Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: BIOL
Course and Section #: 1615 - 229
Course Title: College Biology II
Credits: 1

Course Description

Laboratory course to accompany BIOL 1610. Topics covered include scientific method, biomolecules, cell structure and function, cellular reproduction, Mendelian and molecular genetics, DNA technology, and evolution.
Course Lab fee of $24 applies.

Course Attributes

This course has the following attributes:
☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☐ Open Elective
Other: *Click here to enter text.*

Instructor Information

Instructor Name: Ashton Sorensen

Student Learning Outcomes

1. Demonstrate safe and effective use of basic laboratory equipment and reagents.
2. Conduct inquiry – based labs involving the study of biological processes including diffusion and osmosis, photosynthesis, and cellular respiration.
3. Explain the mechanisms governing the functions and/or processes regulating biological macromolecules, cell division, genetics, evolution, and biotechnology.
4. Effectively communicate scientific findings and data interpretations with peers verbally and through written laboratory reports.
5. Incorporate primary, peer – reviewed, scientific literature into written laboratory reports.

Course Materials and Texts

No required materials or texts

Course Requirements

Course Assignments, Assessments, and Grading Policy
Pre-Lab Quizzes: Weekly quiz to prepare for in class lab activities. 220 points
Lab Worksheets: Weekly worksheet for guidance and reporting of lab activities performed in class. 330 points
Project Check-ins: Weekly check-ins to foster progress and guidance on Student Designed Research Projects. 94 points
Project Proposal: A proposal written to receive approval from the instructor to proceed with experimentation for the Student Designed Research Project. 60 points
Lab Reports: A full report on the first experiment of the semester and another on Student Designed Research Projects. 125 points
Feedback Reviews: Summary of feedback provided by instructor. 30 points
Final Presentation: Presentation to the class on the Student Designed Research Project. 70 points
Peer Review, Group and Peer Evaluations: Peer review of another groups first lab report. At the end of the term, students evaluate their personal contributions as well as contributions of groupmates. 60 points
Pre and Post Test: Evaluations given at start and end of semester to assess learning. 30 points
Syllabus and Safety Agreement: Confirmation that lab and course policies have been reviewed and accepted. 6 points

There are 50 additional points possible in the course than what the final score is calculated out of. Total points earned are divided by the total points possible (minus 50 points stated above) in order to calculate final grades. No point rounding occurs and final grades are assigned the corresponding letter grade:

A = 93-100	B - = 80-82.9	D+ = 67-69.9
A - = 90-92.9	C+ = 77-79.9	D = 63-66.9
B+ = 87-89.9	C = 73-76.9	D - = 60-62.9
B = 83-86.9	C - = 70-72.9	F = 0-59.9

Required or Recommended Reading Assignments
All required readings are provided via "Background Documents" accessible via Canvas. These are written by UVU Biologists and align with lab topics listed below.

General Description of the Subject Matter of Each Lecture or Discussion
Lab 1 and 2: Lab Safety and Scientific Method – Course introduction, lab safety, scientific observations, research questions, background research, hypothesis formation, experimental design, data analysis, reporting

Lab 3: Metric System and Solutions – Usage of common scientific tools, metric measurements, making solutions

Lab 4: Biological Macromolecules – Detection of biological macromolecules, experimental controls, data collection

Lab 5: Microscopes and Cells – Usage of microscopes, structure of plant and animal cells, diffusion/osmosis

Lab 6: Cellular Respiration – Aerobic and anaerobic respiration, cellular pathways associated with respiration, experimental design

Lab 7: Photosynthesis – Photosynthesis, cellular pathways associated with photosynthesis and relation to respiration, experimental design

Lab 8: Research Project Experimentation – Perform or continue Student Research Projects, finalize data collection

Lab 9: Cellular Division – Mitosis and Meiosis, chromosome and chromatid functions during cell division

Lab 10: Mendelian Genetics – Inheritance, complete dominance, incomplete dominance, codominance, Punnett squares, dihybrid cross

Lab 11: Biotechnology – STR's, electrophoresis, DNA and enzymes

Lab 12: Population Genetics – Natural selection, Hardy-Weinberg, allele frequencies

Lab 13: Final Presentations – Presentations of Student Designed Research Projects

Required Course Syllabus Statements

Generative AI

Plagiarism is the act of appropriating any other person's or group's ideas or work (written, computerized, artistic, etc.) or portions thereof and presenting them as the product of one's own work in any academic exercise or study. This includes copying sentences from sources even if the source is cited. Generating and submitting any material using artificial intelligence, such at ChatGPT also constitutes plagiarism and will result in a grade of zero. Repeated offenses or blatant disregard for policy will result in failure of the course and report made to Student Conduct office.

AI is a tool with potential usefulness. However, AI is also fraught with serious issues. It possesses accuracy problems while simultaneously sounding very confident about its incorrectness. It also frequently generates fake citations and quotations. It cannot understand the complexities and contexts of human communication. Finally, the way AI is trained on other texts poses several ethical questions about copyright and intellectual theft of property (along with uncritically inheriting the biases of the texts it's trained on).

To be clear, unless given explicit permission from the course instructor, copying the wording of an AI chatbot is considered plagiarism and means that a student will be held accountable for violating academic integrity. Although many citation guides are already presenting ways to properly use and cite AI, citing AI in your work is not in line with the standards of scientific writing.

Using Remote Testing Software

☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic

honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. 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. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX
Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation
UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.
To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.