

## Syllabus - Fall 2020

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

**Professor:**  
Dr. Dave Daggett  
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See below for Online Office Hours information

### 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 course will be based on 3, 1hr lectures per week. Videos of PowerPoint Presentations with accompanying Audio 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 week**, or you risk quickly falling behind and becoming overwhelmed trying to catch up before the exam.

**Lecture Notes:** The posted Lecture Notes are based on the slides in the PowerPoint Lecture Recordings, but may contain additional text and slides to help you preview and review the Lecture material. 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:** Each of our 4 exam blocks will have 2 sets of related Problem Set questions. These questions will have you use critical thinking to review and deepen your understanding of the facts, ideas and mechanisms covered in Lecture, and are where you will do the most active learning in this course. **To succeed on the exams, you will need to master these Problem Set questions**, as many of the exam questions will be based on these questions! (Please note that the exam questions will not be taken verbatim from the problem sets, they will be modified; trying to simply memorize the problem set question answers will work against you in the exam!) We strongly suggest that you continuously work on these questions alongside the related lectures and not fall behind. To master the questions you will need to understand both why the right answers are right AND, why all of the wrong answers are wrong. You will have many resources to help you do this (see below)!

**Blackboard Collaborate Online TA Office Hours:** The course employs multiple advanced undergraduate teaching assistants (TAs). Between them, they offer many office hour times throughout the week, allowing students ample opportunity to seek help. Attending TA office hours regularly is highly recommended (see Strategy for Success below). In our Course Content menu on HuskyCT, you will find a BlackBoard Collaborate link. This will take you to a page where you will see a main “Course Room”, and list of specific “Sessions” with all of your TAs names and office hours. Your TAs will be online at those times. You will “Join Session”, which takes you into the room, and there you can interact with your TAs to ask questions and help master the Problem Sets.

**Pre-Exam Review Sessions:** On the Thursdays prior to our Friday Exams, Dr. Daggett will hold live, online Q&A Review sessions to discuss any Lecture or Problem Set material students want to discuss. These will be held in our “Course Room” on Blackboard Collaborate and are tentatively scheduled for 1:25pm. See Exam schedule below and put these exam and review days in your calendar now..

## 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, in order 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 Exam will reflect. The suggested way to do this is to:

1. Watch and listen carefully to the Lecture Recordings
2. Review the Lecture Notes; review text, contemplate models, figures etc.
3. Work on the related Problem Set questions

4. Attend the Online Office Hours with your TAs; this is your opportunity to ask questions and clarify any ideas from the Lecture Notes and Problem Sets.
5. Make notes in your Problem Sets that help you remember key logic and thought processes; this will be helpful when reviewing the Problem Set questions before the Exams.
6. You must keep up with steps 1-3 based on the 3 Lectures/week schedule throughout the course. Otherwise, you will likely become overwhelmed trying to catch up in preparation for the Exam.

## Course Outline

### **Foundations: Basic organization of cells, some of the methods used to study cells, and a very brief refresher on membranes and proteins**

- 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

### **Communication across the plasma membrane between the cell and the outside world**

- Membrane transporters
- Introduction to Signal Transduction

### **Synthesis and trafficking of proteins to organelles:**

- Nucleus, mitochondria, chloroplasts, peroxisomes, and the ER/Golgi.

### **Communication between the inside of the cell and the plasma membrane**

- Vesicle trafficking, endocytosis, exocytosis and phagocytosis

### **The Cytoskeleton and Cell Dynamics**

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

### **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 live online at 1:25pm on August 31<sup>st</sup>, via the Blackboard Collaborate link on HuskyCT; go to “Course Room”.

### **Tentative Exam Schedule:**

**Block 1 Exam; Friday, October 2, 1:25pm**

**Block 2 Exam; Friday, October 23, 1:25pm**

**Block 3 Exam; Friday, November 13, 1:25pm**

**Block 4 Exam; Finals Week, Day and Time to be determined by Registrar.**

## Course Requirements and Grading

The course will have 4 “block” exams. The format for the exams will be 40 multiple-choice questions, that will be based on the Lecture material and Problem Sets. These 4 exams will be the basis of your final

grade and are thus very important. **The exam dates are listed above- mark your calendar now.** Except for extenuating circumstances that have been documented by the Dean of Students office (Wilbur Cross Building Rm. 203 (860-486-3426; [www.dos.uconn.edu](http://www.dos.uconn.edu)) or Student Health Services, makeup exams will NOT be given after the exam date! However, you may ask for permission to take a section exam *early* if you know you cannot attend on the scheduled date for a valid reason (i.e. professional interviews; please note that vacations, personal travel plans, graduations, social events, etc. are not valid reasons for rescheduling your exam). These requests will be considered on an individual basis. You must contact the professor prior to the exam regarding any exam-related issues or you will automatically receive a “0” for a missed exam. Students who must miss an exam due to religious observance should request to take the exam early. The University Senate has adopted the policy that “Students anticipating such a conflict should inform their instructor in writing within the first three weeks of the semester, and prior to the anticipated absence, and should take the initiative to work out with the instructor a schedule for making up missed work.”

**The exams will be taken on your computer using Respondus LockDown Browser. 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](mailto:HelpCenter@uconn.edu).

**\*\*\*\*\*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.\*\*\*\*\***

### **Feedback during the course**

Feedback in this course prior to the Exam is best achieved by using the Problem Set questions 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. You must be proactive in asking any questions you have about the material and Problem Sets in our TA Office Hours, toward that end.

### **Weekly Time Commitment**

You should expect to dedicate ~9 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 14 week, 3 credit course.

### **Student Authentication and Verification**

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.

## Student Responsibilities and Resources

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.