This section of 1610 is held as an Instructional Video Conferencing (IVC) classes. Class sessions will be held at the scheduled times via Zoom. Quizzes and exams will also be administered via canvas during class time. Participation in the course will depend on having access to a computer and a broadband internet connection, as well as being able to use Canvas, Zoom and other online resources effectively.

If you are a student enrolled for the summer semester in need of a laptop or other technology equipment, see Marriott Library student checkout equipment. You may also reach out to Knowledge Commons during open hours for more clarification if needed at 801-581-6273. If you are in need of off-campus internet access, many Xfinity and Xmission public wireless locations are free to access. Xfinity Internet Essentials is free for 2 months to qualified customers and $9.95 in subsequent months. Students enrolled for Fall can request a mobile hotspot from Marriott Library student checkout equipment. See https://union.utah.edu/resources-spaces/basic-needs-center/ for additional COVID-related links. Please contact the instructor as soon as possible if you have concerns about these requirements. Further details are provided in the sections below.

This course introduces the workings of life from the molecular to the multi-cellular level. Topics include molecular and cellular biology, energy metabolism, genetics, information flow, and cell signaling in development. We will use active learning - a form of evidence-based teaching that directly involves the students in the learning process. Data show that active learning strategies significantly enhance student learning. Student participation both inside (worksheets and clicker questions) and outside the “classroom” is essential. Biol 1610 is a 4-credit course therefore lecture and discussion times are both required. This SF designated (Physical/Life Science exploration) course is intended for Biology majors and other pre-health science pathways. This course is part of a four-course sequence, which includes 1620 (focusing on evolution, physiology, and ecological interrelationships), and two labs, 1615 and 1625.

**Instructor: Dr. Sarah García**
I am happy to meet with you on zoom right after class (just stay logged on) or by appointment. Set up an appointment or ask quick questions by email.

**Use this email:** Sarah.Garcia@utah.edu

Put Biol 1610 in the subject line so your email can be given preference. Allow 36 hours for a response. If I haven’t answered in 36 hours, feel free to resend your message. Do not email through Canvas since these get buried. Procedural (How do I upload to canvas) or content questions are best asked on the canvas discussion board so that other students benefit from your questions and our answers. These can be answered by peers, TAs, LAs or instructor. The instructional team will moderate all discussion board questions to insure accuracy. If you ask a procedural question in an email, I will direct you to post it on the canvas discussion board.

**Lecture (required):** We are designated as interactive video conferencing (IVC) for lecture and discussion. Sign into lecture using the zoom tab on our canvas page. Make sure to have your microphone on mute unless you are called on. These are real time and interactive in order to be as close as possible to a real classroom experience while staying safe. Lectures will be at class time and you signed up for a discussion time that fit your schedule. Four missed classes are allowed before the participation points start affecting your grade. Please be aware of time zone concerns, as lectures/discussions are listed as Mountain Time.
A class may begin with a discussion designed to review the previous class and assess student learning. In both lecture and discussion, you will use an audience response system, the Reef App (or zoom polling), to answer questions for participation points and to uncover misconceptions.

**Discussions (required):** Sign into your discussion session using the zoom tab within your registered canvas discussion page. Make sure to have your microphone on mute unless you are called on or you are in a breakout room. Please keep you cameras on during breakout rooms. You can ask question using zoom chat or the raise hand function. This course offers Teaching Assistants (TAs) as well as Learning Assistants (LAs) for class help. TAs and LAs are undergraduate students who, through the guidance of weekly preparation sessions and an LA pedagogy course, facilitate discussions among groups of students that encourage active engagement, uncover misconceptions, and overcome content hurdles. They can help you with all course assignments and class concepts. They will not simply “give you the answer”. They will instead direct and empower you to figure out the answer on your own. Discussion times are listed on the canvas homepage under the Instructional Team tab. For selected core or challenging concepts, worksheet activities may be done to help improve student comprehension.

**Required Materials**

**Textbook:** Biology, How Life Works, *Third Edition*, 2019. Authors: Morris J, Hartl D, Knoll A, Lue R, Michael M. Publisher: Macmillan Education. **The ebook subscription is included in your registration cost** unless you opted out using the opt out link on the registration page. This $60 fee includes 2-years access to the E-book with Launchpad learning software and a 12-month subscription to the iClicker Reef App software. Please click on the START HERE link on our Biol 1610 canvas home page to access instructions for connecting to Launchpad, ebook and iClicker Reef. Help will also be provided on the first day of class.

**Electronic Devices:** Students will use their primary electronic device (laptop/tablet/smart phone) to access course content and to participate in course activities. Make sure you have a web camera for discussions, questions, and exam proctoring. Clicker questions can be answered on your primary device or a secondary device (tablet/ smart phone) can be used. Do not use your electronic devices during class for non-course related activities.

**Zoom Etiquette:** When you join our live class on Zoom, please conduct yourself in the same manner as if we were in a face-to-face classroom. Join the Zoom meeting 5 minutes early to make sure you can connect because class will start promptly on time. As you join, please make sure that you are muted the entire time unless you are asking a question. To ask a question during class, feel free to ask it over Zoom chat, which will be monitored by the TAs, or use the raise of hand function in Zoom and wait to speak until the instructor or a TA calls on you. In Zoom chat, please only post messages that are relevant to the class. The instructor has the right to ask you to leave the zoom classroom for inappropriate behavior.

During discussions, you will be placed in breakout rooms with around 4 other students for a discussion or to complete a learning activity. During group work, please participate with your group and have your video camera on unless you have connection issues. If you have any reason that you are unable to have your webcam on, please let the TA or LA know. We will remind you to put your camera on if it is off.

To join class or discussion, please go to our class on canvas and click on the Zoom tab. There you will see all upcoming scheduled meetings, including the meeting to join our class (this link will be the same for all class days and your scheduled discussion, (unless an announcement is made on Canvas). Do not join from calendar link or other ways, **join with zoom tab on canvas.**
Course Structure
This course uses Canvas to guide student learning through three components: Pre-class, In-class and Post class work. Please click on the "Start Here" Link on the Canvas home page to find details about the course and a canvas course navigation video that lays out the structure of the course on canvas.

Please note: this course is conducted as an IVC (Instructional Video Conferencing). This means lectures are in real-time. Lectures are not recorded and will not be posted. If you will be missing a lecture or discussion, obtain class notes from another student; TAs/LAs and the instructor will not provide notes. No component of this course may be recorded by a student nor posted/shared in any capacity as this would constitute a FERPA violation for this class and/or copyright infringement.

Pre-Class: Will include assigned readings, videos to watch, self-study, and an online pre-class graded assignment that is linked on Canvas. These required assignments will be posted on canvas on the pre-class page for each class, and will be available the Friday prior to class. Each pre-class online assignment is due by 9 am the day of the class.

In-Class: A class may begin with a discussion designed to address misconceptions revealed by the pre-class assignment and extend student learning by in depth discussion of key concepts. An audience response system, the Reef App, will be used to assess student learning. Power point slides of the lecture are available and you should take notes on these slides.

Discussion: For select core or challenging concepts, a learning activity will be carried out to help improve student comprehension. Worksheets for discussion activities will be graded and need to be submitted on Canvas by midnight (mountain time) the day of discussion.

Post-Class: Students are expected to read the book, review class-notes and reflect upon the in-class session. Students complete graded Draw to Learn assignments for each class and an online post-class assignment for each week's coursework. Due dates are posted and appear on the Canvas TO DO list.

Quizzes and Exams: Quizzes and exams will be administered during class time on the days indicated on the schedule using the Quizzes tab on Canvas. Each quiz will be timed, 20-30 minutes, and will be on the material since the last quiz. The midterm exam will take the entire class time and the final is two hours. Even though these quizzes and exams are online, they are to be taken as if they were in a face-to-face classroom, meaning no cheating, no notes, books, friends, or use of the internet. These quizzes and exams are intended to motivate your studying, improve long-term retention, and to help you gauge how well you are understanding the materials for this course. Do not share any information about the quiz with other students or give any form of assistance. If we find evidence of cheating on a quiz, including working with another student or uploading questions to an online website, all students involved will be given a failing grade in the course.

Assignments and Grading
Course grade will be determined from your percentage score out of 751 total points. Cumulative scores of 90%, 80%, 70% or 60% will guarantee grades of not less than A-, B-, C- and D respectively.
See Assignment and grading table below.
<table>
<thead>
<tr>
<th><strong>Assignment</strong> (Goal) <strong>Information</strong></th>
<th><strong>Approximate Total Points</strong>*</th>
<th><strong>Notes</strong></th>
</tr>
</thead>
</table>
| **Pre-class** (Students explore and engage material before lecture)  
*Canvas pages include pre class work and Launchpad assignment* | **54 pts**  
(3 pts each) | -Students have 3 attempts per assignment.  
-Canvas will automatically **drop 4 lowest** scores.  
-Students will use score drop for missed assignments. |
| **In-class clickers**  
(Assess learning and identify misconceptions)  
*Students will use the Reef app to participate in clicker activities. Subscription is included with textbook.* | **42 pts**  
(2 pts each) | -We will **drop 4 lowest** class clicker scores  
-Students must answer 75% of questions each day to get participation points.  
-Attendance  
-Students will use score drop for missed assignments. |
| **Post Class: Draw to learn**  
*Directions and upload link is on canvas. Upload a picture of your drawing from your notebook.* | **90 pts**  
(5 pts each) | -Canvas will automatically **drop 4 lowest** scores.  
-Students will use score drop for missed assignments. |
| **Post-class: Assessments**  
(Reinforcement, and practice)  
*Canvas pages include post class work; and Launchpad assignment.* | **36 pts**  
(3pts each) | -Canvas will automatically **drop 4 lowest** scores.  
-Students will use score drop for missed assignments. |
| **DISCUSSION Clickers**  
*Students will use the same Reef app as used for lecture clickers. Each discussion section has a separate iClicker roster to join.* | **39 pts**  
(3 pts each) | We will drop lowest discussion clicker score  
(2 missed weeks allowed). |
| **DISCUSSION Worksheets**  
(Reinforce core concepts, metacognition, practice)  
*Worksheets will be on Canvas Discussion pages. There is usually one worksheet per class so most weeks there are 2 worksheets per discussion* | **80 pts**  
(5 pts each) | -Work in groups in zoom break out during discussion activity time, and after class on discussion board with peers, LAs/TAs. Upload link will be on canvas (like DTL)  
-Canvas will automatically **drop 4 lowest** scores or missed assignments. |
| **Quizzes**  
(Evaluate at regular intervals)  
*In class, on paper, see schedule for dates* | **60 pts**  
(20 pts each) | -Three 20-point quizzes  
-Practice exam-style questions  
-Will help students and instructors evaluate learning.  
-No drops |
| **Mid Term exam**  
(Summative assessment)  
*In class, on paper, see schedule for dates* | **200 pts**  
(100 pts each) | -TWO 100-point mid term exams.  
-No drops  
-Practice exams will be posted on Canvas |
| **Final exam**  
(Summative assessment)  
*In class, on paper, see schedule for dates, compulsory i.e. E for not taking* | **150 pts** | COMPREHENSIVE Final  
-No drops  
-Practice exam will be posted on Canvas |
| **Homework**  
(45%) | **341 pts**  
410 pts Q&E  
=751 **Total pts** | *Approximate total point means that your instructors may skip an assignment and decrease the total points but point values and number of drops will not change.* |
Expected Learning Outcomes
After this course students should be able to...

- Recall and describe the four major classes of biomolecules and their relationships to cellular structures and functions.
- Explain the cellular and molecular basis of energy use and conversion.
- Apply the principles of genetics to explain how information is stored, transmitted and used.
- Provide examples of how multicellular organisms are complex cellular networks that integrate and respond to information.
- Read and interpret scientific literature, graphs and data.
• Communicate scientific concepts through individual and group activities.
• Evaluate interactions between biology and society.

Broad Learning Objectives for Core Concepts in Biology

• **Evolution.** Students will be able to apply the principles of natural selection and mechanisms of genetic change, including trait variation and heritability, to explain the observed diversity of life that has arisen over long-term as well as recent evolutionary time frames.

• **Transmission, flow and interpretation of biological information.** Students will be able to apply a knowledge of genetics, gene expression, growth and development, signal perception and transduction, and physiological regulation to explain how information is stored, transmitted and utilized in biological contexts.

• **Structure and function.** Students will be able to apply knowledge of molecular, cellular, and organismal structures to explain the diverse set of functions – ranging from the sub cellular to behavioral to ecological – that underlie the remarkable diversity of individual organisms as well as communities of organisms.

• **Systems.** Students will be able to explain how biological units interact to give rise to emergent properties at multiple levels of biological organization. These interactions range from the cycling of matter and energy at the subcellular to organismal to biogeochemical scales to the interaction and interdependency of organisms, including humans, with their environment.

• **Ability to apply the process of science.** Students will be able to apply the process of science to identify knowledge gaps, formulate hypotheses, and test them against experimental and observational data to advance an understanding of the natural world.

• **Ability to use quantitative reasoning.** Students will be able to use mathematical and computational methods and tools to describe living systems and be able to apply quantitative approaches, such as statistics, quantitative analysis of dynamic systems, or mathematical modeling.

• **Ability to participate in the interdisciplinary nature of science** through clear communication and collaboration with other disciplines. Students will be able to apply concepts and sub disciplinary knowledge from within and outside of biology in order to interpret biological phenomena, communicate with clear written and oral arguments, and work collaboratively to solve problems.

• **Ability to explain the relationship between science and society, and engage.** Students will be able to evaluate the interactions between biology and society, including the societal impacts of biological research as well as public perception and decision making about science, and clearly communicate biological concepts and their implications to broad audiences.

Course Policies

Please note: This classroom is an identity-affirming space, and you are expected to respect the identities of fellow students, including (though not limited to) identities such as nationality, ethnicity, veteran status, ability status, sexual orientation, gender, gender presentation, and in general all LGBTQIA+. This includes, though is not limited to, using self-identified names and pronouns of your classmates, and in general addressing everyone in the class with respect. Behavior otherwise will not be tolerated and you will be required to leave the lecture at the sole discretion of the instructor.

No component of this course may be recorded by a student or posted/shared in any capacity as this would constitute a FERPA violation for this class and/or copyright infringement.
**Missed assignments:** Generously, two or three grade drops are provided for all assignment types (except exams and quizzes) to accommodate low scores or assignments missed due to unexpected issues. **There will be absolutely no make ups for any missed assignments.** Do not email the instructor asking otherwise.

**Rescheduling exams:** You can arrange to take make-up exams or quizzes **only** under extenuating circumstances, for example if you are hospitalized or are under arrest. In all circumstances, makeup exams require official documentation, and instructor permission. If you have an unplanned medical or legal emergency and are unable to make it to an exam, contact your instructor immediately (within 24 hours).

**Regrading quizzes and exams:** If you believe that there has been a grading error, please check the information in your textbook or discussion first. Then explain, in formal writing, why your answer should have been awarded more points using sound scientific reasoning. Please include documentation of your original answer. Please be specific and professional. Regrade requests are accepted within 7 days of the exam return and are subject to instructor review. Regrade request submission does not guarantee awarding of credit.

**Attendance & Punctuality:** The University and your instructors expect all students to attend all class meetings. Students are expected to acquaint themselves and satisfy the entire range of academic objectives and requirements as defined by this syllabus.

**Electronic Devices in Class:** Students are encouraged to use their primary electronic devices (laptops/tablets) to access course content. Devices may only be used for course-related material during class, and the instructor holds the right to ask you to leave the zoom class room for such behavior.

**Equipment Failure:** It is your responsibility to maintain your electronic equipment for participation in the course assignments. If equipment failure results in missing a pre/post class assignment, **then it will count towards one of your drops** and does not require an email to the instructor.

**Computer and canvas literacy expectations:** Students are expected to be computer and internet literate to take this course, including canvas navigation skills. Call 581-4000 for CIS help or bring your laptop to Knowledge Commons on second floor of Marriott Library for help. As will be explained in class, sometimes more than one browser is needed for Launchpad assignments. Post your technical issues to the class discussion board and we will crowd source solutions as issues arise. For Canvas orientation, see [https://utahtacc.zendesk.com/hc/en-us/articles/205654094](https://utahtacc.zendesk.com/hc/en-us/articles/205654094).

**Online Classroom equivalency:** Discussion threads, emails, Launchpad and canvas are all considered equivalent to classrooms, and student behavior within those environments shall conform to the student code. Specifically:

1. Posting photos or comments off topic in a classroom are still off-topic in an online class forum.
2. Off color language and photos are **never** appropriate.
3. Using angry or abusive language is called flaming and is not acceptable and will be dealt with according to the student code.
4. Do not use ALL CAPS, except for titles since it is an equivalent of shouting online, as is overuse of punctuation marks such as exclamations!!!!!! And question marks?????
5. Course e-mails and other online course communications are part of the classroom and as such are University property and subject to the Student Code. Privacy regarding these communications between correspondents must not be assumed and should be mutually agreed upon in advance, in writing.
University of Utah Policies and Resources

Drop, Withdrawal or Incomplete: The University of Utah drop and withdrawal dates are on the class schedule. Also see http://registrar.utah.edu/academic-calendars/index.php. University policy allows assignment of a grade of incomplete (I) if 80% or more of the course work has been completed. We will consider assigning an “incomplete (I)” only under EXCEPTIONAL circumstances arising towards the end of the semester that are unrelated to academic performance, and only if a student is passing the course with a C or better when the “Incomplete” is requested.

Academic misconduct: All suspected cases of academic misconduct including cheating, answering clicker questions for someone else, and plagiarizing will be dealt with according to rules in the Code of Student’s Rights and Responsibility: http://regulations.utah.edu/academics/6-400.php. Take note of B 2 a, b, and c Cheating and plagiarism are serious offenses and can result in getting a zero on the assignment, failing a class, a note in your record or being expelled. Please know that looking at someone else’s exam is cheating and will be dealt with seriously as stated above. By accepting admission to the University you have agreed to abide by the University rules provided to you in the student handbook.

Student Names & Personal Pronouns. Class rosters are provided to me with your legal name as well as “Preferred first name” (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please let me know of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your UID card, please visit the LGBTQ Resource Center Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBTQ Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

The Americans with Disabilities Act: The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. 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. If you would like to request academic accommodations due to a disability, please Center for Disability Services. If you have a letter from CDS indicating you have a disability that requires academic accommodations, please present the letter to the instructor and discuss the accommodations. Please also let me know if you need any additional support in this class for any reason.

University Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, 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 to view available training resources, including helpful videos, visit safeu.utah.edu.

Discrimination and Harassment policies: The University of Utah has zero tolerance for any discriminatory or harassing behavior. 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,
Inclusive Learning Policy: We are committed to making our classroom, canvas discussions and other interactions as inclusive as possible. Mutual respect, civility, and the ability to listen to others are crucial for making our time together productive and engaging. The diversity of backgrounds and perspectives that students bring to this class are viewed as a resource, strength and benefit. Your suggestions are encouraged and appreciated. Please let your instructor know ways to improve the effectiveness of the course for you personally or for other students or student groups.

Veterans Center: If you are a student veteran, the U of Utah 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 what support they offer, 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.

LGBT Center: This class is a safe zone. Please contact me if you have any problems with other students or LAs/TAs. Additionally, the U of Utah has an LGBTQ Resource Center on campus located in Room 409 in the Olpin Union Building. Hours: M-F 8-5pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: http://lgbt.utah.edu/. Please also let me know if there is any additional support you need in this class.

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://writing-program.utah.edu/; the English Language Institute http://continue.utah.edu/eli/ Please let your instructor know if there is any additional support you would like to discuss for this class.

Wellness: 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 University of Utah. For helpful resources contact the Center for Student Wellness: www.wellness.utah.edu 801-581-7776.

Financial Wellness Center: FWC provides competent and confidential financial counseling services for students. Their goal is to help students establish healthy financial habits and knowledge that can prepare you for life long financial success. Some of the topics we cover are: budgeting, student loans, credit cards, scholarships, paying for school. Email: financialwellness@sa.utah.edu Phone: 801-585-7379 Please see the FWC website for events schedule and more info: Financialwellness.utah.edu

Campus COVID-19 Resources: See https://coronavirus.utah.edu/ for updated information on coronavirus safety guidelines and testing.

Code of Student’s Rights and Responsibilities https://www.regulations.utah.edu/academics/6-400.html

Note: This syllabus is meant to serve as an outline and guide for this course, and might be modified in response to the needs of the class. All changes will be announced in class and posted on Canvas under Announcements.