

Biology and the Citizen
Biology 1010, section 001
Fall 2018, TR 7:30 – 8:45 AM ESLC 130

Course Instructor: Dr. Emily Sadler

Contact information: e-mail sadler.e@gmail.com

Drop-in office hours in BNR 233: Thurs 9:00-10:00 am and by appointment

Supplemental Instruction (SI) Leader: Jacob Thompson

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SI sessions: TBA

Attending SI sessions will help you improve your understanding of the material and your grade.

Course Format: During class you will listen to lectures, watch video clips, participate in demonstrations, answer iClicker questions, 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, participating in an authentic citizen science project, and completing a science communication assignment.

Essential Learning Objective (from the IDEA Center)	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 view grades. Make sure you have updated your settings to 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 **September 6th**; 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 and attending lectures. They become available to take at the beginning of each week (Monday at 8am), and are due at the end of that week (Friday at 8pm). You will be allowed **one attempt**, and the quizzes are not timed. Your lowest quiz score will be dropped. Quizzes will not be re-opened and there will **not** be opportunities to make them up. If you are added late to the class or you have a medical emergency, please talk with your instructor. See the tentative schedule below for dates.

Unit exams

The in-class practice questions and reading quizzes will help you prepare for the four unit exams, but exams will mainly be based on what we cover in class together. You will use both simple fact recall and higher-level scientific reasoning skills on the exams. We will meet in class on exam days, and exams will be taken **in-person**. You will be required to bring a scantron to the exams (please bring the large blue and white scantron sheets labeled "General Purpose Test Answer Sheet"). Exams are **closed-book**; 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 the last page for attendance policy). If you need any testing accommodations, contact the Disability Resource Center (DRC), see the last page for more information.

Citizen science assignment

You will apply your knowledge of the process of science and contribute to an authentic, national citizen science project. A list of short projects you can choose from will be posted on Canvas with assignment instructions. See Canvas for details.

Science Communication assignment

You will read an online news article that reports a scientific discovery. You will condense what you learn from the article and write a short communication that helps make the information accessible to the general public. You will also assess the accuracy of the reporting by comparing it to the original scientific paper. A list of articles will be posted on Canvas with assignment instructions. See Canvas for details.

Extra Credit Opportunity

You have the option to complete a popular science assignment in order to gain extra credit in the class. This assignment is worth 2 pts (the same as 1% point) towards your final grade. A list of topics and corresponding podcasts will be posted on Canvas with assignment instructions. See Canvas for details. **EXTRA CREDIT WILL NOT BE OFFERED AFTER THE ASSIGNMENT CLOSES ON CANVAS.**

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	Possible Points	Weight (%)
In-class practice and discussion (iClicker participation)	20 pts	10%
Out-of-class practice (weekly reading quizzes on Canvas)	20 pts	10%
Unit 1 exam	25 pts	12.5%
Unit 2 exam	25 pts	12.5%
Unit 3 exam	25 pts	12.5%
Unit 4 exam	25 pts	12.5%
Citizen science assignment	30 pts	15%
Science Communication assignment	30 pts	15%
TOTAL	200 pts	100%

Tentative Schedule: The topic scheduled for each date might change, depending on the pace we move through the material. This schedule may be updated periodically to reflect the changes, so check often. However, the exam schedule will not change. Quizzes are due no later than Friday. There will be no quizzes on test weeks.

Day	Date	Topic	Readings & Quizzes
Introduction			
T	28-Aug	Course introduction, what is life?	syllabus, C. 1
R	30-Aug	The nature and process of science	C. 1; Intro quiz
Unit 1: Cell Biology and Physiology			
T	4-Sep	Cell structure/function	C. 2, C. 3, C. 13.1
R	6-Sep	Cell structure/function, continued	C. 3, C. 13.2, C. 13.3; unit 1 quiz 1; Intro Survey due
T	11-Sep	Cellular reproduction	C. 6 (except 6.3), C. 7
R	13-Sep	Nutrient intake: plants vs animals	C. 5, C. 16.2; unit 1 quiz 2
T	18-Sep	Circulation and respiration	C. 16.3
R	20-Sep	Immunology and disease	C. 17, unit 1 quiz 3
T	25-Sep	Nervous and endocrine systems/In-class Review Session	C. 16.4, C. 16.6
R	27-Sep	UNIT 1 EXAM in class	
Unit 2: Genetics			
T	2-Oct	DNA structure and replication	C. 9.1, C. 9.2
R	4-Oct	Gene expression and regulation	C. 9.3, C. 9.4, C. 9.5; unit 2 quiz 1

T	9-Oct	Inheritance	C. 8,
R	11-Oct	Phenotypes: the visible outcome of genes	C. 8 continued; unit 2 quiz 2
T	16-Oct	Biotechnology	C. 10
R	18-Oct	The future of genetics/In-class Review Session	C. 10 continued; unit 2 quiz 3
FALL BREAK			
T	23-Oct	UNIT 2 EXAM In Class	
Unit 3: Evolution			
R	25-Oct	Overview and brief history of the field	C. 11.1, C. 11.3, C. 11.5
T	30-Oct	Selection and mutation	C. 11.2, C. 11.3
R	1-Nov	Genetic drift and gene flow	C. 11.2, C. 11.3; unit 3 quiz 1
T	6-Nov	Speciation and the tree of life	C. 11.4, C. 12
R	8-Nov	Diversity of life: fungi and plants	C. 13.4, C. 14; unit 3 quiz 2
T	13-Nov	Diversity of life: invertebrates	C. 15.3, C. 15.4
R	15-Nov	Diversity of life: vertebrates/In-class Review Session	C. 15.5 (“Chordates” section), C. 15.6; unit 3 quiz 3; citizen sci. due
T	20-Nov	UNIT 3 EXAM In Class	
Unit 4: Ecology			
R	22-Nov	<i>Thanksgiving Break (NO CLASS)</i>	
T	27-Nov	Population ecology	C. 19.1, C. 19.2;
R	29-Nov	Community ecology	C. 19.4; unit 4 quiz 1
T	4-Dec	Ecosystem ecology	C. 20;
R	6-Dec	Current conservation issues/In-class Review Session	C. 21, C. 19.3; sci. communication due
T	11-Dec	UNIT 4 EXAM (FINAL EXAM) In Class from 7:30-9:20am	

Academic Freedom and Professional Responsibilities: Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. USU Policy 403 further defines academic freedom and professional responsibilities.

Attendance Policy (adapted from the USU Course Catalog): The university views class attendance as an individual student responsibility. Your instructor will not provide you an opportunity to make up work missed because of an unexcused absence. Unexcused absences include family vacations. The following are considered excused absences if properly documented: absences demanded by university-sponsored or sanctioned activities; mandatory participation as a student-athlete in NCAA-sanctioned competition; injury, illness or medical condition/status that is too severe or contagious for the student to attend class; major injury, illness, medical condition/status, or death in a student’s immediate family; required participation in military duties; mandatory admissions interviews for professional or graduate

school; participation in legal proceedings that require the student's presence. In the case of an excused absence, you must provide your instructor with written evidence substantiating the reason for the absence (for example, a medical confirmation note that contains the date and time of the visit and the medical professional's confirmation) prior to the date of absence if feasible. In cases where advance notification is not feasible (e.g., accident or emergency), the student must provide written documentation by the end of the second working day after the absence. If the absence is excused and properly documented, you must meet with your instructor outside of class to discuss make-up work. Any make-up work must be completed within 14 calendar days of the last day of the absence. Your instructor will deny any excused absence make-up work requests that exceeds 20% of class sessions (more than eight class sessions).

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: Students with Disabilities: USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) as early in the semester as possible (University Inn # 101, 435 797 2444, drc@usu.edu). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.