

Bi322 Cell Biology

Winter 2017

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Office hours: Wednesday 1:00-2:00pm, Huestis 334D

Assistant Instructor:
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Office hours: Fridays 3:00-4:00pm, Huestis 228B

<u>Lecture time and room</u>	<u>Discussion time and room</u>
Tuesday and Thursday 10:00 – 11:20 245 Straub Hall	Thursday 12, 1, 2, 3pm 112 Huestis

Course Prerequisites

Bi214 or Bi252 or equivalent are required. If you are uncertain about whether you have met the prerequisites, please email me. *If you lack the prerequisites, I encourage you to read Chapters 3, 4, and 13 of Essential Cell Biology (4th edition) on reserve in the science library before class.*

Course topics and goals

This course covers eukaryotic cell biology. You will learn the components of a eukaryotic cell and how they are inter-related; methods cell biologists use to study cells (including light microscopy, laser scanning confocal microscopy, electron microscopy, biochemistry, DNA microarrays, transgenics, and other cutting edge techniques); and a glimpse of the role of cells in development and cancer. We will not cover plant cells or prokaryotic cells.

The goals of this course are to give you (1) a basic knowledge about the fundamental concepts of cell biology; (2) a working cell biology vocabulary; (3) an understanding of the methods used by cell biologists; and (4) practice thinking analytically and synthesizing information, so that you will be better equipped to read and critically analyze primary scientific literature or media reports on cell biology topics (e.g. stem cell research).

Course textbook

Required readings are mostly from the new 4th edition of Essential Cell Biology (ECB). Multiple copies will be on reserve in the science library. Additional required reading beyond ECB3 will also be posted on the class website for free downloads.

Required reading is to help you understand the lectures, and help you do well on the quizzes. Quizzes will be limited to material covered in the reading; exams will be limited to the material covered in lecture.

Course website

We will use Canvas as a course website. The site will contain class postings, changes in the reading, links to cell biology movies and other resources that you will need to do well on the exams, and copies of important class materials. Please contact me immediately if you do not have the resources or knowledge to access this website.

Lectures

Time and place listed above. I will post a PDF of the lecture slides prior to class so you can use the prints as note templates.

iClickers

We will be using iClickers during lectures and their use will contribute to your participation grade. Please make sure that you have an iClicker and know how to use it.

Discussion sections

Most sections will start with a short quiz on the readings or will be a review session for the midterms. Most discussion sections will emphasize methodology relevant to the class, including light, electron and confocal microscopy, antibody production and uses, DNA microarrays, etc. Several "field trips" are planned, including to the electron microscopy facility, and the genomics facility.

Quizzes

These will be given at the beginning of most discussion sections and will be based on the material in required reading. The quizzes are designed to make sure you do the reading, and are not meant to be representative of the exams. You should not assume that if you get 100% on each quiz that you will get 100% on the exam, as the quizzes are much simpler – on the other hand, if you flunk the quizzes you need to immediately seek assistance before the midterms.

Exams

There will be two midterm exams and one final exam. The exams will cover material from both lectures and readings, but with an emphasis on the lectures. EVERYONE IS REQUIRED TO TAKE THE FINAL EXAM. BE CAREFUL WHEN MAKING TRAVEL PLANS AS THERE WILL BE NO EARLY OR MAKE-UP FINAL EXAMS.

Grading

Your grade will be based on the point distribution below. I do not grade on a fixed curve.

Quizzes:	10%
Participation:	5%
Midterm 1:	25%
Midterm 2:	25%
Final exam:	35%

Professional Conduct

You are expected to follow the student conduct code; academic dishonesty includes cheating, plagiarizing or knowingly supplying false information. If you are aware of academic dishonesty occurring, please see me.

Bi322 Schedule Winter 2017

Week	Date	Lecture Topic	ECB4 Chapter	Pages	Discussion Section
1	10-Jan	Intro, gene expression	7		
	12-Jan	gene expression	7		
2	17-Jan	gene regulation (A.S.B.)	8		
	19-Jan	gene regulation	8		Quiz 1. + Sequencing/Genomics (Doug Turnbull)
3	24-Jan	cellular membranes	11		
	26-Jan	Intracellular transport	15		Quiz 2. + review
4	31-Jan	Intracellular transport	15		
	2-Feb	Midterm 1			Quiz 3. + light microscopy (Andrew Wagner)
5	7-Feb	cell signaling	16		
	9-Feb	cell signaling	16		Quiz 4. + EM (Denise Niell)
6	14-Feb	cytoskeleton	17		
	16-Feb	cytoskeleton	17		Quiz 5. + 'omics (P.W.)
7	21-Feb	cell division	18		
	23-Feb	cell division	18		Quiz 6. + review
8	28-Feb	Midterm 2			
	2-Mar	tissues and cell junctions	20	683-701	Quiz 7. + go over midterms
9	7-Mar	stem cells	20	702-712	
	9-Mar	cancer	20	712-724	Quiz 8. + antibodies (A.S.B.)
10	14-Mar	TBD			
	16-Mar	research lecture			Review
11	23-Mar	Final Exam (08:00)			