Ecology Syllabus

Bio 366, Summer 2018

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;
- observe the integration of ecology, mathematics and statistics, and technology;
- 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

Section	Day & Time	Location
bio 366	M,T,W,R 8:00-10:05 pm	Friday Hall 1014

Contact Information

Stuart R. Borrett

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Office Hours:	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* and an informative subject title in the subject line of the email. Failure to do so may result in substantially longer response times.

This semester this course has one undergraduate teaching assistant, Ms. Sallie Mathis (sam9885@uncw.edu). She is a former student in this class, and will be managing the EcoPhoto Project, the Exam Preparation Activities, and helping us as needed.

Materials and Readings

Audience Response System (Clickers)

We will be using the TurningPoint audience response system in this course. The goal of using this technology is to make the large lecture course more interactive, and to make the learning opportunities more active and engaging. For this to work, you will need a current Turning Account and Subscription (https://account.turningtechnologies.com/account/) and a response device. You can learn more about this system as it works at UNCW at this website http://uncw.edu/clickers. The TurningPoint licenses and devices are available from the UNCW Bookstore. With the the TurningPoint Cloud system, you can download the response software to many web enabled devices (e.g., phones, tablets, and computers). Please see the websites listed for more details.

We will officially begin using these the Audience Response System (ARS) on Monday, June 21. Before that class, you will need to purchase your TurningPoint License, determine what device you will use for responding, and link your license to our class through the BlackBoard integration. For full credit, you will need to register the clicker before class on June 21.

Texts

Our primary textbook for this course is Smith and Smith's **Elements of Ecology** (2015, 9th Ed.). This text sells for $130.91 new at Amazon, and you can rent the books for $53.84. We will *not* need the electronic access code, so used books are fine. Previous editions are not identical, so do get the 9th edition.

There were be approximately one chapter of assigned reading for each lecture. My expectation is that you will read this chapter before lecture, so you will need regular access to the text.

Website

Additional readings and information for the course will be made available electronically through the course website at http://people.uncw.edu/borretts/teaching.html. You will need to choose the Ecology Lecture tab. Most PDFs will be password protected; **the password is bio366**.

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 the assigned reading 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.

Electronic Devices: Tools or Distractions? There are many possible electronic distractions inside our lecture hall including phones and the internet. There is an on-going debate in higher education as to whether phones, tablets, and computers should be banned from the classroom. While these can be useful learning tools, they can also be distractions from learning. For this course, I ask that you silence your phones and put them away, unless you are using this as your Audience Response Device. If you plan to use a laptop or tablet device during lecture, please sit on the right hand side of the room (facing the screen) and deffer from using these devices for anything other than class activities (e.g., taking notes). Those exhibiting disrespectful behavior (e.g., talking out of turn, using headphones) and not following these guidelines will be asked to leave the room.

Schedule and Assignments

The course schedule, class assignments, and other materials will be posted on the course website at http://people.uncw.edu/borretts/teaching.html. You will then have to select the tab for Ecology Lecture. Table. **??** shows an overview of the course plan.

Evaluation

This course is built around four evaluation elements — Participation and Homework, EcoPhoto Assignment, Exam Preparation Activities, and Exams. These elements are weighted as shown in Table 2.

Participation & Homework

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 (e.g., preparing for and

Table 1: Preliminary schedule for BIO 366.

Ecology Lecture

Week	Mtg#	Day	Date	Topic	Ecophoto	Exam Prep
1	1	W	16-May	Nature of Ecology & Earth System		
	2	R	17	Individual Organisms: Niches, Conditions, and Resources	Registration	
2	3	M	21	Physiological Ecology of Plants & Animals	Image 1	
	4	T	22	Ecological Populations: Properties & Growth		
	5	W	23	Populations Continued & Life History Patterns		MC1
	6	R	24	Exam 1	Comment 1	
3		M	28	Memorial Day Holiday		
	7	T	29	Intraspeciifc Competition	Image 2	
	8	W	30	Interspecific Competiiton		
	9	R	31	Predation		
4	10	M	4-Jun	Symbiosis, Mutualism, & Parasitism	Image 3	
	11	T	5	Community Structure		
	12	W	6	Community Dynamics		MC1
	13	R	7	Exam 2		
5	14	M	11	Ecosystem Organization and Energetics	Image 4	
	15	T	12	Decomposition and Nutrient Cycling		
	16	W	13	Biogeochemical Cycling		
	17	R	14	Ecological Address & Review	Commment 2 & Reflection	Notecard
		F	15	Reading Day (no classes)		
6	18	M	16	Final Exam (8am -11 am)		

attending classes). I will assess your participation and assigned homework through periodic in-class quizzes and assignments, most 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 13 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 2 points for responding. At the end of the semester, I will drop your three lowest participation daily scores. This implies that each day's participation score is worth approximately 1% of your course grade.

I will post daily participation scores to the course website soon after class. You will have until the next class period to review these scores for accuracy and bring any problems to my attention. After this time period, the participation scores will be finalized and not revised.

Bringing your clicker to class on time is an expectation for this course and is part of practicing professional behavior. If you forget your clicker, you will receive a zero for the ARS in class participation that day.

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.

EcoPhoto Project

Ecology is happening all around us – we just need to learn to see it. This assignment is designed to get you outside looking for it. The core of the assignment will be to post at least 4 photographs or short videos to a class Flickr group https://www.flickr.com/groups/uncw-ecology/ and identify the ecology observed in the photo description. A full description of the assignment directions and requirements are posted on the class website (EcoPhoto Project Description). Note that in this project you will experience an integration of learning about the science of ecology and technology (camera, software, websites). This is just one way the **S**cience of ecology is integrated with other elements of **STEM**.

Exam Preparation Activities

Before each of the exams, you will complete an exam preparation exercise.

One of the best ways to study for an exam is to write practice questions for yourself. To encourage this behavior, by the lecture before each of the first two exams you are required to submit a single multiple choice question that you think I might ask on the exam. The class list of questions will be posted as a study guide and excellent questions (or derivatives of them) may be used on the exam. A full description of this assignment is posted on the class website (Multiple Choice Question Assignment). Please follow the instructions carefully as submissions that do not will not be accepted and you will earn a zero on the assignment.

The third and final exam preparation exercise will be to create a 3 x 5 inch exam note card that you can use on the exam. You may place any notes you think will be useful for you on this note card (front and back). Your name must be clearly legible in the top-left corner of the note card. To be used during the exam, you must turn your note card in to the instructor during the last class. Note cards not of the required size and not turned in on-time will not be accepted or used during the final exam.

Exams

Exams comprise the third course element. There are three exams in this class. The first two will be comprehensive in the sense that the information in lecture will build upon itself, but these exams will focus on the material since the last exam. The final exam will have two parts. The first half will focus on material since the last exam, and the second half will be explicitly comprehensive of the entire semester. My expectation is that you will be present for all of the 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 miss one exam, you may write a 15 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.

Your final course grade will be determined following the scheme in Table 3.

Table 2: Bio 366 Evaluation

Course Component	Percent Contribution
Participation, Homework, Quizzes*	10%
EcoPhoto Project	10%
Exam Preparation Activities (set of 3)	5%
Exam I	20%
Exam II	20%
Exam III (Final)	35%
Total	100%

Table 3: Course Grading Scheme

% of Course Points	Grade
≥ 93	A
90–92	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 recognized disability or special need, and anticipate needing accommodations of any type for this course, you must first notify Disability Services (DePaolo Hall, http://uncw.edu/disability/about/index.html), 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.

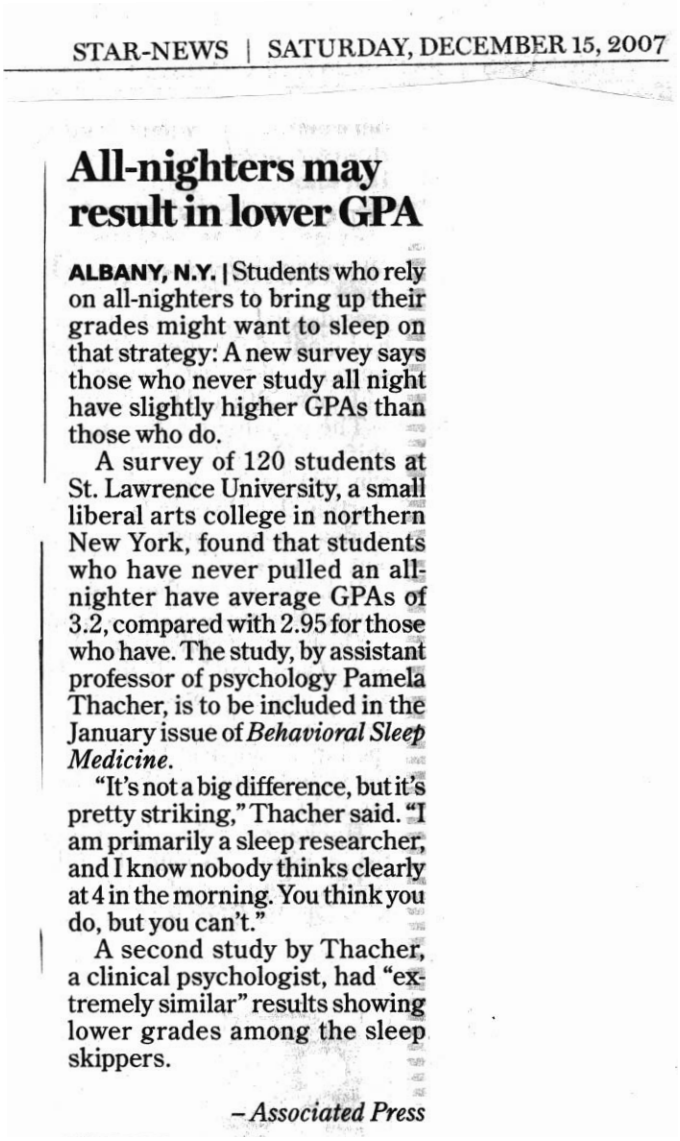
Violence and Harassment

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.

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