

Biology in the 21st Century (BIOL 1010), Fall 2019

Lecture: T, Th 09:10-10:30AM, CSC 205; **Instructor:** Tanya Vickers

Campus mailbox: Building-84, Rm 201; **Instructor & TA email:** CANVAS course email

Class office (shared by TAs and Instructor): Building 44, RM 220

Welcome! In BIOL 1010, my goal is to engage you in contemporary biology by providing relevant applications, historical references, connections to policies and to social issues. This course will also help you begin building an understanding of fundamental principles and terminology important in the biological sciences. The TAs and I are also a resource for students who are new to the U. If you need help connecting, in the sciences or across campus, we are here to help.

BIOL 1010 is designed to support varied learning styles and *assumes you have no prior science knowledge*. To support your success, we offer weekly Student Hours and extra hours before exams. Discuss your grades, *review lecture notes, get help solving problems, or receive support completing an assignment during these hours.*

Instructor: Tanya Vickers	Student Hours: 8:00 – 8:45AM T, Th or by appointment (Building 44, RM 220)
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Teaching Assistants	Student Support Hours Weekly (Building 44, RM 220)	Extra Support before each exam (Times TBA ,Building 44, RM 220)		
		Module-A	Module-B	Module-C
Hannah	Wednesdays and Fridays 9 – 10AM			
Brenda	Wednesdays 12:50 - 1:50 PM			

First class: T, Aug. 20; **Last class:** Th, Dec. 5; **Final exam:** Th, Dec. 5, same time and classroom;

Last day to drop: F, Aug. 30; **Withdraw=** F, October 18;

Fall break= Oct 6 – 13; **Thanksgiving=** Nov 28 – Dec 1; **Winter break:** Dec. 14 – Jan. 5

COURSE INTRODUCTION: Biology, as the study of all forms of life, is a broad discipline that includes efforts to improve our understanding of *humans*, which ranges from how the body works, to the sources of variation that underlie ethnicity and gender, while also considering human environmental interactions. Scientific discoveries and innovations can inform actions and policies that protect our environment and address our evolving understanding of human diversity. The discriminatory nature of humans can be enabled or contributed to by science that is faulty in interpretation, form, argument, representation etc. Yet, in spite of sometimes enabling and contributing to discrimination, science also offers the tools to refute these views. Biology 1010 provides students with the opportunity to consider the full spectrum of the human experience, ranging from sexuality and gender to race, in the context of the informative science that underlies our understanding of life.

MATERIALS REQUIRED FOR THIS COURSE:

CLICKERS: PURCHASE A CLICKER AND LICENSE

*Clickers make it possible to reward participation and get everyone engaged. We will even use the device in Jeopardy exam reviews!

- New or used **Turning Point Clicker/handheld** receiver (bookstore: ~ \$33)
- One device **license** (bookstore: ~\$28). A license is valid for 1-year and allows you to register the clicker for multiple courses. *The Turning Point Clicker was adopted by the U and will likely be used in other courses.*
- *The phone App **will not** be used in this course due to issues with cell phone/app/instructor receiver connectivity and because internet access is not allowed during quizzes.*

IMPORTANT: YOUR CLICKER may only be registered to BIOL 1010 through our Canvas course pages

- **Navigate** to the BIOL 1010 Canvas course
 - *Once in Canvas, navigate to Modules, read the instructions and then use the Clicker registration tool.*
- **Using your clicker:** Biology 1010 will be using **Channel-55**. See following page for how clicker engagement will be graded.

REGISTER your CLICKER by Th, Aug 22 to participate in a practice session and by **T, Aug 27** to begin earning credit.

TECHNICAL SUPPORT FOR CLICKERS: Bria Bennett | Turning Tech., bbennett@turningtechnologies.com

CANVAS: Connect to BIOL 1010 through your CIS page or via utah.instructure.com

Go to Canvas settings and setup your phone to receive Canvas assignment information and emails.

- *Important course information, text-based content, and assignment details are always available to you through Canvas.*
 - **Communications:** You will find important announcements and can correspond with TAs and me through Canvas email
 - **Canvas Modules (find course materials):** BIOL 1010 does not require you to buy a costly science textbook. Instead, I post study materials in Canvas (Modules, see weekly content), where you will find lecture outlines, readings/videos, and practice problems
 - **Canvas Grade Book:** Clicker quizzes/participation, assignments, and exam grades

TECHNICAL SUPPORT FOR CANVAS: Email: classhelp@utah.edu **or phone:** 801-581-6112 (option 2)

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Diversified assessments support your success in this survey course by recognizing students have different learning styles. Your final course grade will be weighted based on these categories:

- 60% Modules A, B, C Exams** (3 exams, short answer questions, ~60 - 75 minutes in length)
 - Exams are module specific (some fundamental concepts carryover). There's no comprehensive exam in 1010.
- 20% Quizzes, in class exercises, guest lectures, and homework** (6 or 12 points, 3 drops)
 - Clicker quizzes and assignments may or may not be announced, so students should come to class prepared
 - Quizzes and most assignments are valued at 6 points. Some larger assignments and guest lectures are valued at 12 points and may not be dropped. *Canvas automatically drops your lowest or missed scores.*
- 20% Attendance and Participation, opinion polls, jeopardy reviews** (6 points/day, 5 drops)

Dropped Quizzes and Attendance: *The primary reason for allowing you to drop 3 quiz scores and 5 attendance days is to accommodate emergencies and officially excused events. To keep things fair for all, there will be no additional opportunities to make up missed days or assignments. If you are unable to take a quiz or if you miss a class, you will receive a "0". This includes events such as illness, jury duty, funerals, weddings, birth of a baby, forgetting to bring your transmitter to class, dead batteries, or malfunctioning transmitters.*

Final Grades (track your grades on Canvas) Grades are not curved & are assigned according to the scale below.

(A)= 93-100%	(A-)= 89-92%	(B+)= 86-88%	(B)= 81-85%	(B-)= 78-80%
(C+)= 75-77%	(C)= 69-74%	(C-)= 65-68%	(D)= 55-64%	(F)= <55%

**Please follow your grades on Canvas. Once a grade is posted, you have 1-week to inquire about missing or incorrect grades.*

Strategies for succeeding in BIOL1010

- Attend class. Participation is a major part of your grade. Also, there's no text in this contemporary topic course, so gathering notes and recognizing what has been emphasized during class will make studying and doing well on exams and quizzes easier.
- Print lecture outlines and bring them to class for notetaking. **outlines posted on or before 5PM the day before class*
- Review lecture notes weekly and to prepare for in class quizzes
- Succeeding on exams (support materials posted weekly, please navigate to Canvas Modules)
 - Review required readings/videos (posted to Canvas) and take notes on this information; complete weekly review questions
 - Attend TA/Instructor office hours to address homework and lecture questions

**Last minute, or inconsistent study efforts, will result in lower exam and quiz scores*

Learning outcomes:

Students in Biology 1010 will...

Basic Concepts

- understand cells and the DNA molecule in the context of the human body, genetics, disease & wellness
- appreciate modern DNA technologies and the environmental and ethical controversies surrounding their usage
- appreciate how microevolutionary change has contributed to diversity in the human population
- understand that while genetics have influenced diversity, humans remain 99.9% the same on a molecular level
- understand how to find reliable scientific information, and when we should question data or seek more details
- understand current and emerging communicable disease (microbes, viruses, etc...), relationships to our changing climate and challenges managing global health

Biology and Society

- understand the limitations to, and potential contributions of biology and science to: society, business, marketing, engineering, human health, and human interactions
- understand scientific evidence can be used to advise policy makers, educate youth, and reduce bias to build a more informed citizenry
- appreciate how to engage in a multi-stakeholder dialogue to consider the limitations and potential for using scientific information

Systemic Oppression and Diversity

- understand that race is a social construct, that is not underpinned by science
- appreciate how gender bias and socioeconomic status have influenced medical research and discoveries, thereby compromising data and medical treatments that are based on this information
- be able to relate historic and/or modern examples of miscommunications, atrocities, and information distortions in the name of science to diversity, privilege, and oppression
- understand there is cellular, genetic, and evolutionary evidence to support a non-binary definition of gender
- gain an understanding of environmental privilege and the challenges we face advancing environmental justice
- understand there are resources, courses, and other opportunities to support building a more inclusive campus community
- learn to assess their own perspectives and views critically in order to address biases and perhaps discriminatory tendencies

Research

- understand the research process, gain basic analytical skills, and appreciate how scientific studies are conducted to add to our basic understanding of life and ecosystems
- understand historic and modern connections to ethical considerations in obtaining consent for recruiting research subjects
- appreciate how privilege, coercion and socioeconomic status factor into recruiting volunteers

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COURSE CALENDAR

BIOL-1010 is divided into 3 parts, Modules- A, B & C. Each section ends with an exam. (please note the dates listed)

- The topic list in this contemporary course is subject to change based on news, time available, and guest speaker schedules
- Build outstanding lecture notes by printing the outlines (posted to Canvas--Modules on or before 5pm the day prior to a class)
- Additional assignments, as well as required and recommended readings, will be posted on Canvas (navigate to Modules)

Guest lectures are required (12 points applied to quiz category). In addition, content from guests will be incorporated into exams. Please find the guest lecture bios and schedule on Canvas/Modules. Guests may be added during the semester. New guests will be announced during class and posted to Canvas.

<p>MODULE-A DATES</p> <p>Course content begins</p> <ul style="list-style-type: none"> ▪ Aug. 20 <p>Practice using clickers</p> <ul style="list-style-type: none"> ▪ Aug. 22 <i>To participate, you must register your device to BIOL 1010 using the Canvas course tool located in Modules.</i> <p>First clicker quiz (for credit)</p> <ul style="list-style-type: none"> ▪ Aug. 27 <hr/> <p>Lecture & Jeopardy Review</p> <ul style="list-style-type: none"> ▪ Sept. 19, 9:10 – 10:30AM <p>Sept. 24... Module-A exam</p> <ul style="list-style-type: none"> ▪ Sept. 24, 9:10 – 10:30AM 	<p>Module-A: Introduction to biology and research</p> <hr/> <p>General topic list: Scientific process: scientific method, sexual fitness & mate selection; natural and artificial selection; racism vs. ancestry; microevolution: human adaptations, environmental change; Nobel Prize winning research and the challenges science and medicine face undoing dogma; Research and medicine: implicit bias, discrimination, problems with a “one size fits all” approach to medicine; homeostasis: disease, environment; what is it to be alive</p>
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----- FALL BREAK: OCTOBER 6 -13 -----

<p>MODULE-B DATES</p> <hr/> <p>Lecture & Jeopardy Exam Review</p> <ul style="list-style-type: none"> ▪ Oct. 31, 9:10 – 10:30AM <p>Module-B Exam</p> <ul style="list-style-type: none"> ▪ Nov. 5, 9:10 – 10:30AM 	<p>Module-B: The secret of life</p> <hr/> <p>General topic list: Cells, viruses, bacteria, antibiotics; DNA-genes-mutations, disease, epigenetics, twins, fertility treatments, human genome sequence: technology, forensics, personal DNA analysis (ancestry, health); Cancer: DNA, cells, Henrietta Lacks, medicine, and discrimination; Heredity and genetics; Gender and Biology Sex, it's not as simple as XX and XY</p>
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<p>MODULE-C DATES</p> <hr/> <p>Lecture & Jeopardy Exam Review</p> <ul style="list-style-type: none"> ▪ Dec. 3, 9:10 – 10:30AM <p>Module-C Exam, CSC 205</p> <ul style="list-style-type: none"> ▪ Dec. 5, 9:10 - 10:30AM 	<p>Module-C: Ecosystems, energy, pollution, sustainability and equity</p> <hr/> <p>General topic list: Conservation biology; habitat fragmentation, overuse (land use and animals), invasive species; environmental inequality; fossil fuel dependence, climate change (direct and indirect consequences); food webs, environmental justice</p>
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Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.

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CLASS CONDUCT

Inclusiveness: The University of Utah considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. The university expects every member of the campus community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community.

Classroom environment: Throughout the semester class discussions, lectures and assignments will incorporate issues centered on race/ethnicity and gender. The content in this course will explore historical and modern perspectives that are relevant to science. The science will afford you with opportunities to consider how misinformation, flawed science and/or privilege contributes to discrimination and stereotypes. Please be respectful when sharing your own thoughts, ideas and perspectives.

Cell phones, MP3 Devices, Tablets and Computers: Usage is **not allowed** at any time during lectures & class activities unless the devices are integral to instruction. This includes text messaging. Students using one of the devices listed during class activities or lecture will receive a "0" for work that day. This policy will be strictly enforced. Electronic devices are disruptive to neighboring students.

Academic Misconduct/Plagiarism: *Copying entries produced by other students (homework, papers, etc..) &/or copying information from a reference (without proper citation) is considered plagiarism. Unless specified, all student work should be independently written, even when students are collaborating or working together to answer questions for an assignment. Students who plagiarize will forfeit all credit for an assignment. *Plagiarism will be reported to Academic Affairs.*

Faculty/Student Responsibilities:

All students are expected to behave in a professional manner & refrain from cheating, plagiarism & other unethical behaviors, as outlined in Student Code. It is the instructor's responsibility to enforce appropriate behavior in the classroom in order to maintain a climate conducive to thinking & learning, with consequences ranging from verbal warnings to dismissal from the course. Students may appeal such action to the Student Behavior Committee.

CAMPUS SERVICES

The Americans with Disabilities Act. The U seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the [Center for Disability Services](#), 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Addressing Sexual Misconduct. Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS). Find more resources at the U: Victim Advocates (advocate.wellness.utah.edu or 801-581-7779), Counseling Center (counselingcenter.utah.edu or 801-581-6826)

Names/Pronouns. Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name". We will do our best to honor you by referring to you with the name and pronoun that feels best for you in class and/or on assignments. Please advise me (and the TAs) of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. https://lgbt.utah.edu/campus/faculty_resources.php

Campus Safety. The U values the safety of all campus community members. To report suspicious activity, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and for training resources, visit safeu.utah.edu.

Wellness Statement. Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the U. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

Veterans Center. If you are a student veteran, the U has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about support, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

English Language Learners. If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writingprogram.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please consider attending TA hours for additional support navigating weekly course materials.