

□ Course Information

BIOLOGY 567: Biochemistry, Cell and Molecular Biology III

Meeting Time and Place: TTh 11:00AM-12:15 PM, Fri 9:00-9:50 AM, LS248

Instructors

Dr. Scott Kelley; LS 373; 594 - 5371; skelley@sciences.sdsu.edu

Office hours: By appointment

Dr. Greg Harris; LS 311; 594-5655; gharris@sunstroke.sdsu.edu

Office hours: By appointment

Instructor 3: TBA

Office hours: TBA

Course Etiquette: Turn off your cell phones and pagers before entering class.

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

Required Text: Molecular Cell Biology, H. Lodish et al., 5th edition.

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

Grading: Undergraduates and Graduate students will be graded on different scales and evaluated separately.

The following is the scoring for each of the three sections of the class (Kelley, Harris, McGuire):

Undergraduate Grading: 100 point scale. There will be one exam for each segment of the course, based on assigned readings and lecture material. For each segment of the course there will be a total of 105 points - 70 points for an exam, 30 points for assignments or tests based on the research papers and 5 bonus points given at the instructors discretion.

Graduate Grading: 120 point scale. 70 points for an exam, 30 points for assignments or quizzes based on the research papers, 20 points for research papers and 5 bonus points given at the instructors discretion.

This course includes discussion of primary scientific literature. All students are expected to be present and to participate in these discussions. Points for quizzes may not be awarded to students who are not present.

Exam and Lecture Schedule: See Course Schedule.

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

90-100 A

80-89 B

70-79 C

60-69 D

<60 Fail

In the event that grades given by the different instructors do not agree, the instructors reserve the right to make fair and appropriate adjustments. The uses of + 's and - 's in grades will be determined by the instructors at the end of the course.

Make-up Policy: Assignments will only be accepted during the class periods they are due unless prior arrangements have been made. 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.

Date	Topic	Instructor	Chapter	Pages
Tues 8/29	Orientation Genes and Chromosomes I	Kelley	10, 9	405-414, 382-383
Thur 8/31	Genes and Chromosomes II	Kelley	10	414-424
Fri 9/1	Bioinformatics: LS126	Kelley	TBA	TBA
Tues 9/5	Genes and Chromosomes III	Kelley	10	<u>Bioinformatics Exercise Due</u> 424-437
Thur 9/7	Paper #1 Discussion	Kelley	Paper 1	<u>Take Home Due</u>
Fri 9/8	Bioinformatics: LS126	Kelley	TBA	TBA
Tues 9/12	Eukaryotic Gene Control I	Kelley	11	<u>Bioinformatics Exercise Due</u> 131-136, 447-457
Thur 9/14	Eukaryotic Gene Control II	Kelley	11	458-469, 481-485
Fri 9/15	Bioinformatics: LS126	Kelley	TBA	TBA
Tues 9/19	Eukaryotic Gene Control III	Kelley	11	<u>Bioinformatics Exercise Due</u> 471-481
Thur 9/21	Paper #2 Discussion	Kelley	Paper 2	<u>Take Home Due</u> <u>Grad Student Paper Due</u>
Fri 9/22	Post-transcriptional Control (Back in LS248)	Kelley	12	502-529
Tues 9/26	Review Session Exam I			

Thur 9/28	EXAM #1			
Fri 9/29	Personal Day			
Tues 10/3	Cell biology of neurons: Electrical excitability and voltage-gated ion channels	Harris	7	276-287
Thurs 10/5	Cell biology of neurons: Synaptic transmission and neurotransmitter-activated channels	Harris	7, 13	287-296, 555-561
Fri 10/6	Cytoskeleton: Actin structure and dynamics	Harris	19	779-791
Tues 10/10	Cytoskeleton: Myosin, muscle contraction	Harris	19	791-800
Thur 10/12	Discussion: Paper III	Harris	N/A	N/A
Fri 10/13	Quiz: Paper III Cytoskeleton: cell locomotion, intermediate filaments	Harris	19	800-813
Tues 10/17	Cytoskeleton: Microtubule organization and dynamics	Harris	20	817-829
Thur 10/19	Discussion: Paper IV	Harris	N/A	N/A
Fri 10/20	Quiz: Paper IV Cytoskeleton: kinesin- and dynein-powered movements	Harris	20	829-850
Tues 10/24	Molecular motor wrap-up	Harris	20	829-850

Thur 10/26	Discussion: Paper V	Harris	N/A	N/A
Fri 10/27	Quiz: Paper V Extracellular matrix	Harris	6	197-231
Tues 10/31	Review Session Exam II	Harris	6	197-231
Thur 11/2	Exam II	Harris	N/A	N/A
Fri 11/3	Signal Transduction I	McGuire	13	533-38, 541-44, 545- 550, 553-54
Tues 11/7	Signal Transduction II	McGuire	13	558-560, 561-64, 565-67
Thur 11/9	Signal Transduction III	McGuire	14	578-85,587-89
Fri 11/10	Signal Transduction IV	McGuire	14	592-599, 605
Tues 11/14	Signal Transduction V	McGuire	14	
Thur 11/16	6th Paper: signal transduction	McGuire	N/A	<u>Quiz due; Grad Student paper due</u>
Fri 11/17	Cell cycle I	McGuire	21	853-56, 862-63, 865-70
Tues 11/21	Cell cycle II	McGuire	21	881-90
Thur 11/23	Thanksgiving Holiday	N/A		

Fri 11/24	Thanksgiving Holiday	N/A	N/A	
Tues 11/28	Cell cycle III	McGuire	21	
Thur 11/30	7th paper: Cell cycle	McGuire	N/A	<u>Quiz due; Grad Student Paper Due</u>
Fri 12/1	Cancer I	McGuire	23	1247-1250, 1254-1261
Tues 12/5	Cancer II	McGuire	23	1264-1275, 1277-1280
Thur 12/7	Cancer III	McGuire	23	1282-1287
TUES 12/12	FINAL EXAM, 1030-1230	McGuire		