Syllabus: PCB 6447C

Community Ecology, Spring 2016

Instructors: Todd Palmer, 411 Carr Hall, 392-6357, tmp@ufl.edu
Robert D. Holt, 111 Bartram Hall, 392-6917, rdholt@ufl.edu
Lab manager: Mrs. Vitrell Sherif, vitrell@ufl.edu

Office Hours: By appointment

Class time and place: **Tuesdays** 11:45-12:35**,** 5th period, Room 211 Bartram Hall
Thursdays 11:45-1:40, 5th – 6th period, Room 521 Carr Hall

Credit hours: 4 credits

Text: Community Ecology, Gary G. Mittelbach, 2012, ISBN: 978-0-87893-509-3 (paperbound). Highly recommended: A Primer of Ecology, 4th Ed., Nicholas J. Gotelli, 2008, ISBN: 978-0-87893-318-1. The Reitz Union bookstore has copies of the text. If they run out, more can be ordered. Also, one can order directly from the publisher, with a discounted price and free shipping (http://www.sinauer.com/)
Additional readings from the primary literature will be assigned, as the class proceeds.

Prerequisites: Instructor's permission, intellectual curiosity, and enthusiasm. It is expected that you will have had instruction in ecology and related disciplines, such as evolution, statistics and biomathematics. This is a graduate course, and so we expect a high level of intellectual engagement with the material.

Course objectives:
The overall goal is to help students achieve a rigorous understanding of contemporary community ecology, and how current understanding has arisen from key historical precedents. The basic objective of community ecology is to understand patterns in community assemblages, across time and space. These properties might include species diversity and composition, patterns of interspecific abundance, historical patterns of assembly – and disassembly – and the grounding of all these patterns in the dynamics of interactions among species and their evolutionary histories and ecosystem contexts. We will deal both with theoretical and empirical issues. We hope to make graduate students more literate in the basic concepts of theoretical ecology that are important in community ecology. Although this is not specifically a course on the mechanics of modeling, or computer simulation, or dynamical systems, we will necessarily deal with much abstract, mathematical and computational material.

The course will comprise: lectures; readings of a synthetic textbook and primary publications in the historical and contemporary literature; discussions; periodic written assignments, including a term paper. Details about these will be provided later.

Grades: Grades will be assigned per UF policy (see http:///www.registrar.ufl.edu/catalog/policies/regulationgrades.html for full details).
Your final grade will be determined on the basis of the following: a) Participation 20%, b) short written assignments 20%, c) literature presentation and discussion 30%, d) term paper 30%.

Class attendance and etiquette policy. You are expected to come to class and participate in each class period, and to have read and digested the assigned reading material. All absences require a valid reason, and without such a reason, points will be deducted from your class grade. You will be responsible for any material missed in class, and to make up for your absence, you will need to write

short essays demonstrating that you have covered the reading assignments so missed. Likewise, points will be deducted from your grade for turning in assignments late. Our policy is to deduct 10% from the grade, per late day, for late assignments.

We expect that in class you will be paying close attention and really engage with lectures and discussions. This means that you should not be checking your email, surfing the web, or otherwise electronically (dis)engaged. Keep cellphones turned off. Please.

Disabilities accommodation: Students requesting classroom accommodation need to register first with the Dean of Students Office. The Dean of Students Office will then provide documentation to the study, who must then provide this documentation to the course instructor, when requesting accommodation.

How the course is structured. We aim to foster interaction and engagement by students in the class. The course consists of a combination of traditional lectures, group discussions, and peer review of student writing. On each topic indicated in the schedule below as a "student-led discussion", there will be one to two hours focused on 2 to 4 papers from the primary literature. Pairs of students will present papers on those days, with each student in a pair taking primary responsibility for 1 to 2 of these. The quality of those presentations will be critical to the quality of the class. But each of you have to closely and carefully read, digest and think about the material, in order for a class discussion to work. To facilitate this, each pair will have a designated Discussion leader, who will give a 10-15 minute detailed overview of the paper at the start of the discussion, and a written summary of the basic concept and findings of the paper, along with questions to be brought up in the class discussion. This needs to be turned in to our lab manager, Mrs. Vitrell Sherif (vitrell@ufl.edu), to be distributed to the class, by the morning of the day preceding the day of the discussion. In addition **each of you** will be required to write a one-paragraph summary of the main points of the papers, and 3 (or more) questions based on each week's readings, and bring this to the class discussion. You will be required to turn these summaries and questions in to the instructors **prior** to the start of discussion, so please keep a second copy for yourself so that you have the opportunity to raise these questions during the class.

Class Schedule

January

1	5th, T	What is community ecology? (Preface, and *Chapter 1*)
2	7th, Th	Grounding community ecology in population dynamics (*Chapter 4*)
3	12th, T	The current status and future prospects of population ecology (guest lecture - Charles Krebs!)
4	14th, Th	Patterns of Biological Diversity (*Chapter 2*)
5	19th, T	Predator-prey interactions I (*Chapter 5*)
6	21st, Th	Predator-prey interactions II (*Chapter 5*)
7	26th, T	Predator-prey interactions III (*Chapter 6*)

8	28th, Th	Predator-prey interactions IV; (student-led discussion 1; *Chapter 6*)

February

9	2nd, T	The ecology of infectious disease I (guest lecture: Juliet Pulliam!)
10	4th, Th	The ecology of infectious disease II (student-led discussion 2)
11	9th, T	Interspecific competition: Simple theory (*Chapter 7*)
12	11th, Th	Interspecific competition in nature (student-led discussion 3; *Chapter 8*)
13	16th, T	Positive interactions in communities (*Chapter 9*)
14	18th, Th	Mutualism in the real world; Positive interactions (student-led discussion 4)
15	23rd, T	Niche construction and ecological engineering
16	25th, Th	Niche construction and ecological engineering II (student-led discussion 5) ****Prospectus for Term Paper Due****

March

	1st, T	Spring break
	3rd, Th	Spring break
17	8th, T	Species interactions in ecological networks I (*Chapter 10*)
18	10th, Th	Species interactions in ecological networks II (student-led discussion 6)
19	15th, T	Food chains and food webs I (Chapter 11)
20	17th, Th	Food chains and food webs II (student-led discussion 7)
21	22nd, T	Biodiversity and ecosystem function I (*Chapter 3*)
22	24th, Th	Biodiversity and ecosystem function II (student-led discussion 8)
23	29th, T	Spatial community ecology I (*Chapter 12*)
24	31st, Th	Spatial community ecology IV (student-led discussion 9)

April

25	5th, T	Metacommunities and Neutral theory *Chapter 13*
26	7th, Th	Macroecology and Neutral theory (student-led discussion 10)

27	12th, T	Species coexistence in variable environments (*Chapter 14*) ****Term Paper Due****
28	14th, Th	Diversity, stability, and applied ecology
29	19th, T	Evolutionary community ecology and Concluding Thoughts (*Chapters 15 and 16*)