Biology 567
Biochemistry, Cell & Molecular Biology III
Spring 2009

Meeting Time and Place: LS-132; TTh 9:30-10:45 A.M., F 9:00-9:50 A.M.

Instructors:
Dr. Ricardo Zayas; LS 306A; 594-2698; rzayas@sciences.sdsu.edu
Office hours: by appointment
Dr. Sandy Bernstein; LS 371; 594-5629; sbernst@sunstroke.sdsu.edu
Office hours: by appointment
Dr. Kathie McGuire; LS 407; 594-7191; kmcguire@sunstroke.sdsu.edu
Office hours: TTh 12:00-1:00 P.M. and by appointment

Content: Advanced concepts of modern integrated cell biology, molecular biology and biochemistry.

Learning Objectives: Students will:

- Ascertain how experimental results yield textbook descriptions in the fields of biochemistry, cell and molecular biology
- Devise experimental approaches to solving questions in biochemistry, cell and molecular biology
- Consult and analyze the primary research literature
- Orally present material from the primary research literature

Exam and Lecture Schedule: See Blackboard

Required Text: Molecular Cell Biology, H. Lodish et al., sixth edition [2007].
Note: You should have this text from Bio366.

Other Required Materials: Other materials will be available on library reserve, distributed in class as indicated by the instructors, or on Blackboard.

Prerequisites: Biology 366 and 366L.

Grading: There will be one exam for each of the three segments of the course, based on assigned readings and lecture material. Each segment will be worth one-third of the final course grade. For each segment, the exam is worth 75% of your segment grade. The remaining 25% of the segment grade will be based on literature analysis and critique, as specified by the instructors.

The grade assignments will likely be on a straight percentage distribution:

90-100 %	A
80-89 %	B
70-79 %	C
60-69 %	D
<60 %	Fail

Course Etiquette: Turn off your cell phones and pagers before entering class. Computer use for class is acceptable, but must not be distractive or disruptive.

Make-up Policy: Only exceptional circumstances or a medical condition accompanied by a doctor's excuse will be accepted for a make-up exam.

Plagiarism in any form will not be tolerated. No credit will be given for plagiarized work and students who plagiarize will be reported to the Judicial Procedures Office. If you are unclear of the definition of plagiarism, see an instructor or the University Catalog.

Cheating: Cheating will not be tolerated. Students who cheat will be reported to the Judicial Procedures Office.

Class Mtg.	Day	Month	Date	Instructor	Topic	Chapt.	Pages
1	Thurs.	Jan.	22	RZ	Introduction; Genomics	1,5	1-30; 176-191
2	Fri.	Jan.	23	RZ	Genes and Chromosomes	6	217-247
3	Tues.	Jan.	27	RZ	Genes and Chromosomes	6	247-265
4	Thurs.	Jan.	29	RZ	Transcriptional Control	5, 7	191-192; 269-313
5	Fri.	Jan.	30	RZ	Transcriptional Control	7	269-313
6	**Tues.**	**Feb.**	**3**	**RZ**	**Paper 1 + Quiz**		
7	Thurs.	Feb.	5	RZ	Molecular Genetic Techniques	5	176-197
8	Fri.	Feb.	6	RZ	Molecular Genetic Techniques	5	
9	**Tues.**	**Feb.**	**10**	**RZ**	**Paper 2 + Quiz**		
10	Thurs.	Feb.	12	RZ	Gene Silencing	8	347-351
11	Fri.	Feb.	13	RZ	Gene Silencing	5	204-211
12	**Tues.**	**Feb.**	**17**	**RZ**	**Paper 3 + Quiz**		
13	Thurs.	Feb.	19	RZ	Protein Function	3	86-105
14	Fri.	Feb.	20	RZ	Proteomics	3	105-108
15	**Tues.**	**Feb.**	**24**	**RZ**	**Segment Exam 1**		
16	Thurs.	Feb.	26	SB	Actin structure & binding proteins	17	713-718; 728-731
17	Fri.	Feb.	27	SB	Actin assembly & locomotion	17	719-731; 745-752
--	Tues.	Mar.	3		NO LECTURE!		
18	Thurs.	Mar.	5	SB	Myosin structure/function; nonmuscle motility	17	731-738; 743-744
19	Fri.	Mar.	6	SB/AC	Myosin regulation and muscle	17	738-743; 755-756
20	Tues	Mar.	10	SB/AC	Excitable Cells	11; 23	458-465; 1001-1013; 1023-1026
21	Thurs.	Mar.	12	SB	Microtubules	18	757--769
22	Fri.	Mar.	13	SB	Kinesin, dynein and intracellular transport	18	769-777
23	**Tues.**	**Mar.**	**17**	**SB**	**Paper 1 + Quiz**		
24	Thurs.	Mar.	19	SB	**Exam on Paper 1** + Cilia & flagella; Mitosis	18	777-791
25	Fri.	Mar.	20	SB	Intermediate Filaments	18	791-798
26	**Tues.**	**Mar.**	**24**	**SB**	**Paper 2 + Quiz**		
27	Thurs.	Mar.	26	SB	**Exam on Paper 2**; Cell adhesion	19	801-819
28	Fri.	Mar.	27	SB	Components of the extracellular matrix	19	820-842
March 30 - April 3					Spring Break		
29	**Tues**	**April**	**7**	**SB**	**Paper 3 + Quiz**		
30	**Thurs.**	**April**	**9**	**SB**	**Segment Exam 2**		
31	Fri.	April	10	KM	Signal Transduction - Cytok. Recept. & RTKS	16	672-684
32	Tues.	April	14	KM	Signal Transduction - RTKs; Ras and MAPK	16	684-694
33	Thurs.	April	16	KM	Signal Transduction - Ras and MAPK; GPCRs	16	697-703
34	Fri.	April	17	KM	Signal Transduction - Protein Cleavage	16	703-709
35	Tues.	April	21	KM	Paper 1: Blackboard Quiz, Discussion		
36	Thurs.	April	23	KM	Immunology - Overview/Inflammation	24	1055-1063
37	Fri.	April	24	KM	Immunology - Immunoglobulins and B cells	24	1063-1076
38	Tues.	April	28	KM	Immunology - T cells, MHC and Ag presentation	24	1076-1097
39	Thurs.	April	30	KM	Paper 2: Blackboard Quiz, Discussion		
40	Fri.	May	1	KM	Immunology - T cell wrap-up	24	
41	Tues.	May	5	KM	Cancer - Introduction and tumor cells	25	1107-1119
42	Thurs.	May	7	KM	Cancer - The genetic basis	25	1119-1138
43	Fri.	May	8	KM	Cancer - The genetic basis cont./Wrap-up	25	
44	Tues.	May	12	KM	Paper 3: Blackboard Quiz, Discussion		
45	**Tues.**	**May**	**19**	**KM**	**Segment Exam 3: 10:30 AM (FINAL EXAM PERIOD)**		