

Lecture syllabus for General Biology I

Pacific University, Spring 2015

Professor Stacey Halpern

Lecture: MWF 11:45 am - 12:50 pm, Price 202

Lab: Mon 2:15 - 5:15 pm (Section 10) or Tues 11:30 am - 2:30 pm (Section 11), Strain 219

Welcome to General Biology I! This course is dedicated to studying the incredible diversity of life on Earth. As a biologist, there are lots of reasons to study biodiversity. Comparing widely divergent organisms can help identify common solutions to typical problems of life, including ones relevant to important human problems like health and conservation. Studying biodiversity also provides important clues about how organisms acquire new traits, which can help us solve critical problems such as antibiotic resistance. On a personal level, understanding the biological “stories” of organisms can provide a new and exciting window into the world around us.

In this course, we’ll explore the origin of biological diversity, the structure and function of organisms that allows them to live in various environments, and ecological interactions between organisms and their environment. In addition, the laboratory component of the class (which is integrated with lecture) will provide you with opportunities to acquire basic lab skills and to learn how scientists search for answers to questions.

Catalog course description

A survey of ecology, evolution, the diversity of life on earth, and the structure of plants and animals. Laboratory is integrated with lecture. 4 credit hours.

How to reach me

- Office location: **Strain 209**
- Office hours: **Tues 10:30 – 11:00am, Wed 2:15 – 3 pm, Fri 1 – 1:45 pm, or by appointment.** If these times don’t work for you, schedule another time with me via e-mail.
- e-mail: **shalpern@pacificu.edu**. This is the most reliable way to reach me.
- Telephone: **503-352-3109** (extension 3109 if you’re calling from campus). I don’t check voicemail as often as e-mail.

How I will reach you

I will use your Pacific e-mail address to send out occasional but important information. Plan to check this account regularly or to forward messages to an account you use. There is also a Moodle site for the class (all 5 sections) and the lab, which you should visit regularly for information about class objectives, assignments, exams, and other important information.

My approach to teaching General Biology

Research has shown that students learn better when they have to actively apply information than when they just listen to a long lecture. Thus, I will not stand in front of you and simply talk for 1 hour each class. Instead, I will use clicker questions (multiple choice questions you answer in class), Socratic lecturing (where I pause to have you answer a question, usually individually then with a neighbor), case studies, short in-class discussions, and practice exam questions completed in class to give you opportunities to work with information (and identify where you are confused). Also, I continually implement new strategies for this course to help make it a more active learning experience for you. I welcome feedback about what is working for you, and changes that I could make to help you learn.

These activities work best when everyone takes them seriously and remain on task. Thus, I ask you to commit to do so for this class.

Required Materials:

1. Textbook: Campbell *et al.* 2008. *Biology* (9th ed.)
An important reference that has good practice questions at the end of chapters and on-line. Use it often!
2. Laboratory Manual for Biology 202.
Available in lab for \$3. Please bring cash or a check made out to Pacific University to the first lab.
4. 3 ring binder for lab manual, lab reports, and other lab handouts (1" is fine)

Note: There will be lots of in-class handouts as well—you may want another small 3-ring binder for them.

Expectations of Students

I expect students enrolled in this course are adults who take responsibility for their education. I will work hard to facilitate your learning through lecture, class activities, and assignments, but ultimately only you can actually learn the material through focused time and effort. ***As a reminder, Pacific guidelines state that students should put in 2-3 hours outside of class for every credit; that means you should expect to work on this course 8-12 hours/week outside of class time.***

For each class and lab, I expect you to come prepared, to arrive on time; to actively and cheerfully participate in lecture and laboratory discussions; to complete assigned readings and projects by the specified date and time; and to treat each other and the instructor with respect. In turn, you can expect the same from me. If I believe that a student's behavior or attitude is negatively affecting the learning environment for other students then I may drop him/her from the course.

If you know you will miss class (e.g., for an approved, scheduled event), please let me know *ahead of time*. College notices are not sufficient—you must discuss these absences with me before hand. If you miss class, do not ask, "Did I miss anything important?" Instead, talk to other students in the class to get copies of notes. After you've spoken with a student, talk to me if you have questions.

As part of respectful behavior, ***please make sure that your cell phone is turned off at all times during class and lab!*** Also, do not leave class to answer a cell phone call, and do not text during class. If you have a valid reason to have your cell phone on—e.g., a family emergency in progress—please let me know.

Academic Integrity:

I expect students to know and adhere to the university's "Code of Academic Conduct" policies; please carefully read them in the College of Arts and Sciences catalog. The bottom line: you must do your own work on all exams and class assignments including lab reports and pre-lab assignments. Academic honesty does not preclude discussing ideas with other students, working together on homework, studying together for exams, or providing feedback on lab write-ups **as long as all text is in your own words.**

Pacific University has no tolerance policy for academic misconduct/dishonesty. All cases of misconduct and dishonesty be reported to the Associate Dean for Student Academic Affairs. Sanctions that may be imposed for such misconduct range from an "F" for the assignment, an "F" for the course, and suspension or dismissal from the university. Forms of academic misconduct include but are not limited to plagiarism, fabrication, cheating, tampering with grades, forging signatures, and using electronic information resources in violation of acceptable use policies.

Please talk to me before you turn in assignments if you have a question about what constitutes dishonesty. As a reminder, here are some examples of academic dishonesty and plagiarism:

- Copying the work of another student on an exam or a written assignment, including labs;
- Having notes or crib sheets accessible during exams or quizzes, even if you don't use them;
- Cutting and pasting phrases or sentences from textbooks, articles, or websites;
- Re-using an assignment from another class, including other intro bio courses;
- Insufficient attribution for ideas and information from published resources.

Grading and Assessments

I will assess your learning using exams, quizzes, class assignments, and lab assignments, as follows:

Lecture exams	450 pts
3 midterms (100 pts. each)	
final exam (150 points, 100 of which are cumulative)	
Moodle homework & quizzes	85 pts
<u>Lab assignments</u>	<u>165 pts</u>
TOTAL	700 pts.

Important note: You must save all returned assignments, quizzes, and exams until the end of the course. If I request to see a graded assignment or exam again and you cannot return it to me, you will receive a zero for that assignment or exam.

Lecture Exams:

Exams will cover material from lecture. Each exam will include multiple choice, short answer, and short essay questions. I may ask questions about graphs or figures, especially ones we discuss in class. Exams may include new case studies that require you to apply concepts and analyze data. Topics from the book not mentioned in class or part of homework will not appear on exams unless I tell you otherwise. Misspelled terms will lose points.

Make-up exam policy: Make-up exams are only allowed for students who are hospitalized, facing a dire family emergency (e.g., death in the family), or attending sanctioned University activities (events for sports, clubs, etc.). For sanctioned activities, you must make arrangements with me at least 3 days before the exam to be accommodated. If you miss a midterm for any reason except these, there will not be a make-up exam and your grade on the 100 point cumulative section of the final exam will substitute for that zero. If you don't miss an exam, your score on the 100 point cumulative will replace your lowest grade on a 100 point exam if your cumulative score is higher than your lowest exam score.

Here are some examples of how the cumulative final works

	Midterm 1	Midterm 2	Midterm 3	Cum Final	Average
Original exam scores, example 1	69	75	82	85	77.25
Exam scores after replacement, ex. 1 <i>Exam 1 grade is replaced by cum final grade</i>	85	75	82	80	81.75
Original exam scores, example 2	85	89	83	80	84.25
Exam scores after replacement, ex. 2 <i>no replacement because cum final is lower</i>	85	89	83	80	84.25

Exam Date	Points	Material covered (subject to slight revision)
Friday, February 20	100	Evolution, universal phylogeny
Wednesday, March 18	100	Eukaryote origin, protists & plants
Friday, April 24	100	Fungi and animals
Saturday, May 9, 8:30 – 11 am	50 100	Ecology Cumulative final exam

Homework & quizzes

You will have homework nearly daily for this class. The types of homework I assign are based on research about how to help students learn (and reduce failure rates) in introductory biology courses. They will primarily involve Moodle quizzes. Read the text and/or watch a short video lecture I post, then complete an on-line quiz in Moodle.

These quizzes are open-book, open-note, and you may collaborate with classmates. Expect them every day, though occasionally we'll skip a day or replace the Moodle quiz with a different activity.

Homework is worth 85 points (12% of your grade). Each assignment will be worth 3 points, and I will drop your lowest 2 scores. Your final grade for this section will be based on the percentage of points you earn (there may be somewhat more or less than 85 points possible), so pay attention to your percentage (reported in Moodle), not your numerical total.

Lab assignments

You will complete a pre-lab assignment and a lab write-up for each lab this semester. You will receive these assignments and instructions about how to complete them in your lab manual and during lab.

Suggestions for how to do the reading for class

- Readings provide an introduction to the subjects we discuss in class. You should expect that some class material will not be covered in the text at all, and that some topics in the text will not be discussed in class. However, even if specific material from the text is not directly on the test, I have assigned it because I believe it provides useful background information that will help you understand ideas and information from class.
- Before class. I will use Moodle quizzes and assignments to guide your reading of the text before class—focus on the material associated with the quiz.
- After class, carefully (re)read the text. Focus on the material we discuss in class, and make sure you understand well any figures from class. When you read carefully after class, I *strongly* recommend taking notes rather than highlighting; ideally, you should integrate text notes with class notes.
- For exams, you will be responsible for material covered in on-line videos, Moodle quizzes, case-studies, in-class activities, and class lectures. For videos and class lectures, good notes are very important. If I expect you to know text material not covered in class, I will tell you explicitly the part of the text to study on your own.
- Some study tools for exams include:
 - Objectives—handed out & posted to the course Moodle site. I use these objectives when writing exams (sometimes word for word!); thus I *strongly* encourage you to write-out answers to these questions to practice for the exam.
 - Concept checks and chapter multiple choice questions—answer them in a test-like setting to practice for exams. For each exam, I will post a list of appropriate questions to Moodle.

Grading

Your grade will be calculated from a total of 700 points using the following scheme. Grades are neither curved nor rounded in this course.

Final grade	Percentage	Final grade	Percentage	Final grade	Percentage
A	93% and higher	B-	80-82%	D+	67-69%
A-	90-92%	C+	77-79%	D	63-66%
B+	87-89%	C	73-76%	D-	60-62%
B	83-86%	C-	70-72%	F	less than 60%

NOTE: A C- or better is a prerequisite for Biol 204 and Human Anatomy.

College resources

There are many free services available at Pacific to help you succeed in your courses. I encourage you to take advantage of them! Some of these services are listed below.

Tutoring and Learning Center The TLC is located in Scott Hall 127. The center focuses on delivering one-on-one and group tutoring services for math and science courses and writing skills in all subjects. They do not yet provide biology tutoring, but can help with general science questions. Day and evening hours; walk-ins welcome! Schedule and more information is posted on this website: <http://www.pacificu.edu/tutor/index.cfm>.

Student Counseling Center The counseling center offers individual counseling, crisis services, referrals, and workshops. They also have information on-line or in their office about issues such as stress management and sleep. 503-352-2191, Mon-Fri 9 a.m. – 5 p.m., <http://www.pacificu.edu/studentlife/counselingcenter/>

Reasonable accommodations for students with disabilities

If you have documented challenges that will impede your learning in any way, please contact our LSS office in Scott Hall (ext.2107). The Director will meet with students, review the documentation of their disabilities, and discuss the services that Pacific offers and any appropriate ADA accommodations for specific courses. To receive accommodation, you must make arrangements with me at least 1 week prior to the due date or exam.

This page left intentionally blank

Schedule of Assigned Readings and Lecture Topics

*Note: This schedule is **subject to change** (especially the timing of topics and reading assignments) based on student questions, my assessment of student learning, etc. **Changes will be announced in class or on Moodle.** Review my suggestions for how to approach reading assignments on p. 4 of the syllabus.*

Below, I point to specific sections of the text in the reading assignments. Sometimes I assign a full chapter—in those cases, focus on material we cover in class. Sometimes I assign concepts (these occur in the chapter of the first number—e.g., Concept 1.2 is in Chapter 1). Sometimes I assign specific figures or pages—this means read the complete sections on that page, but not ones that start on or go over onto another page.

Week	Date	Topics & class activities	Reading assignment
1	26 Jan	Introduction to course	p. 1-2, Fig. 1.4
Part I: Evolution: evolutionary processes, origin of diversity, and universal phylogeny			
	28Jan	Reproduction case study	p. 249 (comparison... section), 812-815, 996-999, case study handout
	30 Jan	Descent with modification/evidence for evolution	Concept 1.2 & 1.3, Chapter 22
2	2 Feb	Microevolution Natural selection	p. 458-460, 469-470, Concept 23.4
	4 Feb	Microevolution Other forces of evolution	Concept 23.3
	6 Feb	Microevolution	
3	9 Feb	Macroevolution: Species and speciation	p. 488, Concept 24.1, p. 501-503
	11 Feb	Macroevolution: Species & speciation	Concept 24.2
	13 Feb	Phylogenies	p. 536, Concept 26.1 – 26.3
4	16 Feb	Universal phylogeny Prokaryotic & eukaryotic cells, tour of Archaea & Bacteria	Concept 26.6, 6.2; Ch. 27;
	18 Feb	Eukaryotes: Origin of eukaryotes, protists	p. 516-517, p. 576, Fig. 28.2, sections of Ch. 28 based on class
20 Feb EXAM 1—Evolution, Universal Phylogeny (through Feb 17)			
Part II: Plant diversity, form & function			
5	23 Feb	Introduction to plant diversity	(skim Ch. 29 & 30 for preview)
	25 Feb	Eukaryotic life cycles	Ch. 12 overview, Concept 12.1, 13.2, Fig. 13.7 & 13.9, p. 357, Concept 13.4
	27 Feb	Plant life cycles I: Mosses & ferns	Concept 28.5; Ch. 29; Ch 30
6	2 Mar	Plant life cycles II: Angiosperm Reproduction	Concept 30.3, 38.1

Week	Date	Topics & class activities	Reading assignment
	4 Mar	Cell transport & osmosis	p. 125, Concepts 7.2-7.4
	6 Mar	Plant anatomy	p. 738-747
7	9 Mar	Transport in plants I	assignment for week: Ch. 36 except Concept 36.6
	11 Mar	Transport in plants II	
	13 Mar	Transport in plants III	
8	16 Mar	Plant hormones & phototropism	Ch. 39 overview, Concepts 39.2, 39.5)
18 Mar Exam 2: Eukaryotes & Plants (Feb 19 – March 17)			
Part IV: Fungi, Animal diversity, form & function			
	20 Mar	Fungi	Ch. 31 (focus on material from class)
9	30 Mar	Intro to animals Origins, body plans	p. 518, 654-661
	1 Apr	Animal diversity I	Concept 32.4, Ch. 33
	3 Apr	Animal diversity II	Ch. 33 continued
10	6 Apr	Animal diversity III	Ch. 33 continued
	8 Apr	Animal diversity IV	Ch. 34 (Concept 34.1, skim rest)
	10 Apr	Animal diversity wrap-up	
11	13 Apr	Animal Physiology Homeostasis, circulation	p. 852-855, Concept 40.2, p. 897-899, 910-911
	15 Apr	Animal Physiology: Circulation, respiration	p. 899-903, Concept 42.3
	19 Apr	Animal Physiology: Respiration	Concept 42.7
Part V: Ecology			
12	20 Apr	Population ecology	p. 1170-1173 (stop at Demographics), Concepts 52.4, 53.2-53.5
	22 Apr	Senior Projects Day—no class	
	24 Apr	EXAM 3: Fungi & Animals	
13	27 Apr	Population ecology: Human populations	Concept 53.6
	29 Apr	Community ecology	Ch. 54 overview, Concepts 54.1-3
	1 May	Community & ecosystem ecology	Concept 55.1, 55.3
14	4 May	Ecosystem ecology	Concept 55.4, p. 1256-1258
FINAL EXAM: Saturday, May 9, 8:30 – 11 am			

Biology 202 Contract of Understanding, Spring 2015

Turn in by January 30

I have read the syllabus completely and understand course requirements. I also understand the course policies, including those regarding academic honesty, attendance, missed exams, homework, and keeping all graded work. I recognize that it is my responsibility to seek clarification regarding any aspect of the syllabus, the course requirements, or the grading policies if they are unclear to me.

Signature: _____ Date: _____

Name (printed): _____

Prefer to be called (nickname or pronoun) if different than above: _____

Student Information This information helps me tailor the course to your background.

Section or lab day & time: _____

If you know or have decided, please tell me about your major and career goals; if you're still exploring, tell me about some of your ideas or leave this space blank.

For the next 2 questions, please circle your answer (please check on the blood type if you don't know)

Year in College: Fr So Jr Sr

Blood type: A AB B O don't know & can't find out

Note: Blood type information remains anonymous; I use aggregated data for a class example.

Other courses this semester (names, please)

When and where was your last biology course?

When was your last math class, and what was the topic?

What college math & science courses have you taken or tested out of? (names, please)

Extracurricular activities this term

Anything else you want me to know about you? Any concerns you have about this class?