

Biology and the Citizen
Spring 2017
BIOLOGY 1010

Instructor

Dr. Lori A. Neuman-Lee
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Office: BNR 027
Office hours: Wednesday 9:30-10:30
OR by appointment (usually best)

Class

Time: 8:30-9:20 am
Days: Monday, Wednesday, Friday
Room: Taggart Center Auditorium

SI Leader:

Russ Anderson
andersonrusse@gmail.com

Time: 8:30-9:30 pm
Days: Tuesday and Thursday
Room: Engineering 203

Course Format: During class you will listen to lectures, watch video clips, participate in demonstrations, and engage in discussion with your peers. Outside of class you will read the textbook and take weekly online quizzes. Your major assessments are four unit exams, and writing an assessment of science news reporting quality.

Essential Learning Objective	Learning Outcomes
Objective 1. Gaining factual knowledge (terminology, classifications, methods, trends)	You will be able to recall biological facts, such as how meiosis produces genetic variation.
Objective 2. Learning fundamental principles, generalizations, or theories.	You will be able to combat misconceptions regarding the key processes of the natural world such as evolution.
Objective 3. Learning to apply course materials (to improve rational thinking, problem solving and decisions)	You will be able to apply your biology knowledge to making decisions as a world citizen, such as when you propose solutions to real-world problems when assessing accuracy of science news reporting.

Required Course Materials

- **Canvas:** You will use our Canvas site to receive important course announcements, download class materials, submit assignments, take reading quizzes and exams, and view grades. Make sure you receive immediate or daily notifications for announcements.

- **Textbook:** You will have weekly reading assignments to engage with the course content outside of class to facilitate content retention. We will use a free online textbook, Concepts of Biology. Access it here: <https://openstax.org/details/concepts-biology>
- **iClicker remote:** These electronic polling devices allow you to gauge and demonstrate your understanding and share your thoughts anonymously in class. Your use of an iClicker remote also helps your instructor determine whether she needs to use alternative instructional approaches to explain challenging concepts. Register your remote by January 16th; see Canvas for details. You may not use another Biology 1010 student's remote. You may use the iClicker1 remote, iClicker2 remote or the REEF polling app for iPhone or Android; however, your instructor recommends using a remote.

Assignments

- **In-class practice and discussion (iClicker).** I will ask a few practice or discussion questions each class session that you will answer with an iClicker remote for participation points. If you answer 75% or more of all the questions asked across the semester, you will receive full credit (20 pts). You will receive 70% credit for answering 50-74.9% of the questions (14 pts), 50% credit for answering 25-49.9% of the questions (10 pts), and 20% credit for answering 0.1-24.9% of the questions (4 pts). Note: The number of questions asked varies by class session. This grading scheme allows for seldom errors that may occur with the iClicker technology and rare excused absences. Having a functioning remote in class is *your* responsibility; carry an extra set of batteries with you.
- **Out-of-class practice (weekly reading quizzes).** Outside of class you will take online Canvas quizzes nearly every week regarding the background knowledge you'll gain from reading the textbook. They will consist of 4 questions worth 0.5 pts each. They will always be due by 10 am on Fridays and they become available to take at the beginning of each week. You will be allowed one attempt, and the quizzes are not timed. You may view the correct answers after submission. Your lowest quiz score automatically will be dropped.
- **Unit exams.** The in-class practice questions and reading quizzes will help you prepare for the four unit exams, but exams will emphasize what we cover in class together. You will use both simple fact recall and higher-level scientific reasoning skills on the exams. We will not meet in class on exam days; you will take exams on Canvas using a reliable computer on campus. Exams are closed-book and timed (50 minutes); see below for details about the university's Honor System. Requests to take exams at times other than the regularly scheduled times will be considered only for excused absences (see below for attendance policy). There will be a practice exam available on Canvas the second week of class to give you an idea of what to expect for the unit exams.
- **Assess quality of science reporting.** You will apply your knowledge as a citizen and select a news (online) article that reports a recent scientific discovery. You will then assess the accuracy of that article by comparing it to the original source of the discovery (scientific paper). Your assignment will include: 1) a description of the article's claims, 2) a description of the actual results from the scientific paper, and 3) an assessment of how accurate or inaccurate the article was in comparison to the actual scientific paper. See Canvas for details.

Grading Policy: Final course grades are based on the following scale and will not be rounded up to the nearest whole number: A (94-100%), A- (90-93.9%), B+ (87-89.9%), B (84-86.9%), B- (80-83.9%), C+ (77-79.9%), C (74-76.9%), C- (70-73.9%), D+ (67-69.9%), D (60-66.9%), and F (below 60%). Your grade will reflect your performance on the various assignments, which will be weighted as follows:

Assignment	Weight (%)
In-class practice and discussion (iClicker participation)	10% (20 pts)
Out-of-class practice (weekly reading quizzes on Canvas)	10% (20 pts)
Unit 1 exam	17.5% (35 pts)
Unit 2 exam	17.5% (35 pts)
Unit 3 exam	17.5% (35 pts)
Unit 4 exam	17.5% (35 pts)
Science reporting assessment	10% (20 pts)
TOTAL	100% (200 pts)

Electronic devices:

Cell phones must be **OFF** during all lecture and test periods. Laptops may be used to take notes. Not only is the use of electronics detrimental to your learning, but they are distracting to other students and to me—and it is quite rude to be using electronics during lectures. Trust me, very few instances warrant you texting/checking facebook during the 90 minute class period.

Attendance policy: Attendance is an individual student responsibility. Your instructor will not provide an opportunity for the student to make up work missed because of an unexcused absence. An absence may be excused for the following reasons: university-sponsored or sanctioned activity, mandatory participation as a student-athlete in NCAA-sanctioned competition, injury or illness or medical condition that is too severe or contagious for the student to attend class (elective medical service does not count), major injury or illness or medical condition or death in a student's immediate family (parents, siblings, spouse, children), required participation in military duties, mandatory admissions interviews, and participation in legal proceedings. A student requesting an excused absence must provide written evidence to the instructor substantiating the reason for the absence within a week before the absence if it is a planned absence or within two working days after the absence if it is unplanned (e.g., a medical confirmation note that contains the date and time of the visit and the medical professional's confirmation). If the absence is excused, the student and instructor will choose a date to make-up work (i.e., end-of-unit exams) in the instructor's office. Make-up work must be completed within 14 calendar days of the last day of the initial absence. Excused absences may not exceed 20% of the class meetings.

The Honor System and Plagiarism: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge: 1) espouses academic integrity as an underlying and essential principle of the Utah State University community; 2) understands that each act of academic dishonesty devalues every degree that is awarded by this institution; 3) is a welcomed and valued member of Utah State University. Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

Students with Disabilities: The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (DRC, ph. 797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the DRC, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

Tentative Schedule: The topic scheduled for each date might change, depending on the pace at which we move through the material. The exam schedule, however, will not change.

Day	Date	Topic	Reading	Quizzes and Assignments
M	Jan 9	Course Introduction; Diversity of Life	Syllabus Canvas	
W	Jan 11	The Nature and Process of Life	Chap 1	
F	Jan 13	The Nature and Process of Life	Chap 1	Intro Quiz
		<u>Unit 1</u> Cell and Molecular Biology		
M	Jan 16	<i>No class</i>		
W	Jan 18	Building Blocks of Life	Chap 2	
F	Jan 20	Cell Structure and Function	Chap 3	Unit 1, Quiz 1
M	Jan 23	Cell Metabolism and Photosynthesis	Chap 4-5	
W	Jan 25	Cell Reproduction: Mitosis and Meiosis	Chap 6	
F	Jan 27	Inheritance	Chap 7-8	Unit 1, Quiz 2
M	Jan 30	DNA Structure and Replication	Chap 9	
W	Feb 1	Gene Regulation	Chap 9	
F	Feb 3	Biotechnology	Chap 10	Unit 1, Quiz 3
M	Feb 6	<i>Unit 1 Exam on CANVAS</i>		<i>Unit 1 Exam on CANVAS</i>
		<u>Unit 2</u> Evolution		
W	Feb 8	How is science actually done?		
F	Feb 10	Evolution Evidence and Misconceptions	Chap 11	
M	Feb 13	Mechanisms of Evolution	Chap 11	
W	Feb 15	Mechanisms of Evolution	Chap 11	
F	Feb 17	How biodiversity evolves: Speciation	Chap 11	Unit 2, Quiz 1
M	Feb 20	<i>No class</i>		
T	Feb 21	<i>(Monday Schedule)</i> Diversity of Microorganisms	Chap 13	Science Reporting Assessment Due
W	Feb 22	Diversity of Fungi	Chap 13	
F	Feb 24	Diversity of Plants	Chap 14	Unit 2, Quiz 2
M	Feb 27	Diversity of Animals	Chap 15	
W	Mar 1	Diversity of Animals	Chap 15	
F	Mar 3	Human Evolution	Chap 15	Unit 2, Quiz 3
M-F	Mar 6-10	<i>Spring Break</i>		
M	Mar 13	<i>Unit 2 Exam on CANVAS</i>		<i>Unit 2 Exam on CANVAS</i>

Unit 3 Body Systems				
W	Mar 15	Body Systems: Form and Function	Chap 16	
F	Mar 17	Nutrition and Digestion	Chap 16	
M	Mar 20	Nervous and Sensory Systems	Chap 16	
W	Mar 22	Endocrine Systems	Chap 16	
F	Mar 24	Musculoskeletal and Exercise	Chap 16	Unit 3, Quiz 1
M	Mar 27	Respiratory & Circulatory Systems	Chap 16	
W	Mar 29	Osmotic Regulation and Excretion	Chap 16	
F	Mar 31	The Immune System and Diseases	Chap 17	Unit 3, Quiz 2
M	Apr 3	The Immune System and Diseases	Chap 17	
W	Apr 5	Animal Reproduction	Chap 18	
F	Apr 7	Animal Reproduction	Chap 18	
M	Apr 10	<i>Unit 3 Exam on CANVAS</i>		<i>Unit 3 Exam on CANVAS</i>
Unit 4 Ecology				
W	Apr 12	Introduction to Ecology	Chap 19	
F	Apr 14	Population Ecology	Chap 19	Unit 4, Quiz 1
M	Apr 17	Community Ecology	Chap 19	
W	Apr 19	Ecosystem Ecology	Chap 20	
F	Apr 21	Ecosystem Ecology	Chap 20	Unit 4, Quiz 2
M	Apr 24	Current Conservation Issues	Chap 21	
W	Apr 26	Current Conservation Issues	Chap 21	
F	Apr 28	Global Climate Change	Chap 21	
F	May 5	<i>Unit 4 Exam on CANVAS 7:30-9:20 am</i>		<i>Unit 4 Exam on CANVAS 7:30-9:20 am</i>