

**Biology and the Citizen**  
BIOL 1010 Section 002, Fall 2018  
Tuesdays & Thursdays, 9:00 to 10:15 am, BNR 102

**Instructor:** Dr. Bonnie Waring

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Office hours: Thursdays, 10:30 to 11:30 in BNR 137

**Supplemental Instructor (SI):** Russell Anderson

Contact: [andersonrusse@gmail.com](mailto:andersonrusse@gmail.com)

Attending SI sessions is not mandatory, but will improve your understanding of the course material and increase your grade!

### **Course Format**

In this course, you will gain a broad overview of biological concepts and theories, and learn how these relate to important real-world issues. This course covers cellular and molecular biology, physiology, genetics, and ecology and evolution. The course is structured to target three main learning objectives:

1. You will learn fundamental biological terminology, principles and theories
2. You will understand how biologists collect and use scientific data to test and generate hypotheses
3. You will improve critical thinking and scientific reasoning skills, so that you are able to apply course material to real world problems

### **Course Materials**

Canvas Site: Sign up for the Canvas course website as soon as possible. On the BIOL 1010 Canvas site, you will receive course announcements, take quizzes/exams, hand in assignments and gain access to course materials (textbook, supplemental readings, and study guides).

Textbook: *Concepts of Biology*, available as a free PDF from the Canvas site. A limited number of hard copies will be available at the campus bookstore; contact me if you would like a print copy but have trouble obtaining one.

iClicker: An iClicker is **required** for this section of the course. You will use the device to answer questions in class, which will help me gauge your understanding of the course material (see 'Grade Policy' section below).

## Grade Breakdown and Policy

Assignment	Weight (% of Grade)
Units 1 & 2 Exam	15
Unit 3 Exam	15
Unit 4 Exam	15
Final Exam	20
Quizzes	10
Class Participation	10
Letter to Congressperson	15
<b>TOTAL</b>	<b>100</b>

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 (64-66.9%), D- (60-63.9%), F (below 60%).

Exams: Exams will consist of multiple-choice and short-answer questions designed to test your understanding of material covered in each unit.

**Supplementary readings WILL be covered in the exams and quizzes.**

We will not meet in class on exam days; you will take exams on Canvas during your normal class time. Exams are closed-book, and you may not consult others during the exam. Requests to take exams at times other than the regularly scheduled times will be considered only for absences demanded by university-related activities, travel for business or professional school interviews, and for medical and family emergencies; you are required to provide me with documentation.

Quizzes: Quizzes are multiple-choice and designed to ensure you are keeping up with course material. They will be administered weekly on the Canvas website. They are due **Fridays by 5 pm**, and you only have one attempt to take each quiz. If you miss a quiz without consulting me beforehand, you **may not** take a make-up quiz.

Class Participation: iClickers will be used to gauge your understanding of course material and track your attendance. Periodically during each lecture, I will ask questions related to course material. **You do not have to answer the questions correctly** for points; instead, your participation grade will be based on the following breakdown:

Percentage of in-class questions answered	Points (out of 10)
≥ 85	10
65 – 84	6.6
45 – 64	3.3
< 45	0

The grading scheme allows for infrequent errors associated with clickers; I expect you to attend every lecture. You are responsible for bringing a functional iClicker to class. Some in-class questions will allow you to consult with your neighbors before answering. In these cases, you must still input your answer into your own individual iClicker for full credit.

Letter to a Congressperson: At the end of the course, you will be required to write a letter to your congressperson on a biology-related issue of your choice. This assignment tests your ability to make an evidence-based argument grounded in biological literature. More details about the assignment can be found on the Canvas website.

Extra Credit Assignments: Periodically throughout the semester, I will announce extra credit assignments on Canvas. These will typically take the form of short essay responses or problem sets. The extra credit assignments are **not** mandatory. If successfully completed, each extra credit assignment counts for 0.5% of your final grade.

### **Resources to Help You Succeed**

Study guides and vocabulary lists: I have provided study guides for each exam on the Canvas site, which include key vocabulary lists. Additionally, printable lecture slides will be provided on Monday of each week, which some students find helpful for note-taking. These resources are not a substitute for class participation: you will need to attend the lectures to follow along with the course material. Rather, I am providing these materials to maximize your chances of performing well on the exams and – more importantly – to help you learn and engage with course material!

USU Academic Success Center: USU's academic success center offers tutoring, test-taking strategies, and workshops. Visit their website at <https://www.usu.edu/asc/> or visit Taggart Student Center Room 305.

### **Course Schedule (tentative)**

This schedule is only a guide, and may change depending upon the pace at which we cover course material. Exam dates will NOT change.

<b>Date</b>	<b>Topic</b>	<b>Reading Assignments</b>
<b><i>Unit 1: Cellular and Molecular Biology</i></b>		
August 28	Biology: what is life?	Chapter 1
August 30	Biology: the scientific method	'The Blood of the Crab'
Sept 4	Chemistry of life	Chapter 2
Sept 6	Cell structure	Chapter 3
Sept 11	Energy and metabolism	Chapter 4
Sept 13	Cellular respiration and photosynthesis	Chapter 5

<b>Unit 2: Human physiology</b>		
Sept 18	Digestive system, circulation, and respiration	Chapter 16 'How Gut Bacteria Make us Fat and Thin'
Sept 20	Nervous system and immune system	Chapter 17
Sept 25	<b>EXAM 1: Units 1 &amp; 2</b>	
<b>Unit 3: Genetics</b>		
Sept 27	Introduction to the genome	Chapter 6 'Genome: Autobiography of a Species' excerpt
Oct 2	DNA replication and the cell cycle	Chapter 7
Oct 4	Transcription and translation	Chapter 9
Oct 9	Gene regulation and biotechnology	Chapter 10
Oct 11	Mendel's laws	Chapter 8
Oct 16	Recap and review: cell biology and genetics	
Oct 18	<b>EXAM 2: Unit 3</b>	
<b>Unit 4: Ecology and Evolution</b>		
Oct 23	Introduction to evolution	Chapter 11, sections 1 – 3
Oct 25	How populations evolve	
Oct 30	How biodiversity evolves	Chapter 12
Nov 1	Phylogenetics and the tree of life	Chapter 13
Nov 6	Population ecology	Chapter 19
Nov 8	Community ecology	
Nov 13	Ecosystem ecology	Chapter 20
Nov 15	Biogeography	'Diversity of Life' excerpt
Nov 20	Why is biodiversity important?	Chapter 21, section 1
Nov 22	<i>No class - Thanksgiving holiday</i>	
Nov 27	Threats to biodiversity	Chapter 21, sections 2-3
Nov 29	<b>EXAM 3: Unit 4</b>	
Dec 4	Climate change	'If Everyone Ate Beans instead of Beef' 'Cow Burps'
Dec 6	Students' choice!	
TBA	<b>FINAL EXAM (cumulative)</b>	

### **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:

- espouses academic integrity as an underlying and essential principle of the Utah State University community;
- understands that each act of academic dishonesty devalues every

- degree that is awarded by this institution;
- 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.

Violation of the Honor System: If you are found to be cheating on an exam or written assignment, you immediately forfeit your grade on that assignment. There are no exceptions to this policy.

### **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 (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 Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

If you have a disability that interferes with your ability to attend class or complete assignments in a timely fashion, I will make every effort to accommodate your needs. Please contact me **as early as possible** during the semester so that we can work together with the Disability Resource Center to ensure your success in the course.