

## Introduction to Honors Ecology: ECOL3505/L-201002

**Ecology** is an analytical science built upon a strong foundation of experimental analysis in the scientific tradition. The professional mission of ecology is to understand and predict the distribution and abundance of organisms throughout the biosphere. Needless to say, we are still far short of that lofty goal. **Ecology is not synonymous with conservation**, and we will not have much time to deal with questions of conservation. (I recommend Conservation Biology (ECOL3530/D) for an introduction to environmental conservation.) Ecology is to conservation as anatomy is to orthopedic surgery. An environmental management specialist cannot diagnose and treat an environmental illness without understanding how the environment works. ECOL3505/L will provide you with an introduction to the structure and function of natural living systems. It is, in effect, an introduction to the “anatomy and physiology” of the biosphere at the organism level.

Ecology has expanded into a diverse array of specialties, including physiological ecology, theoretical systems ecology, behavioral ecology, marine benthic ecology, and a host of other investigative areas. ECOL3505/L is an introductory survey course. As such, we will follow closely our text, **The Economy of Nature, 6th edition**. Author Robert E. Ricklefs has invested significant effort in selecting the topics and supporting research adjusted to fit within a single text designed for a single semester course. Exam questions are taken almost entirely from text material, so do not fail to purchase this essential study guide, used or new, available from UGA and surrounding textbook stores. Remember: **6th edition!**

**HONORS:** This is the first time that Introductory Ecology has been offered as an honors class. The Honors Program is excited, the Odum School of Ecology is excited, and I am excited. I count on the fact that you also will be excited to participate in a new adventure. You are strongly encouraged to be involved in the shaping of this class for the future, so share your ideas, flexibility is built into the syllabus for that purpose. I do not consider an honors class to be measured by more work; I consider an honors class to reflect more critical thinking, more emphasis on quality writing, and greater individual participation in class and outside of the classroom. As I said before, greater quality of work does not imply a greater quantity of work.

**GRADES:** There are no artificial quotas established for grades in ECOL3505/L. In fact, it is my assumption and most fond wish that everyone will earn an **A** in this course. Apply yourself to participation in class and learning the material, and you should earn that **A** for your effort. Take your laboratory seriously; it is worth a third of your grade. Develop a positive, professional relationship with your laboratory instructor, for he/she will determine your laboratory grade. Before final grades are submitted, I provide my TAs with the opportunity to petition for a borderline student to be bumped to a higher grade, if they are convinced that one of their students has committed fully to the laboratory experience

and deserves recognition for that fact. UGA mandates the +/- grading; be aware of the point distribution for the +/- system of grading.

**EXTRA CREDIT:** I traditionally provide the opportunity for extra credit when teaching ECOL3500/L, but your participation in ECOL3505/L and my assumption that you can and will earn an A in the class obviates the need for extra credit. It is also true that extra credit requires/assumes more busy work, and I want all of your available time for class. Participation in and preparation for class will be our “extra credit,” equal to a letter grade in value.

**ATTENDANCE:** Attendance at lectures is a university rule, and this will also provide a measure of your participation commitment mentioned above. Whereas nearly all examination material is covered in the text, lectures do stress the details required for answering SCANTRON multiple choice questions. Proposed exam questions are often identified in class, especially if the question is not covered in the text, such as the latitude and longitude of Athens, GA. For all of these reasons, I strongly recommend your attendance at lectures. **Laboratory attendance is absolutely mandatory;** a significant portion of your lab grade depends on this participation. **Attendance at scheduled exams is very important;** make-up exams are usually oral exams, requiring three or more hours of intensive two-directional discussion with me on ecological issues.

**HONOR CODE:** Just a reminder that all of us, ...faculty, graduate TAs, and undergrads, ...have signed on to the UGA academic honor code. All academic work must meet the standards contained in “A Culture of Honesty.” Students are responsible for informing themselves about these standards before performing academic work, including violations such as plagiarism, falsifying medical absences, and other breaches of the honor code, but you already know all of this; you are honors students. We will be involved in peer review of essay drafts, and this is not a violation of the UGA honor code. Incidentally, failure to report a violation of the honor code by another individual is itself a violation of the honor code, and this responsibility applies to graduate teaching assistants and faculty instructors as well as undergraduates. Simply stated, upholding the UGA honor code requires honesty with self.

I wish you the very best of success for this Spring 2010 semester.

**ECOL3505H – Honors Ecology Syllabus**

Spring Semester 2010

Dr. James I. Richardson, Odum School of Ecology

**Lectures in Room 12 Ecology Building (Conference Room)**

Second Period: MWF 9:05 - 9:55 AM

**Schedule of Lectures and Examinations:**

<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Reading</u>
Jan. 08	F	1. What is Ecology?	Ricklefs 01
Jan. 11	M	2. Water and Nutrients	Ricklefs 02
13	W	3. Light, Energy, and Heat	Ricklefs 03
15	F	4. Catch-up	
Jan. 18	M	<b>Martin Luther King Day - no class</b>	
20	W	5. Climate, Water, and Soil	Ricklefs 04
22	F	6. Catch-up	
Jan. 25	M	7. Evolution and Adaptation	Ricklefs 06
27	W	8. Life Histories and Fitness	Ricklefs 07
29	F	9. Catch-up	
Feb. 01	M	10. Sex and Evolution	Ricklefs 08
03	W	11. Catch-up	
05	F	12. Family, Society, and Evolution	Ricklefs 09
Feb. 08	M	13. Catch-up	
10	W	14. Macroecology	(Special lecture)
12	F	15. <b>Exam #1 (Chapters 1-4 and 6-9)</b>	
Feb. 15	M	16. Energy in the Ecosystem	Ricklefs 22
17	W	17. Catch-up	
Feb. 19	F	18. Pathways of Elements	Ricklefs 23
Feb. 22	M	19. Catch-up	
24	W	20. Nutrient Regeneration	Ricklefs 24
26	F	21. Catch-up	
March 01	M	22. Spatial Structure of Populations	Ricklefs 10
03	W	23. Population Growth and Regulation	Ricklefs 11
05	F	24. <b>Exam #2 (Chap. 22-24 and Macroecology)</b>	

<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Reading</u>
March 08	M	<b>Spring Break</b>	
10	W	<b>Spring Break</b>	
12	F	<b>Spring Break</b>	
March 15	M	25. Catch-up	
17	W	26. Temporal and Spatial Dynamics	Ricklefs 12
19	F	27. Population Genetics	Ricklefs 13
March 22	M	28. Catch-up	
24	W	29. Species Interactions	Ricklefs 14
26	F	30. Predator-Prey	Ricklefs 15
March 29	M	31. Catch-up	
31	W	32. Competition	Ricklefs 16
April 02	F	33. Catch-up	
April 05	M	34. Evolution of Species Interactions	Ricklefs 17
07	W	35. <b>Exam #3 (Chap. 10-15)</b>	
09	F	36. Catch-up	
April 12	M	37. Community Structure	Ricklefs 18
14	W	38. Succession	Ricklefs 19
16	F	39. Catch-up	
April 19	M	40. Biodiversity	Ricklefs 20
21	W	41. Catch-up	
23	F	42. Landscape Ecology	Ricklefs 25
April 26	M	43. Catch-up	
28	W	44. Catch-up	
29	R	45. Wrap-up	

Deadline for course withdrawal (**WP**) is Tuesday, **23 March**. A withdrawal with failure (**WF**) is mandated by the University for an unexcused withdrawal after 5:00 PM on 23 March for any University of Georgia course. You will receive an estimated midterm grade on March 19, well before the withdrawal deadline at 5:00 PM on 23 March, to assess your progress, including your first exam on February 12, your second exam on March 05, and laboratory.

**Dr. James I. Richardson**

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office hours by arrangement

**Class text**

Robert E. Ricklefs  
The Economy of Nature (6<sup>th</sup> ed.)  
W. H. Freeman and Company  
New York, NY

## Grading schedule (1200pts; 100%)

### 1. Lecture (800pts, 67%)

<u>Item</u>	<u>Points</u>	<u>Percent</u>	<u>Date</u>	<u>Time</u>
Exam #1	120	15%	February 12	(9:05-9:55 AM)
Exam #2	120	15%	March 5	(9:05-9:55 AM)
Exam #3	120	15%	April 7	(9:05-9:55 AM)
Take-home Essays	120	15% (3 @ 5%)	(TBA)	
Term Paper	160	20%	April 29	(due in class)
Feedback notes	40	5%	(TBA)	
<u>Participation</u>	120	15%		
total	800	100%		

### 2. Laboratory (400pts, 33%)

#### Grading details:

Exams (three of them) will be a combination of multiple choice, short answer (one sentence), and longer answer (paragraph) format. We will identify a list of longer-answer questions during class, from which a subset will be chosen for each exam.

Take-home essays (three of them) will allow us to continue practice with WIP (Writing Intensive Program) guidelines now being implemented campus-wide. This exercise will provide experience and confidence for your final term paper. Brevity is virtue; you should discuss a topic with clarity and completeness, and do so in the fewest words necessary. We will discuss the details of WIP guidelines in class. You will be graded on the first draft of your essay, your ability to provide positive criticism of another's draft, and evidence that you considered peer review comments with objectivity in your final draft.

Final term paper topic and design will be discussed in detail during class. A probable theme could be global warming as it may affect the structure and function of one or several hierarchical units of ecological organization (individuals, populations, communities, ecosystems); your choice. Quality of writing is essential, thus the practice with take-home essays. Graded drafts and peer reviews are not required for the final term paper, but peer review is always encouraged. The final term paper effectively replaces a final exam.

Feedback notes are mini observations (hard copy or email) requested periodically on clarity and understanding of class material, also called "clear and muddy" statements.

Participation (your "extra credit") will recognize your preparedness and participation in class. Coming to class is very important but not the whole story. We must all be prepared for meaningful discussion in class, or the value of class participation is largely wasted. Read ahead! We may take turns describing an example of research presented in the text. One or several students may choose to deliver a lecture, using my power point presentation or a modified presentation of their own. Come up with your own ideas. We can do anything we want to make this experience fun, but participation is key. The difference between an honors class with twenty students and a standard class with 180 students can be enormous; let's not waste the opportunity.