Ecology Syllabus
Bio 366, Spring 2009

Stuart R. Borrett

Course Description and Goals

BIO 366 introduces the fundamental principles of ecological science and is one of the five core courses of the biology and marine biology B.S. at UNCW.

Through your experiences in BIO 366, you will have the opportunity to achieve the following **course goals**:

- Develop a "Sense of Wonder" (R. Carson) for the natural world;
- Understand the principles of ecological science and their applications;
- Use and interpret data to evaluate ecological hypotheses;
- Develop your critical thinking, analytical, and quantitative skills;
- Communicate ecological knowledge in written form;
- Practice professional behavior; and
- Become more effective, self-assessing, and self-directed learners.

What are your personal goals for this course?

- What do you want to know and be able to do by the end of this course?
- Do you feel prepared to achieve these goals?
- How will you attempt to achieve these goals?

Faculty Goals

My goals for this course are best stated by Ebert–May and Tsao (2007) as follows:

- As a facilitator I will encourage and create a learning environment in which all students are actively engaged in the process of scientific thought and reasoning.
- I will guide your development toward higher-order thinking and reasoning skills so you can successfully explore and demonstrate achievement of each of the goals above.

Course Time and Location

This class is scheduled to meet from *5:00 pm–6:15 pm* on *Tuesdays and Thursdays* in Dobo 134.

Contact Information

Stuart R. Borrett

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Office Hours:	Tuesdays, 1:30–4:30 pm, or by appointment

* I will respond to email as soon as possible, but please allow 24 hours for a response. If you require a faster response you may call my office phone. Also, please include *bio366* in the subject line. Failure to do so may result in substantially longer response times.

Materials and Readings

For this course you will need a TurningPoint audience *ResponseCard RF Keypad*, which are available from the bookstore ($40 new; $30 used). This tool will be an essential component of our class meetings as we will use them for polling and daily quizzes that are part of your course participation. Please email me (borretts@uncw.edu) your ResponseCard ID number by Wednesday January 14, 2009 as this will allow me to record your individual responses. We will use this audience response system in class on January 15th.

Our primary textbook for this course is Smith and Smith's **Elements of Ecology** (2006, 6^{th} Ed.). At the book store this is $124 new or $93 used, but from Amazon.com it is $97.10 new and the used books range from $7.80 to $88.16. Notice that the publisher has released a 7th edition of this book. We will not be using the 7th edition largely so that you can purchase used textbooks thereby reducing the cost of the course. I have also put a copy of the textbook on reserve in the library.

Additional readings for the course will be made available electronically through the course website at http://people.uncw.edu/borretts/teaching.html.

About the Course

In class meetings there will be lectures, readings, story-telling, student presentations, discussions, problem–solving, and more. I expect you to work cooperatively in our meetings as well as study together outside of class. I will strive to make the class as active and cooperative as possible. Through this process, we will uncover much about ecology, earth system science, and biological science.

I expected you to read assignments *ahead* of the class meeting scheduled to address the topic. In class, we will often discuss only parts of a chapter or advanced topics that build upon the reading. Thus, we may not review all of the reading in class, but you remain responsible for this material for quizzes and exams. If you don't read prior to class and laboratory you should not be surprised if you become lost during the discussions and activities. This is your course and I expect you to accept responsibility for your own learning.

Schedule and Assignments

Mtg#	Day	Date	Topic	Readings*
I. Introduction				
1	R	8-Jan	Introductions, Biosphere and Diversity of Life	
2	T	13-Jan	Nature of Ecology	Ch 1, syllabus
3	R	15-Jan	Evolution and Adaptation	Ch 2
II. Organisms and their Physical–Chemical Environment				
4	T	20-Jan	Niche and Climate	Ch 3; Begon et al. pp 30-31 and pp. 86-88.
5	R	22-Jan	Aquatic Environments and Organismal Adaptations	Ch 4
6	T	27-Jan	Terrestrial Environments and Organismal Adaptations	Ch 5
7	R	29-Jan	Biomes and Biogeography	Ch 23 (sections 23.1, 23.4, 23.6); Ch 24 Intro
8	T	3-Feb	Nutrient Cycles :: Macro Nutrients (CHONPS) :: Carbon	Beedlow et al. 2004; Ch 22 pp 474–483
9	R	5-Feb	Nutrient Cycles :: Macro Nutrients (CHONPS)	Ch 22
10	T	10-Feb	**EXAM I**	
11	R	12-Feb	Life History Patterns	Ch 8
III. Populations and Interactions				
12	T	17-Feb	Properties and Growth	Ch 9 and 10
13	R	19-Feb	Regulation and Intraspecific Competition	Ch 11
14	T	24-Feb	Interspecific Competition	Ch 13
15	R	26-Feb	Predation	Ch 14
16	T	3-Mar	Parasitism, Mutualisms, Symbioses, Coevolution	Ch 15
17	R	5-Mar	TBD** : Catch-up or topic based on class interest	
	T	10-Mar	Spring Break :: no class	
	R	12-Mar	Spring Break :: no class	
IV. Communities				
18	T	17-Mar	Community Attributes and Structure	Ch 16
19	R	19-Mar	Food Webs	TBD
20	T	24-Mar	**EXAM II**	
21	R	26-Mar	Community Structure	Ch 17
22	T	31-Mar	Community Dynamics and Succession	Ch 18
V. Ecosystems				
23	R	2-Apr	Energetics and Organization	Ch 20
24	T	7-Apr	Energetics and Organization	Ch 20
	R	9-Apr	Easter Holiday :: no class	
25	T	14-Apr	Decomposition	Ch 21
26	R	16-Apr	TBD : Catch-up or special topic based on class interest	
27	T	21-Apr	TBD : Catch-up or special topic based on class interest	
28	R	23-Apr	Summary / Review	
VI. Final Exam				
29	T	5-May	**EXAM III** (7–10 pm)	
		9-May	Commencement	

* Readings are to be completed by the date assigned.

** TBD means To Be Determined

Evaluation

This course is built around three evaluation elements—Participation, Species Resume, and Exams—that are weighted as shown in Table 1.

Participation

The first element is class participation. As this will be a highly active class, participation is a significant part of your evaluation. It is also part of professional behavior. I will assess your participation through periodic in-class quizzes and assignments, many of which will be accomplished with the TurningPoint audience response system (ARS).

Each day's participation will be equally weighted throughout the semester, regardless of the number of questions I ask or assignments. I expect there to be 24 participation days (excluding exam days). With the ARS I will ask two types of questions. Some questions will have correct answers. These questions will be drawn from lecture material and readings. You will receive 1 participation point for responding and 1 additional point for answering correctly. The second type of questions will not have a correct answer. For these, you will receive 1 point for responding.

I strongly support the Academic Honor Code and will not tolerate academic dishonesty of any type. With respect to the ARS, I will collect the students' response cards for anyone found cheating. The students involved will receive a 0 on their course participation. I will return the response cards at the end of the semester. Simply avoid this temptation.

Species Resume

The second element is a written assignment in which you will create a resume for a species of your choice. Your *Species Resume* will be due in class on *March 5th, 2009*. I expect to provide you with more details about this assignment in class on January 20, 2007. I will not except late papers.

Exams

Exams comprise the third course element. There are three exams in this class, which will all be comprehensive. My expectation is that you will be present for all three exams, as they are teaching tools as well as assessment tools. If you have a planned absence that is part of official university business, please let me know immediately so that we can schedule a time for you to take the exam early. Otherwise, *there will be no make up exams*.

If life gets in the way and you must miss one exam, you may write a 10 page research paper (not including figures, tables, or references) on a topic to be chosen with me. I will then substitute your grade on the paper for the exam you missed.

Extra Credit

Ecological science is relevant to your everyday life—not just a requirement for your degree. If you look in current newspapers, magazines, comics, or podcasts, you will find ecological ideas everywhere. To encourage you to look, I am offering you extra credit.

Before each exam, you may turn in one copy of a current newspaper article, magazine article, comic, or podcast (i.e., Andy Wood's commentaries on NPR) for 2% extra credit on the exam. To receive credit for the item, you must provide a hard copy or a hyperlink to the item along with a complete citation (Ecology journal format), the item must have been published for the first time in 2009, and it must be clearly relevant to topics we discuss in class.

Table 1: Bio 366 Evaluation

Course Component	Percent Contribution
Participation, Homework, Quizzes*	10%
Species Resume	10%
Exam 1	20%
Exam 2	25%
Exam 3 (Final)	35%
Total	100%

Your final course grade will be determined following the scheme in Table 2.

Table 2: Course Grading Scheme

% of Course Points	Grade
> 93	A
90–93	A-
88–89	B+
83–87	B
80–82	B-
78–79	C+
73–77	C
70–72	C-
68–69	D+
63–67	D
60–62	D-
< 60	F

University Policies of Concern

Disabilities

If you are a person with a disability and anticipate needing accommodations of any type for this course, you must first notify Disability Services (Westside Hall #1033, 962.7555), provide the necessary documentation of the disability, and arrange for the appropriate authorized accommodations. Once these accommodations are approved, please identify yourself to me in order that we can implement these accommodations.

Violence and Harassment

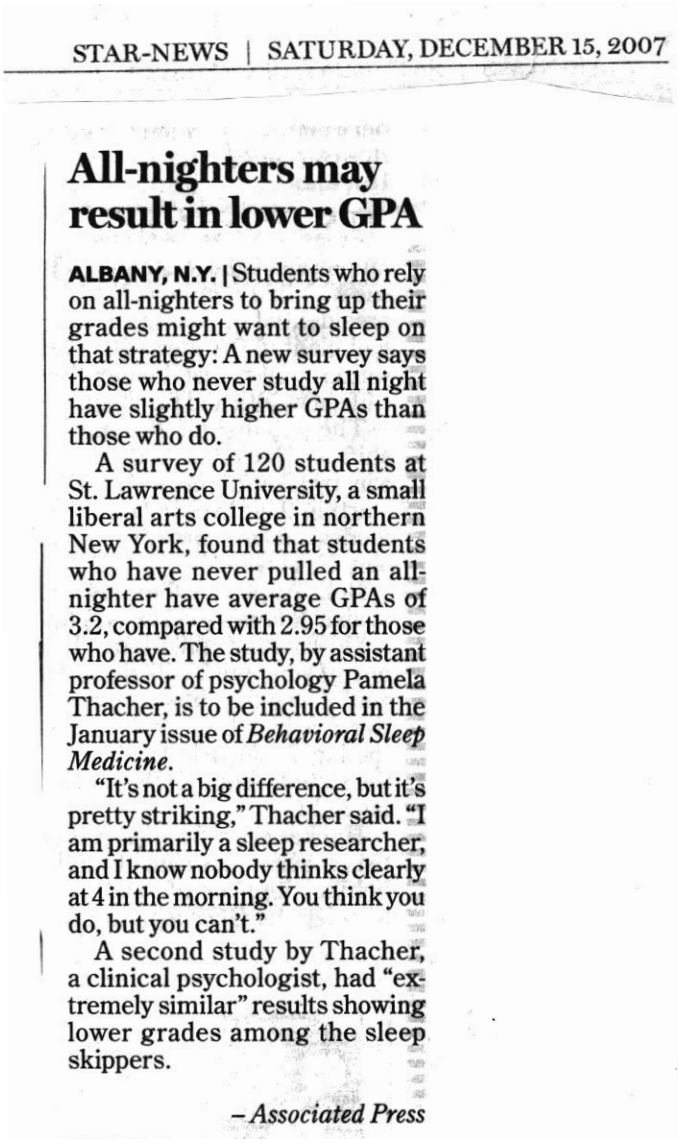
UNCW practices a zero-tolerance policy for violence and harassment of any kind. For emergencies, contact UNCW CARE at 910.962.2273, Campus Police at 910.962.3184, or the Wilmington Police at 911. For University or community resources visit http://www.uncw.edu/wrc/crisis.html.

Academic Honor Code

The Department of Biology and Marine Biology and I strongly support the Academic Honor Code as stated in the "Student Handbook and Code of Student Life," and we will not tolerate academic

dishonesty of any type.

Parting Thought



STAR-NEWS | SATURDAY, DECEMBER 15, 2007

All-nighters may result in lower GPA

ALBANY, N.Y. | Students who rely on all-nighters to bring up their grades might want to sleep on that strategy: A new survey says those who never study all night have slightly higher GPAs than those who do.

A survey of 120 students at St. Lawrence University, a small liberal arts college in northern New York, found that students who have never pulled an all-nighter have average GPAs of 3.2, compared with 2.95 for those who have. The study, by assistant professor of psychology Pamela Thacher, is to be included in the January issue of *Behavioral Sleep Medicine*.

"It's not a big difference, but it's pretty striking," Thacher said. "I am primarily a sleep researcher, and I know nobody thinks clearly at 4 in the morning. You think you do, but you can't."

A second study by Thacher, a clinical psychologist, had "extremely similar" results showing lower grades among the sleep skippers.

– Associated Press