

Ecology, Evolution, and Heredity- Fall 2005
Bio 101, Section 1: MWF 10:00-11:05 (Faylor Hall)

Instructor: Dr. Alissa Packer
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Office hours: 9-10 MW,
1:30-2:30 W and by appointment

Website: connect to blackboard through <http://blackboard.susqu.edu> or
<http://www.susqu.edu/facstaff/p/packer/default.htm>

Laboratory Instructors:

Monday	1-4pm	Fisher 201	Tom Peeler	peelert@susqu.edu
Thursday	1-4pm	Fisher 201	Jen Jones	jonesjennifer@susqu.edu
Friday	1-4pm	Fisher 201	Helen Petre	helenpetre@yahoo.com

Name, phone number, and email address of two classmates:

Required textbook for lecture:

• *Biology*, 7th edition. [Campbell, N.A. and Reece, J.B. 2002. *Biology*, 7th edition. Benjamin Cummings, New York.]

Additional materials required/recommended for lab:

- Photocopies of material to be used in lab (required). Please bring \$5 (cash only) to the first lab.
- Three-ring, 1 ½- 2 inch, binder to hold lab handouts (strongly recommended)

Course description:

Biology 101. The initial course for students planning to major in biology. Explores the nature of scientific investigation and the impact of human activity on the biological world by examining such topics as ecology, evolution, genetics and cell biology. *4 SH. 3 lecture hours. 3 laboratory hours. Core: Perspectives on the World, Science and Technology.*

The material you learn in Ecology, Evolution and Heredity will prepare you to make informed decisions about issues related to science, technology, health and the environment. For majors, this course will provide a foundation for all future classes in biology.

Course goals and philosophy:

This course will introduce you to key concepts in the disciplines of ecology & genetics, within the larger framework of evolutionary biology. I will work with you to achieve the following goals:

- To better understand the relevance of biology to your daily lives
- To become familiar with the scientific method as a means of creating knowledge

- To gain experience practicing the scientific method by designing experiments, collecting data, and interpreting the results
- To develop important professional skills, including oral presentations, written scientific papers, and peer review of research proposals

We will maximize the number of people who achieve these goals by working together to create a supportive learning environment. Asking questions is a key element of learning. I have asked you to write down the names of two classmates for a few reasons. First, you will be more likely to ask questions, both of me and of one another, if you know and feel comfortable with your peers. Second, we will function as a community of learners in this classroom. We all have something to contribute to the experience. Remember that you will learn as much, if not more, from each other as you will from me. Lastly, because I cannot be available to answer your questions 24 hours a day (particularly at midnight the night before the exam), it is important that you use each other as a resource for information and clarification. It is your responsibility to have your questions answered.

Finally, I want to emphasize that you are ultimately responsible for the quality of your educational experience. Please keep this in mind over the course of the semester. I will introduce you some of fundamental concepts in the field, along with a clear rationale for *why* they are important. However, it is your responsibility to learn the material. I expect that you will all take an *active* role in the learning process.

Course structure:

Ecology, Evolution, and Heredity consists of both a lecture and laboratory component. The lecture component will be worth 60% of your grade and the lab component will be worth 40% of your grade. Because lectures will primarily emphasize concepts from the textbook, you should *read all assignments before attending class* so that you are familiar with the material. You will be expected to participate in class discussions and to collaborate in small groups during the lecture and laboratory periods.

Grading:

Lecture-

Exam #1	100
Exam #2	100
Final exam	100
Quizzes/other assignments	100
Total points-	400

Laboratory-

Termite paper (I)	25
Biodiversity questions (G)	20
Biodiversity proposal (G)	10
Biodiversity presentation (G)	25
Biodiversity paper (I)	100
Tree identification (G)	10
Plant/herbivore proposal (G)	10
Plant/herb. presentation (G)	25
Plant/herb. report (I)	100
Foraging proposal (G)	10
Foraging presentation (G)	25
Foraging questions (G)	15
Isopod proposal (G)	10
Peer evaluation (I)	25
Isopod poster (G)	100
Total points-	510

Attendance:

Reading the textbook CANNOT substitute for attending class. Class attendance is a crucial aspect of your educational experience. To emphasize the importance I place on attendance and to ensure that you also come to value the importance of attendance, I will be assessing attendance via *unannounced lecture quizzes*. No make-up quizzes will be given. Quizzes will be administered at either the beginning or end of lecture periods. Therefore it is important that you arrive to class on time and stay for its entirety. Those arriving to class late will not be given extra time to complete their quiz.

More on quizzes:

At least half of the lectures will begin or end with a five minute quiz. You will receive credit for completing the quiz, regardless of whether you have the correct answer. If you do not answer every question or fail to turn in a quiz you will receive ZERO points. Quiz questions will be the basis for exam questions and the answers will be discussed at the beginning of the following lecture.

What is the point of giving quizzes that are not graded for content?

- The quizzes force you to consider the information just presented and put it into your own words. This will help you to internalize the information before leaving class.
- The quizzes stress the most important things covered during a particular lecture thereby providing an organizational framework for your notes.
- By reading your responses, I can quickly assess your understanding of the material and recognize where you are having difficulty. This allows me to clarify any confusing points during the next class rather than on the exam.

Make-up examinations:

Students who expect to miss any classes or exams must notify me one week prior to the class to be missed. Make-up lecture exams will be given only for legitimate reasons as outlined by university regulations. Excused absences must be accompanied with written confirmation from a doctor or the Dean of Students. Anyone who fails to comply with these procedures will receive a zero for missed exams.

Missing Laboratories:

Missing one lab is equivalent to missing three lecture sessions. Each UNEXCUSED laboratory will constitute a 20% reduction in your overall lab grade. In addition, laboratory assignments will not be accepted for material covered during an unexcused absence. Therefore, you will receive a ZERO for any assignments that relate to a specific missed lab. If you require missing a laboratory for LEGITIMATE reasons, please let your laboratory instructor know as soon as possible so that other arrangements can be made.

Late assignments:

All assignments will be collected at the *beginning* of class on the due date (unless otherwise noted on the syllabus). Late assignments will be downgraded by 10% for each day late unless prior arrangements have been made.

Special considerations:

If you require special assistance or consideration to accommodate a condition that may affect your performance in this course, please inform me of your need at the beginning of the semester or at the time you become aware of your need for assistance. From that point forward, any reasonable and necessary accommodations will be implemented.

Policy on Academic Dishonesty

I consider academic dishonesty to be a very serious offense. A general description of the university policy on academic dishonesty can be found in the Student Handbook or at www.susqu.edu/campus_center/handbook/academic_honesty.pdf. I adhere to the University policy and therefore you should be familiar with it. Read the definition of plagiarism carefully and make sure that you fully understand its meaning. (Note: It would be *fair game for me to give a quiz on this information.*) **Sharing** your work with others is just as serious an offense as **copying** work from others. Every instance of academic dishonesty will be dealt with and reported as outlined in the handbook. When in doubt as to whether something is considered plagiarism, please come discuss your concerns with me before handing in your work. Note that I reserve the right to have all written assignments submitted in an electronic format so that I can check assignments for plagiarism against internet sources.

Below is a tentative schedule that is subject to change as the semester progresses. Attending every lecture is the best way to stay informed of changes to the syllabus. You are responsible for finding out about any information that you may have missed due to an absence.

Items due at the start of lab are indicated in **BOLD**. Other items will be completed in class and turned in that day.

Date	Lecture/Discussion topic	Textbook Reading (addition readings assigned in class)	Lab topic and assignment for week (I=individual, G=group; bolded items due at start of class)
8/29 M	Overview of syllabus Science in your daily lives		Exploring termite behavior
8/31 W	The process of science	Chapter 1	
9/2 F	More on the scientific process	Chapter 1	
9/5 M	Evolution as the unifying theme in biology	Chapter 1	Biodiv. lab I: Intro to expt. tools (Due: Termite paper- I & Biodiv. handout-G)

9/7 W	Evolution as the unifying theme in biology & Levels of biological organization	Chapter 1	
9/9 F	Meiosis and sexual life cycles	Chapter 13	
9/12 M	Meiosis and sexual life cycles	Chapter 13	Biodiv. lab II: Expt. design (<i>Due: Biodiversity proposals-G</i>)
9/14 W	Mendel and the gene idea	Chapter 14	
9/16 F	Mendel and the gene idea	Chapter 14	
9/19 M	Chromosomal basis of inheritance	Chapter 15	Biodiv. lab III: Data collection
9/21 W	Chromosomal basis of inheritance	Chapter 15	
9/23 F	Molecular basis of inheritance	Chapter 16	
9/26 M	From gene to protein	Chapter 17 pp. 309-314	Biodiv. lab IV: Collecting/ analyzing data
9/28 W	Organization and control of eukaryotic genomes	Chapter 19 pp. 359-369	
9/30 F	DNA technology and genomics	Ch. 20 pp. 384-388	
10/3 M	EXAM 1		Plant/herbivore lab I: Plant ID (<i>Due: Biodiv. presentations-G & Plant ID handout-G</i>)
10/5 W	Descent with modification: A Darwinian view of life	Chapter 22	
10/7 F	Descent with modification: A Darwinian view of life	Chapter 22	
10/10 M	Evolution of populations	Chapter 23	Plant/herbivore lab II: Expt. design (<i>Due: Biodiv. reports-I & Plant proposal-G</i>)
10/12 W	Evolution of populations	Chapter 23	
10/14 F	The origin of species	Chapter 24	

10/17 M	<i>Fall Break</i>		
10/19 W	The origin of species	Chapter 24	Plant/herbivore lab III: Data collection
10/21 F	Phylogeny and systematics	Chapter 25	
10/24 M	Early Earth and origin of life	Chapter 26	
10/26 W	Prokaryotic diversity & Eukaryotic origin	Chapter 27 Chapter 28 pp. 549-551	Foraging strategies lab I: Intro (<i>Due: Plant/herbivore presentations-G & Foraging proposal-G</i>)
10/28 F	Plant diversity I: Plants colonized land	Chapter 29	
10/31 M	Plant diversity II: Evolution of seed plants	Chapter 30	
11/2 W	Introduction to animal evolution	Chapter 32	Foraging strategies lab II: Data collection (<i>Due: Plant/herbivore reports-I</i>)
11/4 F	EXAM II		
11/7 M	Basics of respiration and photosynthesis		
11/9 W	Introduction to ecology and the biosphere	Chapter 50	(<i>Due: Foraging presentation-G & Foraging questions-G</i>)
11/11 F	Behavioral biology	Chapter 51	
11/14 M	Population ecology	Chapter 52	
11/16 W	Population ecology	Chapter 52	Isopod lab I: Intro (<i>Due: Isopod proposals-G</i>)
11/18 F	Population ecology	Chapter 52	
11/21 M	Community ecology	Chapter 53	
11/23 W	<i>Thanksgiving Break</i>		
11/25 F	<i>Thanksgiving Break</i>		

11/28 M	Community ecology	Chapter 53	Isopod lab II: Data collection
11/30 W	Community ecology	Chapter 53	
12/2 F	Ecosystems	Chapter 54	
12/5 M	Ecosystems	Chapter 54	Isopod poster symposium (<i>Due: Isopod poster-G & Peer evaluations-I</i>)
12/7 W	Conservation biology	Chapter 55 pp. 1209-1214	
12/9 F	Tying it all together...		
	FINAL EXAM		