

ECOLOGY & SOCIETY (EEB 306) Spring Semester 2014

When and Where:	3:40-4:55 PM TTh	427 Hesler Biology Building
Instructor:	A. C. Echternacht 974-3065 or 974-2256	530 Hesler Biology Building echterna@utk.edu
Required Texts:	Fishman, Charles. 2011. The Big Thirst: The Secret Life and Turbulent Future of Water. Free Press, New York.	
	Preston, Richard. 1994. The Hot Zone. Anchor Books, New York.	
	Stolzenburg, William, 2008. Where the Wild Things Were: Life, Death, and Ecological Wreckage in a Land of Vanishing Predators. Bloomsbury USA, New York.	

RATIONALE FOR THIS COURSE

The intent of this course is to introduce basic concepts in ecology that pertain to the health and welfare of the biosphere and its inhabitants, including humans. All of the topics covered involve issues that are frequently discussed in the print and electronic media, and many involve governmental regulation. Although it is probable that few, if any, of you aspire to a career requiring expertise in ecology, all of you will have the opportunity, if only by exercising your right to vote, of becoming involved in decisions that relate directly or indirectly to critical environmental issues. So ... the purpose of this course is to help you become an “educated Layman” when it comes to environmental issues by giving you a better understanding of these issues and the science upon which intelligent decisions should be based.

SCHEDULE

Biogeochemical Cycles, Energy Flow and Water

Required Reading: Fishman 2011

9 January	Th	Introduction
14	T	Biogeochemical Cycles
16	Th	Energy Flow in Ecosystems
21	T	Biologically Important Characteristics of Water
23	Th	The Global Water Crisis
28	T	The Global Water Crisis, continued
30	Th	<i>Examination No. 1: Covers 9 – 28 January</i>

Global Climate Change

No Text

4 February	T	Global Climate, Past and Present
6	Th	Empirical Evidence of Change
11	T	Causes of Change

13	Th	Consequences of Change
18	T	Consequences of Change, continued <i>Deadline for approval of 1st paper title/topic</i>

Biodiversity and Invasive Species

Required Reading: Stolzenburg 2008

20	Th	Ecological Communities: Species Interactions
25	T	Ecosystem Services
27	Th	Threats to Biodiversity
4 March	T	Invasive Species
6	Th	Invasive Species, continued
11	T	<i>Examination No. 2: Covers 4 February – 6 March</i>

Emerging Infectious Diseases (EID's)

Required Reading: Preston 1994

13	Th	Video: Ebola – The Plague Fighters (NOVA), <i>1st paper due</i>
25	T	What are EID's
27	Th	EID's of Particular Importance to Humans
1 April	T	Links Between EID's and Climate Change
3	Th	Links Between EID's and Biodiversity

Populations

No Text

8	T	Characteristics of Populations <i>Deadline for approval of 2nd paper title/topic</i>
10	Th	Population Growth and Regulation
15	T	Human Population Growth
17	Th	Consequences of Human Overpopulation
22	T	Consequences of Human Overpopulation, continued; <i>2nd paper due</i>

Course Summary

24	Th	Summary Discussion
5 May	M	<i>Examination No. 3: Covers 13 – 24 March</i>

Course Format: Each module of the course will consist of lectures and discussion of basic ecological concepts and implications for humans. The lectures and discussion will be supported by readings from the course texts and/or material distributed in class. For each module a glossary of terms will be provided.

Examinations: The examinations will cover only material indicated by the dates that appear in the schedule and will be largely short-answer essay in nature. Examination 1 will be worth a maximum of 25 points, and Examinations 2 and 3 will each be worthy a maximum of 50 points each. Copies of past examinations will not be distributed, but a study guide (review questions) will be distributed prior to each exam.

Papers: Two short papers are required in this course. You may choose topics related to any of those discussed in the course but your topic must be approved by the instructor (see syllabus above). The papers must be no less than five pages and no more than seven pages in length (not counting literature citations, and any figures and/or tables), and must be typed, double spaced, and in 11 or 12 point font. A minimum of six sources must be cited, and no more than 1/3 of these may be internet sources. One copy of each paper must be presented to the instructor on or before the due date, as an email attachment in Word. Each paper will account for a maximum of 25 points in the calculation of your final grade. Formatting details will be discussed in class and printed guidelines for papers will be distributed.

Take-home Exercises: There will be a web-based take-home exercise associated with each of the five modules. These exercises will be due at the time announced in class. Each exercise should take no more than 30 minutes to complete and each will account for 5 points toward the final grade. Because the exercises will be the basis for discussion on the day following the day they are due, no late exercises will be accepted.

Attendance: At the end of each class except the first and days on which an exam is scheduled, you will turn in a form that asks a) what you found new and/or most interesting about the lecture or discussion, and b) what questions, if any, you have about the material presented. It's assumed that everyone will have to miss at least one class session (so few, if any, will receive full points for attendance). There are no excused absences. If you are in class and turn in the attendance form, you will receive one point for that day (total possible points = 26). If not, you won't, no matter why you had to be absent.

Discussion: After the last class session, you will be assigned a numerical grade for your participation in discussions. Possible points are 0, 6, 12, 18 and 24. This is obviously subjective, but it is definitely worth getting involved in the discussions since 24 points is ~10% of your grade. Being "shy" is not an excuse, nor is the fact that you may have no background in biology other than a year of general biology. You will have an opinion, and this is your opportunity to express it. Do not be intimidated by those in the class who have a more extensive background in biology than you. Those who have little background in biology, and those who have more, often bring different, and valuable, perspectives to the discussions.

Grades and Grading: The total number of points possible will be 125 (exams) + 50 (term papers) + 25 (take-home exercises) + 25 (attendance) + 24 (discussion participation) = 249. Course grades will depend on the class distribution of total points, except that if your total points amount to 233 (~93%) or above of the total possible of 250, you are guaranteed a grade of A, and if your total points are 125 (~50%) or below, you are guaranteed an F.

Office Hours: The instructor does not have regularly scheduled office hours. Dr. Echernacht will, however, schedule meetings by appointment at a time convenient to the student. To arrange an appointment, see him in class or contact him by email (echterna@utk.edu).

Disabilities: If you need course adaptations or accommodations because of a documented disability, or if you have emergency information to share, please contact the Office of Disability Services. This will ensure that you are properly registered for services. Campus location: 2227 Dunford Hall. Phone: 865-974-6087. E-mail: ods@utk.edu. Website: <http://ods.utk.edu>.