

BIOL 35400 Cell Biology

Fall 2009

Instructor: Edward Cluett
Office: 157 Center for Natural Sciences
Office Hours: W, Th, F 11am-12pm or by appointment
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Meetings

Lecture: MWF at 12:00 noon in 115CNS.

Lab sections are from 1-3:50 pm on Tuesday, Wednesday, Thursday in 109CNS.

Text

The Molecular Biology of the Cell (Alberts et al., 5th edition, 2007—the red book).

Course website: Students in the course are automatically enrolled in Blackboard

Course description

This one-semester, four credit course covers selected topics in cell biology and is designed to introduce students to the structure and function of the eukaryotic cell as well as the techniques used to study cells.

The course emphasizes molecular cell biology and encompasses a range of topics, from the chemical components of the cell to the formation of integrated cell communities (tissues, organs and organisms). We will focus on the structural organization of the cell (membrane-bound compartments, cytoskeleton, and cytosol, the function of these structures, and the flow of information and materials into, out of, and within the cell. We will also cover the control of cell division (cell cycle) and cell interactions (cell adhesion, cell junctions, cell signaling). Although many areas of cell biology that are more appropriate to other courses will not be covered, students will have a strong foundation for other courses.

Course objectives

Upon completion of the course, students will:

- explain how cells self-assemble and components in a cell interact with other components to form complex and dynamic systems; describe these interactions both within and between several cellular systems
- describe the chemical and physical laws that cells follow and discuss how these laws are manifested in cellular processes
- explain how cells monitor and control their internal and external environments
- describe and explain the structure, function, and organization of cells and cellular processes including building and analyzing conceptual models
- be able to collect, organize, analyze, and interpret data using techniques, tools, and protocols of the field and critically evaluate methodology
- recognize how we gain knowledge about cells and the limitations of our knowledge

Attendance

Students are expected to attend every class. Although notes are posted, audiovisual material is not.

Several labs span more than one session. Because of the preparation and equipment required for most labs, lab activities cannot be made up. For a very few activities, it may be possible to attend another section, if there is room. If you must miss a lab for any reason, it is *your* responsibility to inform the instructor as soon as possible (please contact me and Dr. Providence yourself).

Tardiness to class disrupts the concentration of other students. Announcements, such as test locations, made at the beginning of class will not be repeated. Five tardies will be considered an unexcused absence, and three unexcused absences will decrease your grade by one letter.

All electronic devices should be off during class, and headphones and other devices cannot be used or visible during exams.

Students at Ithaca College are expected to attend all classes, and they are responsible for work missed during any absence from class. Students should notify their instructors as soon as possible of any anticipated absences. Written documentation that indicates the reason for being absent may be required. These guidelines may vary from course to course but are subject to the following restrictions:

- In accordance with New York State law, students who miss class due to their religious beliefs shall be excused from class or examinations on that day. The faculty member is responsible for providing the student with an equivalent opportunity to make up any examination, study or work requirement which the student may have missed. It is suggested that students notify their course instructors at least one week before any anticipated absence so that proper arrangements may be made to make up any missed work or examination. Any such work is to be completed within a reasonable timeframe, as determined by the faculty member.
- Any student, who misses class due to a verifiable family or individual health emergency, or to a required appearance in a court of law, shall be excused. The student or a family member/legal guardian may report the absence to the Office of Student Affairs and Campus Life, which will notify the student's dean's office, as well as residential life if the student lives on campus. The dean's office will disseminate the information to the appropriate faculty. Follow-up by the student with his or her professors is imperative. Students may need to consider a leave of absence, medical leave of absence, selected course withdrawals, etc., if they have missed a significant portion of class work.

A student may be excused for participation in College-authorized cocurricular and extracurricular activities if, in the instructor's judgment, this does not impair the specific student's or the other students' ability to succeed in the course.

For all absences except those due to religious beliefs, the course instructor has the right to determine if the number of absences has been excessive in view of the nature of the class that was missed and the stated attendance policy. Depending on the individual situation, this can result in the student's being removed from or failing the course.

Labs

The lab exercises complement the lecture material, and allow you to directly perform some of the procedures that we discuss in class. Prelab introductory lectures will introduce techniques used in cell biology rather than present them in lecture.

For each lab, you are required to keep a **set of lab notes** to gain experience in keeping a research grade lab notebook. These are not lab reports. Notes will be examined and graded periodically; they must be comprehensive and up-to-date. Notebooks that are not available for inspection will receive a "0". Details are included in a separate handout.

Each student will make an **oral presentation** of a primary research paper in Cell Biology to his/her lab section. This presentation should be about 20 minutes in length. A short written assignment will be required one week before the oral presentation. Further details will be given in lab.

Due dates

Assignments, notebook examinations, oral reports, and exams are due on the announced dates. If an assignment is discussed in class (either lecture or lab) after it is due, that assignment will not be accepted after the due date. Make-up exams will be more difficult than the in-class exam.

Assessment

Exams

Three hourly exams (100 points each),

A final comprehensive exam (150 points)

Lab grade (100 points)

The lab grade will be based on student competence and performance as reflected in:

- lab notes (33 points)
- data sheets (33 points)
- instructor observation of technical skill and results using established rubrics (34 points)

In other words, pipetting counts and linear graphs should be linear

Oral presentation (50 points)

Problem sets (15-30 points)

A	94-100%		A-	90-93%			
B+	87-89%		B	84-86%		B-	80-83%
C+	77-79%		C	74-76%		C-	70-73%
D+	67-69%		D	64-67%		D-	60-63%
F	Below 60%						

Academic Integrity

The policies and procedures of the College regarding cheating and plagiarism are outlined clearly in the student handbook: "Academic honesty is a cornerstone of the mission of the College".

Please familiarize yourself with the definition of plagiarism. Academic dishonesty can lead to a zero grade on that assignment, a failing grade in the course, academic code probation, suspension or expulsion from the College depending on the gravity of the violation and the decision of the judicial board.

Students with disabilities

In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, reasonable accommodation will be provided to students with documented disabilities on a case by case basis. Students must register with the Office of Academic Support Services (607-274-1005, TDD 607-274-7319, acssd@ithaca.edu) and schedule an appointment with their instructors as soon as possible to discuss their needs.