

## **Principles of Ecology- Spring 2007**

### **ABIO 570 (4 credit hours)**

**Instructor: Dr. Andrew Dyer**  
Phone: 641-3443

Office: SBDG 101E  
email: andyd@usca.edu

Lecture:            MW    1:00 – 2:15    SBDG 200  
Lab:                W     2:30 - 5:10    SBDG 108  
Office hours:      M     2:30 – 4:00 and by appointment

**Required textbook:** Begon, Townsend & Harper. 2006. *Ecology*, 4<sup>th</sup> ed.

#### **Course description**

This course is intended for biology majors who have already taken an introductory ecology class and will combine lecture and laboratory activities aimed at improving general understanding of ecological concepts. Much of the class will focus on application of concepts in 'experimental' situations and will involve reading, writing, analysis of data and presentations. Aspects of both plant and animal ecology will be presented and discussed. Information will be presented in the form of lectures, discussions, reading assignments, group reports, and laboratory exercises.

#### **Laboratory description**

This session will be used for exploratory labs, formal and informal discussion of lecture, text, and supplementary material, individual and group presentations, and individual projects. Assignments in lab will have due dates depending on the assignment, but the last lab of the semester is the last day any regular work can be accepted. Any supplementary reading materials assigned for lab discussions will be handed out in class or will be available for photocopying outside Room 101E in the Sciences building. On several days we will leave the campus to visit nearby areas of ecological interest.

#### **Objectives**

- To acquaint the student with the basic ecological principles describing community and ecosystem ecology.
- To develop skills in experimental design, data collection, and data analysis.

#### **Competencies**

By the end of this course, the student will have demonstrated the ability to

- Discuss basic ecological principles and contemporary examples that illustrate those principles.
- Describe potential mechanisms by which organisms interact and compete for resources in nature.
- Describe basic methods for quantifying ecological interactions in the field and through statistical analysis.

### **Grading (about 800 total points)**

Testing on principles, examples –	4 exams = 400 pts
Essay-style on understanding of material, may be take home	
May include short reading assignments	
Reading assignments/discussions	10 papers = 150 pts
Lab exercises	12 labs = 250 pts
May include creating and reading bar graphs, regressions, statistical interactions; calculating means, standard errors, percent; interpreting statistical results	
	Total ~ 800 pts

Questions regarding grading must be handled within a week of getting the assignment back.

### **Additional comments**

1. Preparation for class includes reading any assigned material beforehand.
2. Lab activities will be done in pairs and groups and it is expected that lab partners will work together on assignments. However, all written work turned in by any student will be the work of that student. Any persons turning in the same written work will receive a zero on that assignment.
3. Plagiarism is any work that was written by someone else, is based on work written by someone else, or is a modified version of that work. The rewording of another person's writing is also plagiarism. All written assignments will be checked. Any work that appears to be plagiarized will be questioned. A notice will be sent to the Vice Chancellor on the first offense.
4. If you are having difficulty with any aspect of this course, please come see me as soon as possible. If my regular office hours conflict with your schedule, you can make an appointment to see me at a more convenient time.
5. If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B & E, (803) 641-3609 as soon as possible. The Disabilities Services Office will determine appropriate accommodations based on medical documentation.
6. You will be expected to endorse the following Honor Pledge on every quiz or exam:  
On my honor as a University of South Carolina Aiken student, I have neither given nor received any unauthorized aid in this assignment/examination. To the best of my knowledge, I am not in violation of academic honesty.
7. Students are expected to adhere to the University attendance policy as stated in the Student Handbook. If a student has more than 4 unexcused lab absences or <70% lecture attendance, a failing grade will be issued.

<b>ABIO 570 - Tentative course outline</b>					
<b>Week</b>	<b>Date</b>		<b>Topic</b>	<b>Material</b>	<b>Laboratory</b>
1	Jan	17	Populations	Chap 2	
2	Jan	22	Life Histories	Chap 4	
		24		Larkin, Douglas papers	Cemetery data
3	Jan	29	Metapopulations	Chap 6	
	Jan	31		Knapp paper	Meta-pops research
4	Feb	5	Applications	Chap 7	
	Feb	7		Bierregaard paper	Dispersal
5	Feb	12	<b>Exam I</b>		
		14	Competition (L-V)	Chap 8	
				Kotler paper	Territoriality
6	Feb	19	Predation	Chap 9	
		21			Mark-Recapture
7	Feb	26	Parasitism	Chap 12	
	Feb	28			(Data analysis)
8	Mar	5	Symbiosis	Chap 13	
	Mar	7			Sampling
9	Mar	12	<b>Spring break</b>		
		14	<b>Spring break</b>		
10	Mar	19	<b>Exam II</b>		
		21	Communities	Chap16	Transects
11	Mar	26	Succession	Minnich paper	
	Mar	28	Energy	Chap 17	Transects
12	Apr	2	Interactions	Chap 19	
		4		Young paper	TBA
13	Apr	9	Food webs	Chap 20	
		11		Yukon paper	Wetlands
14	Apr	16	Diversity	Chap 21	
		18	Island biogeo		TBA
15	Apr	23	<b>Exam III</b>	Chap 22	
		25	Applications	GM crops	TBA
16	Apr	30	Conservation		
<b>Monday</b>	<b>May</b>	<b>7</b>	<b>Final exam-2 pm</b>		