

**Biology II Laboratory (BIOL 1625)**  
Semester: Spring 2021

**I. Delivery.** Blended face-to-face. This delivery method is different for each course. For this course it means that all required course work will be online. You must attend class via Zoom during your designated class time, especially because there will be group work. There are tentative, optional face-to-face experiences planned during your designated class time for the second-half of the semester.

**II. Course objectives.** This laboratory course provides an authentic research experience to facilitate learning the entire process of science. Whereas BIOL 1615 provided experience with discovery-based (descriptive) biology, BIOL 1625 is focused on hypothesis-driven biology (experimentation). You will make progress towards the following learning objectives:

Biology Department learning outcomes	USU IDEA Center learning objectives
1. Collaborate with others and work as a team.	<ul style="list-style-type: none"> <li>• Acquire skills in working with others as a member of a team (E)</li> <li>• Develop ethical reasoning and/or ethical decision making (I)</li> </ul>
2. Practice the process of science (especially quantitative reasoning).	<ul style="list-style-type: none"> <li>• Develop specific skills, competencies, and points of view needed by professionals in the field most closely related to this course (I)</li> <li>• Learn appropriate methods for collecting, analyzing, and interpreting numerical information (E)</li> </ul>
3. Communicate interpretations to scientists and the general public.	<ul style="list-style-type: none"> <li>• Develop skill in expressing oneself orally or in writing (E)</li> <li>• Learn how to find, evaluate, and use resources to explore a topic in depth (I)</li> </ul>

**III. Training and course-based research experiences (CUREs).** Confirmation of and details about the optional face-to-face meetings will be shared via Canvas about a week before the scheduled dates. There will be a mixture of individual and group work; group work is designated below, otherwise the assignment needs to be completed individually.

Week of	<i>Delivery method &amp; Module:</i> <b>lab project</b>	<b>Assignments:</b> The week's assignments become available 9am Sundays. Pre-lab quizzes are due an hour before class. Scientific reflections are due by 5pm Fridays. See below for other due dates ( <b>in bold</b> ):
1. Jan 18 (MLK Jr. Day on Mon.)	<i>No Zoom class this week</i> <u>1. Course expectations:</u> syllabus & safety rules	<b>Syllabus quiz* due 5pm Fri.</b> <b>Safety agreement* due 5pm Fri.</b> <i>*You must receive a 100% to continue in this course. You have unlimited attempts.</i>
2. Jan 25	<i>No Zoom class this week</i> <u>2. Group work ethics - pre:</u> quiz	<b>Collaboration quiz due 5pm Fri.</b>
3. Feb 1	<i>Zoom class</i> <u>3. Experimentation practice:</u> guppy courtship & T-test	Pre-lab quiz Group contract Group scientific reflection
4. Feb 8	<i>Zoom class</i> <u>3. Experimentation practice:</u> arthropod habitat preference & 95% CI	Pre-lab quiz Group scientific reflection

5. Feb 15 (President's Day on Mon.)	<i>Zoom class</i> 4. <u>Get to know seed beetles:</u> the organism	Pre-lab quiz Group Scientific reflection
6. Feb 22	<i>Zoom class</i> 4. <u>Get to know seed beetles:</u> the scientific literature	Pre-lab quiz Group scientific reflection
7. March 1	<i>Zoom class</i> 4. <u>Get to know seed beetles:</u> research proposal review panel	Pre-lab quiz <b>Group research proposal due 5pm Fri.</b> <b>E.C. for using the SWC due 5pm Fri.</b>
8. March 8	<i>No Zoom class this week</i> 5. <u>Group work ethics - post:</u> peer evaluation	<b>Peer evaluation due 5pm Friday</b>
9. March 15	<i>Zoom class &amp; Optional face-to-face meeting</i> 6. <u>Seed beetle project: Set-up:</u> set-up project	Pre-lab quiz Scientific reflection
10. March 22	<i>Zoom class &amp; Optional face-to-face meeting</i> 7. <u>Experimental evolution:</u> week 1 of selection	Pre-lab quiz Scientific reflection
11. March 29	<i>Zoom class &amp; Optional face-to-face meeting</i> 7. <u>Experimental evolution:</u> week 2 of selection & graphing	Pre-lab quiz Scientific reflection part 1
12. April 5	<i>No Zoom class this week</i> 7. <u>Experimental evolution:</u> linear regression analysis	Scientific reflection part 2
13. April 12	<i>Zoom class &amp; Optional face-to-face meeting</i> 8. <u>Seed beetle project: Conclusion:</u> data collection & analysis	Pre-lab quiz Scientific reflection
14. April 19	<i>Zoom class</i> 8. <u>Seed beetle project: Conclusion:</u> oral communication	Pre-lab quiz <b>E.C. for IDEA survey due 5pm Fri.</b>
15. April 26	<i>No class during finals week</i>	<b>Research presentation due 5pm Tues.</b> <b>E.C. for using the SWC due 5pm Tues.</b>
16. May 3	<i>No class during finals week</i>	

#### IV. Assessing course objectives.

- **Group work ethics.** You will receive training in the ethics of scientific research collaboration and assess your knowledge with a quiz in Week 2. During your first class session via Zoom in Week 3, you will meet your group members and complete a Group Contact for credit. You will complete scientific reflections and a research proposal as a group during Zoom class in Weeks 3 – 7 (see Scientific Reflections and Group Research Proposal below). During Week 8, you will complete a peer evaluation to assess how equally you and your group members contributed to the group work. If you do not complete the peer evaluation on time with an unexcused absence (see section VII), you will receive a 0.
- **Pre-lab quizzes.** Each week, you will read a lab manual and watch a video(s) available in Canvas, then answer a few quiz questions in Canvas to help you be prepared for the week's project. The quiz will be available online the Sunday morning before the lab and will close an hour before class starts (to allow your GTA time to view quiz statistics before teaching). The quizzes must be completed

individually, they are not timed, you can have the lab manual in front of you during it, and you are allowed only one attempt. We will go over the correct answers together at the beginning of class. Canvas will automatically drop your lowest pre-lab quiz score to help out with “life happens” scenarios (see section VII).

- **Scientific reflections.** By 5pm Fridays, you will answer questions about the lab project you completed. Coming to Zoom class is required for completing the scientific reflection, such that the reflections due Weeks 3-6 are group efforts (the remaining reflections will be completed individually during Zoom class). Your GTA will provide timely feedback to help you make progress on the learning objectives throughout the semester. Canvas will automatically drop your lowest scientific reflection score to help out with “life happens” scenarios (see section VII).
- **Group research proposal.** You and your group members will write a research proposal to justify and design your own experiment using seed beetles. You will receive details in class and on Canvas. You will receive a 0 if you miss this deadline with an unexcused absence (see section VII). You are encouraged to use (and rewarded for using) the USU Science Writing Center as a resource for this assignment (<https://www.usu.edu/science/swc>).
- **Research presentation.** You will create a video in which you present the entire process of science you experienced regarding your class experiment using seed beetles. You will receive details in class and on Canvas. You will receive a 0 if you miss this deadline with an unexcused absence (see section VII). You are encouraged to use (and rewarded for using) the USU Science Writing Center as a resource for this assignment (<https://www.usu.edu/science/swc>).

Assignment group	% of grade
Group work ethics	5
Pre-lab quizzes	22.5
Scientific reflections	32.5
Group research proposal	20
Individual research presentation	20

**Grading Policy.** Your grade will be reflected by your performance on these four major assignments. Final course grades are based on the following scale and will not be rounded up to the nearest whole number: A (93 to 100%), A- (90 to <93%), B+ (87 to <90%), B (83 to <87%), B- (80 to <83%), C+ (77 to <80%), C (73 to <77%), C- (70 to <73%), D+ (67 to <70%), D (60 to <67%), and F (0% to <60%).

**V. Instructor information.** If you have questions about the course or your grade, start with your graduate teaching assistant (GTA). If the issue cannot be resolved, then involve Lauren Lucas.

Name	Role	Email address	Zoom office hours
Lauren Lucas	Course designer & lab coordinator	<a href="mailto:lauren.lucas@usu.edu">lauren.lucas@usu.edu</a>	By appt.
Mitzi Christensen	Lab safety	<a href="mailto:mitzi.christensen@usu.edu">mitzi.christensen@usu.edu</a>	N/A
Jennifer Bryan	UTF	N/A	N/A
Elizabeth Simpson	Lab prep & section 001 (honors)	<a href="mailto:elizabeth.simpson@usu.edu">elizabeth.simpson@usu.edu</a>	By appt.
Savannah Adkins	Lab prep & section 005	<a href="mailto:savannah.adkins@aggiemail.usu.edu">savannah.adkins@aggiemail.usu.edu</a>	By appt.
Brenna Decker	Lab prep & section 004	<a href="mailto:brenna.decker@aggiemail.usu.edu">brenna.decker@aggiemail.usu.edu</a>	By appt.
Ellis Juhlin	Lab prep & section 003	<a href="mailto:ellis.juhlin@usu.edu">ellis.juhlin@usu.edu</a>	By appt.
Binod Borah	Sections 020 & 026	<a href="mailto:binod.borah@aggiemail.usu.edu">binod.borah@aggiemail.usu.edu</a>	By appt.

Megan Sidran	Sections 008 & 021	megan.sidran@usu.edu	By appt.
Ryan Choi	Sections 010 & 022	ryan.choi@usu.edu	By appt.
Rosemary Hopson	Sections 006 & 015	rosemary.hopson@usu.edu	By appt.
Ally Marrs	Sections 002 & 014	allyson.marrs@usu.edu	By appt.
Jack Phillips	Sections 018 & 028	jack.phillips@usu.edu	By appt.
Jesse Tabor	Sections 007 & 017	jesse.tabor@aggiemail.usu.edu	By appt.
Veronica Urgiles Penafiel	Sections 009 & 019	veronica.urgilespenafiel@usu.edu	By appt.
Desiree Wickwar	Sections 013 & 029	desiree.wickwar@usu.edu	By appt.
Lauren Gates	Sections 012 & 024	lauren.gates@usu.edu	By appt.
Elsa Jos	Sections 011 & 023	elsa.jos@usu.edu	By appt.
Kris Pedersen	Sections 016 & 027	kris.pedersen@usu.edu	By appt.

## VI. Required course materials.

- **Course fee:** Your \$120 fee is used for computers (\$10), consumables (\$15), media/other (\$5) and GTA salaries (\$55).
- **Computer:** You will need to use a computer with a reliable internet connection to access Canvas, and for word processing, data entry, and data analysis. We will provide links to shared google data sheets for data entry and shared projects in RStudio Cloud for data analysis. Successful students follow all steps outlined each week in Canvas.
- **Safety equipment:** Because there are a few tentative, optional face-to-face meetings this semester, you will agree to abiding by lab safety requirements. Any violation will result in disciplinary action. In short, during face-to-face meetings, wear long pants/skirt and covered shoes. No food or drink is allowed outside of your bag while in the classroom. We provide PPE (disposable gloves, lab coats, goggles) for use when necessary. If you bring your own lab coat and goggles, store them in a sealed container in your bag when not in use and clean them frequently at home.
- **Printing:** You may want to use printers on campus. For locations, see: <http://campusprint.usu.edu/>

## VII. Late work & USU's attendance policy.

The university views class attendance and submitting assignments on time as an individual student responsibility. You may not attend a lab other than the one for which you are registered. Your GTA will not provide you an opportunity to make up work missed because of an unexcused absence.

- **Unexcused absences include:** family vacation; work; unreliable internet; accidentally forgetting a deadline. Remember, Canvas drops your lowest pre-lab quiz and scientific reflection scores to help out in a case like these.
- **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; 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 GTA with written evidence substantiating the reason for the absence prior to the due date of the assignment if feasible. In cases where advance notification is not feasible, the student must provide written documentation by the end of the second working day after the missed assignment's due date. Maintaining good communication with your GTA and group members during difficult times is important. If the absence is excused and properly documented, you must complete

the missed assignments within 14 calendar days of the original due date of the missed assignment. Note that excused absences may not exceed 20% of the class meetings. Thus, we will allow make-up work for a maximum of assignments missed during two different weeks of this semester. If you miss assignments during additional weeks beyond this, you will receive 0s on those assignments.

**VIII. COVID-19 classroom protocols:** In order to continue to provide various forms of face-to-face instruction at USU, and to limit the spread of COVID-19 during the pandemic, students are asked to follow certain classroom protocols. These protocols are based on CDC, state, and local health department guidelines and requirements are in place not only for your safety but also the safety of the entire campus community.

- Face coverings are required in all classrooms and teaching laboratories. Students will not be permitted to remain in class without a face covering, as per University Policy 20T.3. Students that do not adhere to the face covering policy will be referred to the Office of Vice President for Student Affairs for a possible violation of the Student Code of Conduct. There may be individual medical circumstances that prevent some students from using face coverings. If you require this exemption, contact the Disability Resource Center prior to the start of classes to investigate alternative instruction. These circumstances will be rare, but if they do exist, we ask that everyone be respectful.
- Follow faculty instructions regarding social distancing and entering/exiting classrooms.
- Stay home when you are sick, however mild your symptoms.
- Wash your hands frequently with soap and water.

**IX. Academic freedom and professional responsibilities:** The university is a community dedicated, through promulgation of thought, truth, and understanding, to teaching, research, and service. It must therefore, be a place where innovative ideas, original experiments, creative activities, and independence of thought are not merely tolerated but actively encouraged. Thought and understanding flourish only in a climate of academic freedom and integrity, expressed collectively by colleges and departments as well as individually through research and teaching and as they exist within the wider context of advanced study as commonly understood by all universities. The community also values diversity and respect, without which there can be no collegiality among faculty and students. In addition, the university community values individual rights and freedoms, including the right of each community member to adhere to individual systems of conscience, religion, and ethics. Finally, the university recognizes that with all rights come responsibilities. USU Policy 403 further defines academic freedom and professional responsibilities.

**X. University regulations regarding student conduct:** The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. "Disruptive classroom behavior" involves physical actions, verbal utterance, or other activities which interfere with either the faculty member's ability to conduct the class or the ability of other students to profit from the instructional program. For more information: <http://studentconduct.usu.edu/studentcode/article5>

**XI. Final examination: no-test days policy:** For classes that meet for a full semester, a five-day period designated as "no-test" days precedes final examinations. During this time, no major examinations, including final examinations will be given in order that students may concentrate on classwork, the completion of special assignments, writing projects, and other preparation for duly scheduled final examinations. Approved exceptions include final papers, weekly chapter quizzes, quizzes, projects, and examinations associated with a lab that does not meet during final examinations.

**XII. Academic appeals:** When a student feels that he/she has been treated unfairly by a specific professor or existing rules or regulations, there is a sequential process which should be followed in handling the situation. Problems in this area include disagreements regarding a course grade, intervening circumstances which prevented the student from following an assigned procedure, etc. When a student experiences such difficulties, he/she should first go to their GTA within two weeks of receiving the posted grade in Canvas. It

may be possible to resolve the problem at this level. Should no agreement be reached, the student may then take the situation to the lab coordinator. Should no agreement be reached, the student may then take the situation to the department head. If no resolution is reached at that level, the student may take the problem to the dean of the college. If there is still no resolution, the matter will be forwarded to an appeals committee. As a final recourse, the student may take the problem to the Provost's Office, where a final decision will be made.

### **XIII. The honor system and plagiarism:**

The University expects that students and faculty alike maintain the highest standards of academic honesty. The Code of Policies and Procedures for Students at Utah State University (Student Conduct) addresses academic integrity and honesty and notes the following:

- Academic Integrity: Students have a responsibility to promote academic integrity at the University by not participating in or facilitating others' participation in any act of academic dishonesty and by reporting all violations or suspected violations of the Academic Integrity Standard to their instructors.
- The Honor Pledge: 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". Violations of the Academic Integrity Standard (academic violations) include, but are not limited to cheating, falsification, and plagiarism.
- 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. In BIOL 1625, depending on the assignment, you will be asked to repeat the assignment without plagiarism within a certain time frame or you will receive a 0 on the assignment that included plagiarism. If you contest, we will involve the Office of Student Conduct.

**XIV. 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](mailto:drc@usu.edu)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

- Service Animals in Biology Labs: Utah State University is committed to providing access for service dog handlers. Due to the unique nature of the laboratory environment service animal handlers must meet with the Disability Resource Center prior to bringing a service dog into the lab. The purpose of this meeting is not to prevent you from having your service animal with you but rather to understand how to best accommodate your needs and the needs of your animal. Please contact the Disability Resource Center at 435-797-2444 or [drc@usu.edu](mailto:drc@usu.edu) to set up an appointment. Note that it is USU policy that other animals, including emotional support animals, are not permitted in USU buildings or facilities without the express permission of the organization responsible for that particular building.

**XV. Mental health:** Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at Counseling and Psychological Services (CAPS).