

Biology and the Citizen
Biology 1010, section 002
Spring 2017, TR 1:30 – 2:45 PM BNR 102

Course Instructor: Shab Mohammadi

Contact information: e-mail shab.mohammadi@gmail.com

Drop-in office hours in BNR 005: Tuesdays 3:00–4:00pm, Thursdays 3:00–4:00pm

Supplemental Instruction (SI) Leader: Jacob Jewkes

E-mail: jacob.jewkes@gmail.com

SI sessions: TBD

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 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 **due by 12 pm 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)

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. **Quizzes are listed on the schedule at the beginning of the week that they're due (they are always due on Canvas on the Friday of their corresponding week at 12:00 PM).

Day	Date	Topic	Readings & Quizzes
T	10-Jan	Course introduction, diversity of life	syllabus and course Canvas site, introductory quiz
R	12-Jan	The nature and process of science	Ch 1
T	17-Jan	Unit 1: Cell and Molecular Biology Building blocks of molecules	Ch 2, unit 1 quiz 1
R	19-Jan	Cell structure and function	Ch 3
T	23-Jan	Cell reproduction: mitosis and meiosis	Ch 6 and 7, unit 1 quiz 2
R	26-Jan	Inheritance	Ch 8
T	31-Jan	DNA structure and replication	Ch 9, unit 1 quiz 3
R	2-Feb	Gene regulation and biotechnology	Ch 9 and 10
T	7-Feb	50 min. UNIT 1 EXAM on CANVAS	
R	9-Feb	Unit 2: Evolution Evidence and common misconceptions	Ch 11,
T	14-Feb	Mechanisms of evolution	Ch 11, unit 2 quiz 1
R	16-Feb	How biodiversity evolves: speciation	Ch 11
T	21-Feb	NO CLASS (MONDAY SCHEDULE)	unit 2 quiz 2
R	23-Feb	Diversity of microorganisms	Ch 13
T	28-Feb	Diversity of plants	Ch 14, unit 2 quiz 3
R	2-Mar	Diversity of animals	Ch 15
		SPRING BREAK	

T	14-Mar	Human evolution	Ch 15
R	16-Mar	50 min. UNIT 2 EXAM on CANVAS	
		Unit 3: Animal Structure and Function	
T	21-Mar	The body's systems I	Ch 16, unit 3 quiz 1
R	23-Mar	The body's systems II	Ch 16
T	28-Mar	The body's systems III	Ch 16, unit 3 quiz 2
R	30-Mar	Immune system and disease	Ch 17
T	4-Apr	Animal reproduction	Ch 18
			Canvas materials, science reporting assessment assignment DUE on Canvas by 12 PM on Friday April 7th
R	6-Apr	How is science actually done?	
T	11-Apr	50 min. UNIT 3 EXAM on CANVAS	
		Unit 4: Ecology	
R	13-Apr	Population ecology	Ch 19
T	18-Apr	Community ecology	Ch 19, unit 4 quiz 1
R	20-Apr	Ecosystem ecology	Ch 20
T	25-Apr	Current conservation issues	Ch 21, unit 4 quiz 2
R	27-Apr	Global climate change	Ch 21
R	4-May	50 min. UNIT 4 EXAM (FINAL EXAM)	1:30 PM

Attendance policy: Attendance is an individual student responsibility. You 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."