Master Course Syllabus

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

Semester: Spring 2025
Year: 2025
Course Prefix: BIOL
Course and Section #: 3400-X02
Course Title: Cell Biology
Credits: 3

Course Description

For Biology majors or those desiring more knowledge of Cell Biology.

Studies the cell as an organism emphasizing molecular basis of cell structure and functions.

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: Dr. Sebastien Tauzin

Student Learning Outcomes

Assess the importance of membrane lipid and protein components in membrane function including the production and maintenance of membrane potentials through electrochemical gradients.
Describe the structure, function, and components of the endomembrane system including the endocytic and exocytic pathways.
Analyze how the different properties of cytoskeletal elements contribute to the different functions of these polymers in cells.
Explain how motor proteins harness energy to move along cytoskeletal tracks to induce muscular contraction and intracellular trafficking.
Examine the relationships between cell-cycle checkpoints, cancer, gene mutations and environment.
Outline the basic principles of intracellular signal transduction mechanisms including response specificity, role of monomeric and trimeric G-proteins, phosphorylation and second messengers.

Evaluate the importance of cell-cell communication in coordinating function in multicellular organisms and the role of the extracellular matrix.
Compare the general mechanisms that allow some newly synthesized proteins to be released into the cytoplasm versus other cellular compartments.
Evaluate how a cell's interactions with its environment can influence cell morphology, behavior, division, or survival.

Course Materials and Texts

A laptop equipped with internet access, camera and microphone.
Book required: Lewin's Cells, 2nd or 3rd edition.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Assessment	Points	Percentage
8 lines assignment (10x5pts)	50	19
Interactive Video Questions (25x1pt)	25	9
POGIL (3x10pts)*	30	11
Debate Flipgrid (2x5pts)	10	4
Midterm exams (3x30pts)	90	34
Project power point (10pts), project oral presentation (10pts) **NO PROJECT THIS SEMESTER**	--	-
Peer evaluation (10pts) and self-evaluation (10pts)*	20	8

Final exam	40	15
Total	**265**	**100**

**Group assignments* - *represent about 20% of your grade!*

Final %	*Grade*
93-100	*A*
90-92.9	*A-*
87-89.9	*B+*
83-86.9	*B*
80-82.9	*B-*
77-79.9	*C+*
73-76.9	*C*
70-72.9	*C-*
67-69.9	*D+*
63-66.9	*D*
60-62.9	*D-*
Below 60	*E*

Required or Recommended Reading Assignments
Book chapters: 6,9,11,12,13,14,15,16, 17,18,19

General Description of the Subject Matter of Each Lecture or Discussion

1.Membranes: Ion and small molecule transport part A

2.Membranes: Ion and small molecule transport part B

3.Microtubules

4.Actin

5.Nucleus

6.Cell cycle

7.Mitosis

8.Apoptosis

9.Cancer - part 1

10.Cancer - part 2

11.Cell signaling - part 1

12.Cell signaling - part 2

13.ECM and cell adhesion

14.Protein trafficking

15.Intermediate filaments

Required Course Syllabus Statements

Generative AI

*adapted from Temple University*Links to an external site. *statement on AI in classes.*

AI programs are not a replacement for your human creativity, originality, and critical thinking. Writing, thinking, and researching are crafts that you must develop over time to develop your own individual voice. At the same time, you should learn how to use AI and in what instances AI can be helpful to you.

The use of generative AI tools (e.g. ChatGPT, Google Bard, etc.) is permitted in this course for the following activities:

- Brainstorming and refining your ideas;
- Fine tuning your research questions;
- Finding information on your topic;
- Drafting an outline to organize your thoughts; and
- Checking grammar and style.

The use of generative AI tools is not permitted in this course for the following activities:

- Impersonating you in classroom contexts, such as by using the tool to compose discussion board prompts/responses assigned to you or content that you put into a Teams/Canvas chat.
- Completing group work that your group has assigned to you, unless it is mutually agreed upon that you may utilize the tool.
- Writing a draft of a writing assignment.
- Writing entire sentences, paragraphs or papers to complete class assignments.

You are responsible for the information you submit based on an AI query (for instance, that it does not violate intellectual property laws, or contain misinformation or unethical content). Your use of AI tools must be properly documented and cited in order to stay within university policies on academic honesty.

Any student work submitted using AI tools should clearly indicate what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, please reach out to me for a conversation before submitting your work.

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.