



Master Course Syllabus

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

Semester: Spring

Course Prefix: Biol

Course Title: Cell Biology Lab

Year: 2025

Course and Section #: 3405-01

Credits: 1

Course Description

Uses laboratory exercises to demonstrate topics covered in BIOL 3400. Includes experimental methods for studying cell processes, enzymes, tissue-specific proteins, organelles, and experimental design.

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: Margaret Beucher Ph.D.

Office: Science Building - Biology Office Suite Rm 242j

Teams Phone: (801) 863-5983

Email: margaret.beucher@uvu.edu

Student Learning Outcomes

Upon completion of this course, students will be able to:

1. Demonstrate the correct usage of equipment necessary for cell biology research.
2. Recognize the similarities and differences between homologous enzymes of different organisms.
3. Determine the presence of unique proteins in different tissues.
4. Analyze the components of cellular organelles.

5. Utilize the scientific process when designing and conducting independent research.
 6. Critically analyze collected experimental data.
 7. Compose a presentation on collected experimental data including graphs and charts.
 8. Formulate appropriate conclusions from the analyzed data obtained
 9. Evaluate the results of research in light of current, critically-analyzed primary scientific literature.*Click here to enter text.*
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Course Materials and Texts

No textbook is required for this course.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Point distribution

Pre-lab quizzes	25%
Lab Write-ups	<u>75%</u>
Total	100%

Required or Recommended Reading Assignments

Found within the weekly modules.

General Description of the Subject Matter of Each Lecture or Discussion

Week Topic

- | | |
|---|---|
| 1 | Introduction to class, lab safety |
| 2 | Lab 1: Pipette practice, using the microscope, staining of cells. |
| 3 | Lab 2: Mitosis and meiosis |

- 4 Lab 3: Immune cells

- 5 Lab 4: Regulation of transcription

- 6 Lab 5: Tyrosinase assay

- 7 Lab 6: Photosynthesis assay

- 8 Lab 7: Mitochondrial activity assay

- 9 Lab 8: Overview of cell culture; passaging melanocytes and determining cell density

- 10 Lab 9a: Signal transduction of melanin synthesis, design experiment

- 11 Lab 9b: Conduct signal transduction pathway experiment

- 12 Lab 10: Chicken embryonic fibroblast cell derivation

- 13 Lab 11: Plasmid miniprep and Transfection of plasmid into melanocytes or COS7 cells.
- 14 Lab 12: Labeling proteins: Immunostaining for organelles
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Required Course Syllabus Statements

Generative AI

Use of ChatGPT or other Artificial Intelligence Platforms: The use of AI technology to assist in learning is acceptable as is using the internet. However, all submissions must reference AI use and information must be paraphrased in your own words. Any submission that is copied and pasted will result in a zero grade for the assignment. Information copied and pasted from AI will receive a zero for the entire assignment.

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.