

Bi322 - Cell Biology - Spring 2017

Instructor: Dr. Nicola Barber

GE: Austin Seroka

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Time: Classes: Monday and Wednesday 10-11:20 am (128 Chiles Center)
Discussion: Thursday 1, 2, 3pm (Huestis 129)

Office hours: Dr. Nicola Barber

Austin Seroka

Darrel Phong

Mon. 11:30-12:30

TBA

Mon. 4:00 - 5:00 pm

15E Klamath

TBA

B009 Sci. Library

Email: Please include "Bi322" in the subject line, so your email can be attended to in time. We will try to answer your email in a timely manner; however, we do not often check our email in the evenings or during weekends.

Website: Canvas - Syllabus, course materials, assignments and grades will be posted to the course Canvas site.

Required text:

Molecular Biology of the Cell, Sixth Edition (Alberts et al.)

Required supplies:

i>clicker (available in the Duck Store): Be sure to register your i>clicker on **Canvas**.

Course Description

The cell is an amazing, complex and dynamic unit of life. We will explore various aspects of how eukaryotic cells in particular carry out their many basic functions while interacting with their environment. We will explore how defects at the cellular level lead to disease states, examine the primary literature, and consider experimental design and analysis.

Course Learning Goals

By the end of the semester, you should be able to:

- Model the dynamic nature of cellular processes, and how a cell receives and responds to information from its environment.
- Explain the function of organelles.
- Communicate how defects at the cellular level lead to disease states and could be targeted for specific therapies.
- Develop testable hypotheses based on provided information, design experiments to test hypotheses, and analyze and interpret provided data.
- Read and evaluate primary literature articles in cell biology.

Grading

Category	Points	Point Breakdown
Lecture Prep Homework	100	Canvas assignments (8 pts. each, max 100 pt)
Participation	100	91 pts for iClicker, (7 pts/class, can miss 2), 9 pts survey
Discussion Homework	100	4 assignments, 20 pts. each 2 poster prep assignments, 10 pts. each
Poster Presentation	200	150 pts. poster. 50 pts presentation. Detailed rubric will be provided.
Exams	500	Highest score of 3 methods. See below.
Total	1000	

Grade	Points
A+	970-1000
A	930-969
A-	900-929
B+	870-899
B	830-869
B-	800-829
C+	770-779
C	730-769
C-	700-729
D+	670-699
D	600-669
F	0-599

Exams:

There will be two midterms and a final, collectively accounting for 500 pts of your course grade. Exams will be cumulative, because concepts will overlap substantially over the term, but the focus of each exam will be on material covered since the preceding exam. Exams can contain materials from class work, assigned online lectures, assigned readings, and discussions, and will include both multiple choice and open-ended questions. The exam schedule is listed on the last page. The 500 points for exams will be determined from the highest score derived from 3 methods:

	Method 1	Method 2	Method 3
Midterm 1	150	-	214 (150 x 10/7)
Midterm 2	150	214 (150 x 10/7)	-
Final Exam	200	286 (200 x 10/7)	286 (200 x 10/7)
Exams Total	500	500	500

Early or makeup exams will NOT be offered. If you miss a midterm your exam score will be based on methods 2 or 3.

Class preparation:

It is expected that you complete assigned readings and review any posted sources before attending class. Homework is due immediately before lecture or at the beginning of discussion.

Lecture preparation homework: Starting with Class 2 there will be a lecture prep homework assignment due before the beginning of each lecture class. Assignments are 8 points each to a max of 100 pt to allow some flexibility.

Participation and i>clicker: 9 points will be awarded for completion of an online survey that will be distributed by the instructor. The remaining 91 pts are awarded for class participation through i>clicker, at 7 points per class you may miss 2 classes without penalty.

Discussion:

Discussions will be led by Austin Seroka. The purpose of the discussion section is to give you practice tackling cell biological problems and dissecting primary literature articles.

Poster Assignment:

During the last week of class we will hold a poster session similar to those held at academic conferences. Students will work in groups throughout the quarter to create poster presentations on a the cell biological basis of a disease and therapy.

General policy on missed assignments:

Assignments must be turned in on time and there are no early exams or make-up exams. The grading system is designed to allow some flexibility if you miss a midterm or homework assignment. If you anticipate an extended absence please contact the instructor.

No Extra Credit

There will be no opportunities for extra credit. Please do not ask for exceptions.

Classroom etiquette:

Please arrive on time. Lectures and discussions begin promptly on the hour. Laptops and other electronic devices are not to be used unless explicitly permitted. Please do not leave early as this is disruptive to everyone. If you have an unusual circumstance and must leave early, please inform the instructor, and sit near the exit so your leaving is not disruptive. Finally, please be respectful of your fellow students.

Academic integrity:

You are expected to do your own work on homework, discussion section assignments, and exams. Academic misconduct, including cheating and plagiarism, will not be tolerated. You may not use an i>clicker registered to someone else or to allow someone else to use an i>clicker registered to you. You are encouraged to discuss ideas with other students and study together, but do not copy someone else's work or allow anyone to copy yours. All students are expected to conform to the [Student Conduct Code](#). Please note that Instructors are **required** to file a written report of any academic misconduct with the Director of Student Conduct and Community Standards.

Inclusive Learning:

We aim to build an inclusive learning environment. We understand that our members represent a rich variety of backgrounds and perspectives. We are

committed to providing an atmosphere for learning that respects diversity. While working together to build this community we ask all members to:

- share their unique experiences, values and beliefs.
- be open to the views of others.
- honor the uniqueness of their colleagues.
- appreciate the opportunity that we have to learn from each other.
- value each other's opinions and communicate in a respectful manner.
- keep confidential discussions that the community has of a personal (or professional) nature.

If there are aspects of the instruction or design of this course that result in barriers to your participation, please let us know as early as possible, in person or via email. You may also wish to contact [Accessible Education Services](#) in 164 Oregon Hall, by phone at (541) 346-1155 or uoaec@uoregon.edu. We welcome the chance to help you learn, and will work with you to make it a positive experience.

Assigned text and online lectures:

Assigned readings are from the 6th edition of Molecular Biology of the Cell (Alberts et al.) There will be at least one copy available in the science library on reserve. The [4th edition of Molecular Biology of the Cell](#) is also freely available for searching online through PubMed books. Please note that there are always some differences in page numbers for assigned readings, topic arrangement and current knowledge between editions. Online video lectures will be posted to Canvas and will usually be found on iBiology.org. It is essential to complete reading assignments and watch assigned online lectures prior to class as class time will be devoted to applying knowledge, solving problems and group discussions. Details of assigned lecture prep will be posted to Canvas.

Overview of classes, discussions, readings, homeworks and exams

Week	Class	Date	Lectures, Discussions and Exams	Readings, lecture preps, assignments
1	Class 1	4/3	Cellular organization	Read 641-645 (review).
	Class 2	4/5	Membrane proteins, transporters and channels	HW2 due. Read 576-581, 597-600, 607-611. Watch Yan .
	Discussion 1	4/6	Discussion 1: Primary literature intro	Participation survey due.
2	Class 3	4/10	Cell signaling	HW3 due. Read 153-158, 813-814, 818-821, 832-833, 850-857. Watch Wittinghofer .
	Class 4	4/12	Protein sorting	HW4 due. Read 645-657, 669-681. Watch NPC videos .
	Discussion 2	4/13	Discussion 2: Article 1	Read Article 1. Article 1 Assignment due
3	Class 5	4/17	Vesicle transport 1	HW5 due. Read 695-703, 710-722. Watch Schekman .
	Class 6	4/19	Vesicle transport 2	HW6 due. Read 730-744. Watch Lippincott-Schwartz .
	Discussion 3	4/20	Discussion 3: Midterm 1 review	
4	EXAM	4/24	MIDTERM 1	
	Class 7	4/26	Mitochondria and ATP production	HW7 due. Read 753-759, 774-778. Watch Nunnari .
	Discussion 4	4/27	Discussion 4: Midterm 1 revisit	Poster groups and topics due
5	Class 8	5/1	Apoptosis	HW8 due. Read 1021-1032. Watch Wang .
	Class 9	5/3	Ubiquitin, proteasome, autophagy	HW9 due. Read 357-362, 722-730. Watch Tooze .
	Discussion 5	5/4	Discussion 5: Article 2	Read Article 2. Article 2 Assignment due
6	Class 10	5/8	Actin cytoskeleton	HW10 due. Read 889-914. Watch Pollard .
	Class 11	5/10	Cell migration and adhesion	HW11 due. Read 915-925, 951-960. Watch Theriot .
	Discussion 6	5/11	Discussion 6: Midterm 2 review	
7	EXAM	5/15	MIDTERM 2	
	Class 12	5/17	Microtubules	HW12 due. Read 925-944. Watch Hyman .
	Discussion 7	5/18	Discussion 7: Midterm 2 revisit	Abstract and outline for poster due
8	Class 13	5/22	Cell cycle	HW13 due. Read 963-977. Watch Morgan .
	Class 14	5/24	Mitosis	HW14 due. Read 978-1004. Watch McIntosh .
	Discussion 8	5/25	Discussion 8: Article 3	Read Article 3. Article 3 Assignment due
9	HOLIDAY	5/29	HOLIDAY	HOLIDAY
	Class 15	5/31	Meiosis	HW15 due. Read 1004-1010. Watch Dernburg .
	Discussion 9	6/1	Discussion 9: Article 4	Read Article 4. Article 4 Assignment due.
10	Class 16	6/5	Poster Presentations	Poster due
	Class 17	6/7	Poster Presentations	Poster due
	Discussion 10	6/8	Discussion 10: Poster/Final review	Poster due
11	EXAM	6/12	FINAL EXAM 10:15am	

NOTE: Subject to change. Unless noted, readings are Molecular Biology of the Cell 6e, lectures [iBiology.org](#).