

Syllabus - May Session 2025

Syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course and Instructor Information

Course Title: Cell Biology

Credits: 3

Prerequisites: BIOL 1107

Professors:

Dr. Dave Daggett

david.daggett@uconn.edu

BPB 302

X6-2361

Dr. Ken Campellone

kenneth.campellone@uconn.edu

ESB 206b

x6-3326

Online Office Hours by appointment

Course Materials

Our HuskyCT site will be the central point for course materials, interactions, and communications. Always check for the latest announcements.

Lecture Recordings: As in the typical in-person course, this online course will be based on 3, ~1hr lectures per day, 5 days a week. Videos of narrated PowerPoint Lectures will be pre-recorded and posted to HuskyCT. While this “asynchronous” format will allow you to “attend lecture” at any time, **it is critical that you organize your personal schedule to “attend class” and master the related materials consistently each day**, or you risk quickly falling behind and becoming overwhelmed trying to catch up before the exam.

Lecture Notes: Lecture Notes that are based on the slides in the PowerPoint Lecture Recordings, but that may contain additional text and slides to help you preview and review the Lecture material will also be posted. Please keep in mind that while there is a lot of material in the Lecture Notes, it is less than would be encountered if we were to use an actual textbook. Understanding all of the ideas and concepts is more important than trying to memorize everything. Use **bold** and underline highlighting to help identify key terms and ideas.

Problem Sets: Success on the Exams will not come from simply memorizing the Lecture materials. Instead, it will come from being able to put your understanding of the facts and mechanisms you learned to work, thinking through, and reasoning out, the specific questions posed in our Problem Sets. Make notes on your Problem Set as you work out the questions on your own and discuss them in class, so it can act as a review resource for the exam. You must contemplate and understand all of the answers, to all of the questions. If you do this, you will succeed on the exam.

Online Problem Set Discussions: Using the WebEx link posted on HuskyCT, Dr. Daggett and Dr. Campellone will hold live online sessions each week, during which we can further explore the Lecture Note materials and concepts raised in your Problem Set questions. For these to be useful to you, it is critical to have already put in the work of listening to the Lecture Audio, carefully reviewing the Lecture Notes and attempting the related Problem Set questions, so that you have a good understanding of the material and ideas that will be explored. We will not be able to teach all of the Lecture Note material from scratch in these sessions.

Course Description

In this course, we will investigate the structural organization of cells and how these structures are utilized to accomplish the myriad tasks that cells perform. We will look at how cells are constructed and how signal transduction cascades are used to control cellular processes. Cell biology is a dynamic field; it focuses heavily on how things change with time and in response to alterations in the environment. Time-lapse video and animation will be used to help students develop a four-dimensional visualization of these processes. The functions of individual cells will then be related to the interactions of cells in tissues of multicellular organisms and to perturbations of cell function caused by human diseases.

Course Objectives

By the end of the semester, you will have gained a modern understanding of the components of cells and how they specifically contribute to cell structure and function. Equally important, you will have further developed your ability to apply critical thinking to experimental design and the interpretation of results, which is how scientists have arrived at this current understanding, and how you will advance your understanding going forward.

How to Succeed in this Course

An online course may take as much, if not more, self-discipline, motivation and self-organization from you than a traditional lecture course to create and follow a consistent schedule, so that you put in the time you need to succeed. You must keep up with the work and not fall behind. Be proactive!

Your goal is to “Master the Problem Set questions”, which require you to recall information and processes, and to put that information to work using critical thinking skills, which is what the Exams will reflect. The suggested way to do this is to:

1. Attentively watch the Lecture videos, pausing and rewinding as necessary to understand the content.
2. Review the Lecture slides again; contemplate models, figures etc.
3. Work on the related Problem Set questions
4. Attend the Online Discussions with your Professors; this is your opportunity to ask questions and clarify any ideas from the Lecture Notes and Problem Sets. Make notes in your Problem Sets that help you remember key logic and thought processes.
5. You must keep up with steps 1-3 according to the Lecture Audio Schedule in HuskyCT throughout the course. Otherwise, you won't fully benefit from the Online Discussions and you may also become overwhelmed trying to catch up in preparation for the Exam.

Course Outline

Part 1. Introduction to cell biology, methods in cell biology, membranes and proteins, transport of molecules across membranes, and signal transduction

- Introduction: What are cells? What is their basic structure?
- What are some of the techniques used to study cells?
- Review and exploration of membranes and proteins
- Membrane transporters
- Introduction to Signal Transduction

Part 2. Synthesis and trafficking of proteins to organelles, secretion and endocytosis:

- Nucleus, mitochondria, chloroplasts, peroxisomes, and the ER/Golgi.
- Vesicle trafficking, exocytosis, endocytosis, and phagocytosis

Part 3. The Cytoskeleton and Cell Dynamics

- Actin, Microtubules, and other Cytoskeletal Elements
- Molecular Motor Proteins
- Membrane and Organelle Dynamics
- Mitosis and Cytokinesis

Part 4. Specialized Cells and Tissues

- Cell Growth, Cell Cycle, Cell Death
- Cell Connections and the Extracellular Matrix
- Cell Movement, Motility, and Migration

Class Meeting Schedule and Important Dates

Our first meeting will be online at 10:00am on May 12th, via the WebEx link on HuskyCT.

Weekly Live Online Discussions: 10:00am - Noon; M, W, F for Weeks 1 & 2, and T, W, Th for Week 3.

There will be live, online pre-exam Q&As Wed 5/21 at 1pm and Friday 5/30 at 10am.

Exam 1 is currently scheduled for Thursday, 5/22 at 10:00am.

Exam 2 is currently scheduled for Friday, 5/30 at 1:00pm.

Course Requirements and Grading

The course will have a 2 exams, which will be the basis for your final grade. The format for the exams will be multiple-choice. A subset of the 100 questions distributed in the problem set (see below) will be selected and modified for use on the exams.

Our Exams are currently scheduled for Thursday, 5/22 at 10am and Friday, 5/30 at 1pm.

The exams will be taken on your computer using Respondus LockDown Browser with Monitor (webcam). Please read the following instructions carefully and make all necessary arrangements ASAP:

Students are responsible for downloading the LockDown Browser software from the link provided under the "Student Help" tab in HuskyCT and installing it on their laptop computer. It can be used on both Macs and Windows PCs, and on iPads (download the Respondus LockDown Browser from App Store). The install will require "Admin rights" on the computer. Students requiring assistance with the installation or utilization of LockDown Browser should contact UITS – HuskyTech at 860-486-4357(HELP) or HelpCenter@uconn.edu.

Webcam info: <https://confluence.uconn.edu/ikb/teaching-and-learning/huskyct/student-support/lockdown-browser-student/webcam-and-microphone>

*******There will be a "Sample LockDown Test" on HuskyCT for you to try out the LockDown Browser on your own, once you have set up your device. Please do the Sample Test as soon as you can so we can be sure everything is working for you ahead of time.*******

Academic Misconduct

The following types of academic misconduct are worth highlighting:

- Discussing exam materials with other students before everyone has completed the exam.
- Copying or sharing answers on tests
- Photographing/recording, sharing or receiving exam materials
- Having someone else take tests for you
- Communicating about the Exam via group texts or other online methods. Please note that anybody present in forums discussing exam material is committing misconduct.

During online exams, the Monitor feature of Lockdown Browser will flag you and notify the instructor for review if you leave the area, are talking with others, or potentially looking at other materials.

Depending on the act, a student could receive an F grade on the test, F grade for the course, or could be suspended or expelled. We take cheating very seriously and have unfortunately had to pursue issues in the past. Don't do it.

Feedback During the Course

Feedback on your understanding in this short, intensive course prior to the Exam is best achieved using the Problem Set questions provided as a practice exam. You must contemplate and explore the ideas behind all of the answers, understanding **why the right answers are right, and the wrong answers are wrong**. Be **proactive in asking any questions you have about the material and Problem Sets in our Online Discussions**, toward that end.

Weekly Time Commitment

You should expect to dedicate ~40 hours a week to this course. This expectation is based on the fact that for every Lecture hour (posted Audio and Notes), you will need to spend an additional 1-2 hours reviewing the material covered in the Lectures AND working on the related Problem Set Questions. More information related to hours per week per credit can be accessed at the [Online Student website](#). Note this is a 3 week, 3 credit course.

Student Responsibilities and Resources

The University of Connecticut is required to verify the identity of students who participate in online courses and to establish that students who register in an online course are the same students who participate in and complete the course activities and assessments and receive academic credit. Verification and authentication of student identity in this course will include:

1. Secure access to the learning management system using your unique UConn NetID and password.
2. Matching Student Photos from student ID or Peoplesoft with video meetings.

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important [standards, policies and resources](#), which include:

- The Student Code
 - Academic Integrity
 - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or <http://csd.uconn.edu/>.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government.” (Retrieved March 24, 2013 from [Blackboard's website](#))

Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- HuskyCT/Blackboard ([HuskyCT/ Blackboard Accessibility Statement](#), [HuskyCT/ Blackboard Privacy Policy](#))
- [Adobe Acrobat Reader](#) ([Adobe Reader Accessibility Statement](#), [Adobe Reader Privacy Policy](#)) or equivalent.
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- WebCam

For information on managing your privacy at the University of Connecticut, visit the [University's Privacy page](#).

NOTE: This course has NOT been designed for use with mobile devices.

Help

[Technical and Academic Help](#) provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, [HuskyCT](#). If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the [Help Center](#). You also have [24x7 Course Support](#) including access to live chat, phone, and support documents.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

University students are expected to demonstrate competency in Computer Technology. Explore the [Computer Technology Competencies](#) page for more information..

Evaluation of Course Experience

Students will be given an opportunity to provide feedback on their course experience and instruction using the University's standard procedures, which are administered by the [Office of Institutional Research and Effectiveness](#) (OIRE).

The University of Connecticut is dedicated to supporting and enhancing teaching effectiveness and student learning using a variety of methods. The Student Evaluation of Teaching (SET) is just one tool used to help faculty enhance their teaching. The SET is used for both formative (self-improvement) and summative (evaluation) purposes.

Additional informal formative surveys and other feedback instruments may be administered within the course.