

## Biology 1911 – Introductory Biology

Spring 2017

Lecture: T Th 12:30 – 1:50

SERC 110B

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### Required Text:

1. *Campbell Biology* by Reece, Jane B et al., 2014, 11<sup>th</sup> Edition. Benjamin / Cummings Publishing Co., Inc., California. You will use this book for this course as well as Bio 2112 (or 2912). If you have a previous edition you may use it, however, it is your responsibility for any page number and chapter differences, similarly with older lab manuals.
2. Access to Mastering Biology (required) and the EText is revealed within the text package and is available elsewhere for those not purchasing #1 but desiring to have it. You will need to make sure that you have access to Mastering Biology.
3. **IMPORTANT:** It is necessary for this course that you obtain AccessNet and Temple email accounts (Obtain these by going to <http://www.temple.edu/cs>. You can also visit the Computer Services Help Desk, Rm 106, TECH Center, 12th St. & Montgomery Ave. Call 204-8000 for more information). Without an AccessNet account you will not be able to access the Blackboard site or receive any special notices for this course.
4. “The 6<sup>th</sup> Extinction: An Unnatural History” by Elizabeth Kolbert (see below)

**Course Description:** Introductory Biology is an undergraduate survey course designed for students who are interested in biology-related careers. The course will cover a broad range of topics including ecology, evolution, biological diversity of plants and animals, physiology and conservation biology, presented as integrated concepts. We will begin our study by defining evolution, examining how it is studied, how new species are defined, and how life forms are classified. We will then examine a number of different life forms at increasing levels of complexity. This will proceed from the microbes with their incredible metabolic diversity that sustains life on earth, through the Eukaryotes including their structure-function, reproduction, feeding strategies and distribution as well as strategies used by different organisms to adapt to their environments. Moving on to ecology and biodiversity, we will examine the interactions among all of these forms of life and how biological communities are organized. You will also be introduced to the emerging field of conservation biology and sustainability science where emphasis will be placed on understanding the basic priorities of conservation necessary to preserve the earth’s biodiversity.

We will compliment these investigations with the non-fiction book “The 6<sup>th</sup> Extinction: An Unnatural History” by Elizabeth Kolbert. This book examines the consequences of global climate change from the personal perspective of some of the scientists studying the effects on different species and ecosystems world-wide. The intent is for this to introduce you to the process of acquiring new information, and get you to think critically about the application of scientific findings to real-world problems. Students will be responsible for reading the novel over the course of the semester and discussing it in class as well as posting a series of brief comments on a Blackboard discussion page.

**Course Objectives:** To provide the students with the information necessary to begin their inquiry into the field of Biology. This includes the background material that will be built upon in future courses, but also different ways of thinking and problem solving that are critical to advancing in any field – whether it be a technical profession, medical school, or graduate school. You will become more familiar with the processes of critical thinking and observation that are central to the scientific method. This will help you to better evaluate the information you are presented with every day, whether it be in courses, your future career, or even stories related to science in the media.

**Approach to Teaching:** I am very much a lecture-oriented instructor. When you come to class, pay attention, and (most importantly) take notes in class, you will do well. You should realize by now that this is not high school. I will not force-feed you the answers to the exams, and much of what I discuss in class is not carefully laid out in the textbook. This is an Honors course, so you should be able to handle complex concepts in place of rote memorization. The text is a good place for background information and should be read prior to class, but you cannot rely on it alone. In addition, there will be a clicker question in the beginning of each class about the previous lecture, so you will only get these points by attending and answering correctly. The best, easiest, and really the only approach to doing well in this class includes coming to class, taking notes, and participating in the discussions. Although the class size is a bit larger than normal honors courses, we will strive to provide the small class feel by creating cohorts within the class, with an undergrad from last year’s class assigned as a classroom assistant for each of the lab sections. The CAs will hold weekly recitations to go over the lecture and lab material.

**Blackboard:** All course announcements, assignments and grades will be posted online using Blackboard. I will also post the upcoming lecture notes on Blackboard before each class. These notes will not be complete, and much of the material discussed in class will not be present in these files – this is not a substitute for attending lecture, reading the book, and taking careful notes. Note that there is a separate Blackboard page for the laboratory component of the course. Updates to this syllabus will be posted; please periodically check Blackboard. If you have not used Blackboard previously, ask your Diamond Peer Teacher, CA, or a fellow student to spend a few minutes helping you or ask your TA to help you after your first lab meeting. You will also receive important course announcements via your Temple email account. If you do not use your Temple email account, you need to activate it. In all email messages please be sure to include your name, the day and time of your lab section and the name of the section leader.

**Grades:** The lecture grade and the laboratory grade are combined to determine your final grade for the course. The lecture and the laboratory are worth, respectively, 700 and 300 points for a total of 1000 points. Details on laboratory grading will be presented in lab. The letter grade will correspond, roughly, to a percentage scale with >930 points=A, 900-930=A-, 870-899=B+, 830-869=B and so on. All of your grades will be posted on Blackboard so you can keep a running tab of your updated score as you progress through the class.

Lecture Grades will be determined as follows:

**Midterm Exams: 200 points.** There will be two, non-cumulative mid-term exams worth 100 points each.

**Final Exam: 150 points.** There will be a comprehensive final exam covering the entire course, including material from our class discussions.

**Clicker Questions: 100 points.** There will be clicker questions at the beginning of each class (25 classes in total). Answering the question is worth 2 points, answering correctly is worth 3 points. These will provide frequent feedback on your progress in the course, give you an idea of what kind of questions to expect on the exams, and provide some incentive for showing up on time to class. They will also help me to determine what concepts are getting through to you, and what we need to spend more time covering.

**Mastering Biology: 150 points.** There will be weekly assignments posted on Mastering Biology by your Diamond Peer Teacher. These questions and the lecture material will be reviewed during the weekly recitation sessions led by the Classroom Assistants.

**Blackboard discussion page: 50 points.** Students will complete at least 5 brief, written comments or questions about “The 6<sup>th</sup> Extinction” (worth up to 10 points each). Posts must be completed before class starts on the date they are due. Late posts will receive 50% credit. The brief comments will form the basis of our in-class group discussions of the book.

**Class participation: 50 points.** This will cover all of the discussions during the semester, in particular the discussions about the outside reading, as well as attendance and participation in the lecture. As I will try to present most of the course material in a discussion format, it is important that all students in the class arrive having read the material in the textbooks and reading assignments, as well as bringing in outside ideas to discuss.

**Makeup Exam Policy:** In the case of severe illness, sports competitions or other excused absences, you will be excused and will be given an opportunity to makeup the exam. You must have a note from your physician, a coach or whoever is appropriate for explaining a legitimate absence. These should be arranged in advance, or (in the case of illness) I must be notified by the time of the exam. If you are not excused by the time of the exam, you will receive a zero.

**I do not allow laptops or phones to be used during class.** These are at best incredibly distracting, and at worst a very easy way to cheat. Please bring something to write on – a 2-sided, black and white printed copy of the Powerpoint slides with lines for notes is recommended, but a simple notebook works just as well. If you require an exception for the use of laptops to take notes, please see me at the beginning of the course.

**Honesty and Civility:** You must abide by Temple's Code of Conduct (see <http://www.temple.edu/assistance/udc/coc.htm>), which prohibits:

1. Academic dishonesty and impropriety, including plagiarism and academic cheating.
2. Interfering or attempting to interfere with or disrupting the conduct of classes or any other normal or regular activities of the University."

Do not try to cheat; avoid all appearance of cheating. This includes giving someone else your Clicker. We have a "zero tolerance" policy. The Temple Honor code provides disciplinary action for cheating which may include expulsion from the University.

**Attendance:** If you miss a class meeting for any reason, you will be held responsible for all material covered and announcements made in your absence. Assignments or in-class work missed due to tardiness are counted as zeros and cannot be dropped. You will also receive a 0 for the clicker question that day. Attending EVERY class is the easiest way to pass the class, best prepares you for the more rigorous courses that will follow this intro course, and enhances your undergraduate experience.

**Disabilities:** Temple University is committed to the inclusion of students with disabilities and provides accessible instruction, including accessible technology and instructional materials. The process for requesting access and accommodations for this course is: 1. Advise me of the need for access or accommodations; 2. Contact the Office of Disability Resources and Services (215-204-1280) in Ritter Annex 100 to request accommodations; 3. DRS will consult with me and Dr. Spaeth as needed about essential components of the program; 4. Present me and Dr. Spaeth with a DRS accommodation form. Students who are eligible for extra time on exams need to talk with me and Dr. Spaeth well in advance of the exam to make arrangements for extended time.

**Laboratory:** The laboratory component of Biology is a separate part of the course, but does not result in a separate grade. The laboratory contributes 300 points of the overall course grade of 1000 points. I have no control over how this portion of the class is graded, and ALL questions regarding assignments in this portion of the class should be directed to Dr. Spaeth or your TA. The basic schedule of labs accompanies the attached lecture syllabus as the right most column of the following page. The lab portion of the course includes a survey of biodiversity and a fetal pig dissection (among other things). The full lab syllabus with assignments, points and other pertinent information for lab materials, procedures and protocols is available on the Blackboard page for Biology 1911 Lab. As in lecture, the laboratory makes extensive use of the Blackboard resources to organize and disseminate class information to students for every lab. Announcements about labs are generally posted on Blackboard's opening announcement page the week before the lab. Students must check regularly.

Course schedule. Please check Blackboard for periodic updates.

Date	Campbell Readings	Concept	Taxon	Lab topic	The 6th Extinction
Jan 17	Ch 1	Introduction/Defining Biology		no labs this week	
Jan 19	22.1, 22.2	Principles of Evolution			
Jan 24	22.3, 27.1, 27.2	Evidence for Evolution	Microbes	Microscopes &	
Jan 26	23.1, 23.2	Genetic Basis of Evolution		Bacteria I	
Jan 31	23.3	Evolutionary Processes		Prokaryotes:	Ch 1&2
Feb 2	23.4	Selection	Microbes	Bacteria II	
Feb 7	Ch 24	Speciation		Protists & Fungi	
Feb 9	Ch 26	Phylogenies			
Feb 14		<b>First Exam</b>		Plant Diversity	
Feb 16	Ch 25, 27.3-27.6	History of Life on Earth I	Microbes		Ch 3&4
Feb 21				Plant Growth	
Feb 23	Ch 28	History of Life on Earth II	Protista		Ch 5&6
Feb 28	Ch 31, 32.1		Fungi	<b>Lab midterms</b>	
Mar 2	Ch 29,30		Plants		
Mar 7		Spring Break		no lab	
Mar 9		Spring Break			
Mar 14	Ch 32	History of Life on Earth III		Animal Diversity I	
Mar 16			Animals		
Mar 21		<b>Second Exam</b>		Animal Diversity II	
Mar 23	33.1, 43.1, 43.2	Immune system	Sponges		Ch 7&8
Mar 28	33.2, 41.2	Digestion	Cnidaria	Animal Diversity III	
Mar 30	33.3, 44.1-44.4	Osmoregulation/Excretion	Lophotrochozoa	Vert. Anatomy I	
Apr 4	33.3, 46.1, 46.2	Reproduction	Lophotrochozoa	Vertebrate	Ch 9&10
Apr 6	33.4, Ch 42	Circulation & gas exchange	Ecdysozoa	Anatomy II	
Apr 11	33.5, Ch 47	Development	Deuterostomes	Vertebrate	
Apr 13	48.1, 49.1, 49.2	Nervous system	Chordates	Anatomy III	Ch 11&12
Apr 18	34.1 - 34.6		Vertebrates	Animal Development	
Apr 20	34.7	Human evolution	Primates		
Apr 25	Ch 53, 54	Ecology I		<b>Lab Practical</b>	
Apr 27	Ch 52	Ecology II			Ch 13
May 4		<b>Final Exam 10:30AM - 12:30PM</b>			