combination of reading, problem solving, writing and discussion. My goal is that by the end of the course, all students will be able to 1) use relatively simple mathematical methods (often "back of the envelope" variety) to understand ecological systems, and 2) digest and articulate the salient points of a scientific article on population ecology. Equipped with these skills, students will be adept at making informed decisions relevant to science policy. My approach throughout the course will be to teach, rather than lecture. Thus, students will be expected to participate in the learning process during class sessions and to team-teach one lecture. Adjustments will be made to the following outline based on the needs of the class as we progress.

Readings. There is no comprehensive textbook that covers the breadth of topics we will explore. We will draw upon the textbook below during the first half of the term and it is available for purchase at amazon.com.

Hastings, A. Population Biology: concepts and models. 1997. Springer-Verlag, New York.

Additional required readings will be available for download at http://blackboard.uoregon.edu.

Homework. Approximately 6 problem sets will be due in this course. Assignments will be due about one week after the relevant course material has been covered Assignments are due at the beginning of class. Students are strongly encouraged to collaborate on assignments outside of class. In addition, there will be 2 homework assignments at the end of the term in conjunction with team-teaching.



Exams. There will be one take-home midterm. Unlike homework assignments, this exam is not collaborative. You are to work on the exam on your own, without discussion with other students.

Team teaching. All students will be required to team-teach one topic. Team teaching includes choosing relevant class

reading or media on the topic & leading a class discussion. Four weeks prior to the day your team is scheduled to lead a topic you will submit a proposal for: 1) the topic, 2) reading and/or media, and 3) a discussion outline. Details on team teaching are posted on the course blackboard site.

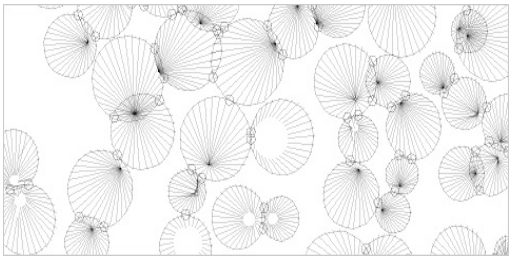
Final project. The final project will be a written synopsis of the material covered in the team teaching component of the class in the form of a blog. Although teaching as a team effort, the final project is to be completed independently by each student. Details on the final project will be posted on the course blackboard site.

Grade determination. Your final grade will be based on ¼ homework, ¼ team teaching, ¼ midterm and ¼ final project.

Cell phones. All portable electronic devices (e.g. cell phones) must be turned off and put away during class.

Academic Conduct. Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations, plagiarism and other forms of academic dishonesty. Please refamiliarize yourself with the definitions of cheating and plagarism (see the "about cheating" sectionsat http://studentlife.uoregon.edu/programs/student_judi_affairs). If you have doubts or questions about acceptable conduct in any situation, I encourage you to discuss the situation with me in advance. University rules on academic integrity will be strictly enforced.

Images from blog.metaphorical.net/



Below is a *tentative* schedule for this course. It will be updated as the course progresses.

	Date	Title	Content	Readings	Assignment due
Week 1	1/10	Introduction	Course overview		
	1/12	Single species dynamics 1	Density-independent population growth	Hastings 2.1	
Week 2	1/17	Single species dynamics 2	Density-dependent population growth	Hastings 4.1, 4.2	
	1/19	Single species dynamics 3	Equilibrium analyses	Hastings 4.1, 4.2	Assignment 1
Week 3	1/24	Single species dynamics 4	Lag time and density dependence	Hastings 4.3, 4.4	
	1/26	Single species dynamics 5	Metapopulations	Hastings 4.5	Assignment 2
Week 4	1/31	Multi-species interactions	Stability and the community matrix	Hastings 6	
	2/2	Competition 1	Lotka-Volterra models	Hastings 7.1	Assignment 3
Week 5	2/7	Competition 2	Lotka-Volterra models	Hastings 7.2, 7.3, 7.4	
	2/9	Predator-Prey interactions 1	Lotka-Volterra models	Hastings 8.1, 8.2	Assignment 4
Week 6	2/14	Predator-Prey interactions 2	Density dependence	Hastings 8.3, 8.4	
	2/16	Predator-Prey interactions 3	Functional response	Hastings 8.5, 8.6, 8.7, 8.8	Assignment 5
Week 7	2/21	Diseases & Pathogens 1	Epidemic models	Hastings 10	
	2/23	Diseases & Pathogens 2	Epidemic models	Hastings 10	Assignment 6
Week 8	2/28 & 3/1	Take home midterm			
Week 9	3/6	Team teaching			
	3/8	Team teaching			Assignment 7
Week 10	3/13	Team teaching			
	3/15	Team teaching			Assignment 8