

BIO S320 – CELL BIOLOGY – SUMMER 2013

Unique #s 89925-89930

Lecturer:

Dr. Clarence Chan

(Section of Molecular Genetics and Microbiology)

Office

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Office Hours

Tuesday and Thursday, 11:30 – 12:30 pm (or by appointment)

5 lectures per week:

MTWThF, 10:00 – 11:30 am; RLM 7.104

Required Text:

Molecular Biology of the Cell, 5th Ed., 2008

Alberts, et al.

Garland Science, New York, NY

Discussion Sessions:

Monday and Wednesday, 1 – 2:30 pm (WEL 4.224)

Monday and Wednesday, 2:30 – 4:00 pm (BIO 301)

NO Discussion Session on first day of class!

Course objectives:

This course is designed to provide a solid understanding of **Cell Biology**. Our main goal is not for you to memorize the list of parts of the cell but rather to understand the molecular mechanisms that control different aspects of the live of the cell. Because of the complexity of a cell, the topics to be covered are very extensive. Hence, many past students have considered this course to be very challenging. You should have a solid knowledge of the chemical basis of life. You may want to review Chapters 2 & 3 from Alberts et al. before starting the course.

Lectures and Reading Assignments:

Attendance at lectures is required and recorded. For every 3 lectures missed, the grade of a student will be reduced by one level. For example, the grade of a student who should get an A according to exam scores will instead get an A- if he/she misses 3 lectures, and will get a B+ if he/she misses 6 lectures. A student who misses a lecture because of sickness will be excused if a doctor's note is provided.

The textbook chapters assigned for each lecture should be read before class. You will benefit most from my lectures and class discussions if you are well prepared.

Discussion sessions:

Attendance is optional but very strongly recommended. **Additional information pertaining to the course may be given at these sessions and may be the subject of exam questions.** Please come prepared to discuss any issues or questions raised in the preceding lectures. You may attend any of the scheduled sessions.

EXAMS:

Two in-term exams and a final exam will be given, each worth 100 points. The final exam will last just as long as the other 2 in-term exams and will start at the starting time listed in the Registrar Office's final exam schedule website (i.e., if the time listed is 9 am to noon, the exam will start at 9 and will end after the duration of a regular class time). Grades will be based only on performance on the exams and attendance at lectures. There will be NO opportunity to complete extra credit to "improve" a grade (i.e., the grade is based on performance and attendance, not effort).

Interactive Classroom

A **BLACKBOARD** website with class announcements, lecture notes, handouts, and practice exams can be found at UTDIRECT or through:

<http://courses.utexas.edu> (your UT-EID is required)

We hope you will all take advantage of this site to help each other prepare for class and study for exams. You should download the lecture files before each lecture. Such files can be found under "Course Documents".

Academic accommodations for students with disabilities:

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY. Or at <http://deanofstudents.utexas.edu/>

Accommodations for religious Holidays:

As per University policy, accommodations will be made for religious holidays. A student must make the instructor aware of a needed religious-related absence at least fourteen days prior to the class absence or on the first class day for holidays that fall within the first two weeks of the semester.

Policy on Scholastic Dishonesty:

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from The University. Since such dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

BIO S320 – CELL BIOLOGY – TENTATIVE LECTURE SCHEDULE 2013, SUMMER

DATE	SUBJECT	Reading in Alberts 5th Edition.
JULY 15	1. Course Introduction The Cell Theory and its Legacy Bonds, Molecules, Amino Acids. Cellular Components. Protein structures. Protein Function. Phosphorylation and post-translational modifications.	Chapter 2: pg 110-111 Chapter 3: pg 125-148; 175-178
16	2. Protein Folding & Degradation. Chaperones, Ubiquitin, Proteasome	Chapter 6: pg 387-399
17	3. Membrane Structure	Chapter 10
18	4. The Compartmentalization of Cells. Membrane Trafficking-Overview Proteins into the ER, Signal Peptide	Chapter 12: pg 723-745
19	5. Coated vesicles, Rabs, SNAREs	Chapter 13: pg 749-767
22	6. Traffic through the Golgi, retrieval from the Golgi	Chapter 13: pg 768-779
23	7. <i>trans</i> -Golgi to Lysosomes	Chapter 13: pg 779-787
24	EXAM 1	(Lectures 1-7) tentative
25	8. Exocytosis and Endocytosis	Chapter 13: pg 787-809
26	9. Nuclear Trafficking	Chapter 12: pg 695-712
29	10. Cytoskeleton I – Introduction and Microtubules	Chapter 16
30	11. Cytoskeleton II – Microtubules and their motors	Chapter 16
31	12. Cytoskeleton III – Actin and its motors	Chapter 16
AUG 1	13. Cytoskeleton IV – Cell Motility and Muscle contraction; Intermediate Filaments	Chapter 16
2	14. Cell Cycle I	Chapter 17: pg 1053-1075; 1101-1112
5	15. Cell Cycle II	Chapter 17: pg 1053-1075; 1101-1112
6	EXAM 2	(Lectures 8-15) tentative
7	16. Apoptosis	Chapter 18
8	17. Mechanics of Cell Division	Chapter 17: pg 1071-1097
9	18. Cell Signaling I: General Principles	Chapter 15: pg 879-903
12	19. Cell Signaling II: G-Protein Coupled Receptors	Chapter 15: pg 904-921
13	20. Cell Signaling III: Enzyme-linked Receptors	Chapter 15: pg 921-936
14	21. Cell Junctions and Cell-Cell Adhesion	Chapter 19: pg 1131-1163
15	21. Extracellular matrix and Integrins	Chapter 19: pg 1164-1194
16	22. Review	
TBA	FINAL EXAM	(Lectures 16-22) tentative