

COURSE INTRODUCTION, SCHEDULE, AND GENERAL INFORMATION

Instructor

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Textbook

- ☐ This class will rely primarily on review articles provided by the instructor, but having a biochemistry textbook as a reference will likely prove useful

Course Objectives

In CHEM 430, you will apply the principles learned during Biochemistry I to understand biochemical aspects of a range of student-chosen topics ranging from protein analysis and engineering to mechanisms of disease and therapeutics. The class will rely heavily on the primary literature and will serve to increase a student's ability to read and analyze scientific publications.

Grading:

COURSE GRADING: Your grade in this course is based on the following criteria: attendance and participation, take-home exams and homework and paper reviews

A. Attendance and Participation

Your grade will reflect your attendance and participation in the class. No points will be given for attendance; however, your maximum allowable grade will reflect your attendance and participation. Key to the participation is an indication that you have been reading the assigned papers, either by answers to questions posed by the instructor or asking relevant questions during lecture.

B. Exams

There will be 2 take-home exams, due at the end of 4th week and 7th week. The exams will be literature-based and contain a mixture of data analysis and interpretation, experimental design and big-picture analysis. There will be no final exam

C. Homework

There will be 4 homework assignments, which will focus on analysis of single papers relevant to the topics being covered

D. Presentation

During 9th and 10th week, each student will give a 20-minute presentation on a biochemistry topic interesting to him or her. A list of potential topics will be provided during the course, but a student will be allowed to their own topic

Point Breakdown

Exams (2)	200 points
Homework (4)	100 points
Presentation	100 points
<u>Class Participation</u>	<u>100 points</u>
Total points	500 points

Grade Breakdown

A	450-500	C	350-384
B+	435-449	D+	335-349
B	400-434	D	300-334
C+	385-399	F	<300

CHEM 430: Advanced Biochemistry
COURSE SCHEDULE FOR SPRING QUARTER 2011
Dr. Weatherman

<i>wk</i>	<i>Lecture #/ Date</i>		<i>Topics covered</i>	<i>Assessment</i>
1	1	Mar 7	Introduction/Biomolecular Analysis	
	2	Mar 8	Electrophoresis	
	3	Mar 10	Advanced Electrophoresis Techniques	
	4	Mar 11	no class	
2	5	Mar 14	Alternative Protein Analysis	HW 1 Due
	6	Mar 15	Genomics & Proteomics	
	7	Mar 17	Membranes and Lipid Rafts	
	8	Mar 18	Membranes and Anaesthetics	
3	9	Mar 21	Protein-Protein Interactions	HW 2 Due
	10	Mar 22	Analysis of Protein-Protein Interactions	
	11	Mar 24	Targeting Protein-Protein Interactions	
	12	Mar 25	no class	
4	13	Mar 28	Introduction to Drug Action	
	14	Mar 29	Approaches to Drug Discovery	
	15	Mar 31	Case Study: Cyclooxygenase Inhibitors	
	16	Apr 1	Case Study: Phosphodiesterase Inhibitors	
5	17	Apr 4	Biochemical Mechanisms of Cancer	Exam 1 Due
	18	Apr 5	Tumor Suppressors	
	19	Apr 7	Chemotherapeutic Treatment of Cancer	
	20	Apr 8	Drug Resistance in Cancer	
6	21	Apr 11	Introduction to Genetic Disorders	HW 3 Due
	22	Apr 12	Genetic Disorders: Cystic Fibrosis	
	23	Apr 14	Genetic Disorders: Pharmacogenomics	
	24	Apr 15	no class	
SPRING BREAK				
7	25	Apr 25	Biochemistry of Viruses	
	26	Apr 26	Influenza Virus	
	27	Apr 28	HIV	
	28	Apr 29	Vaccine Development	
8	29	May 2	Biochemical Mechanisms of Diabetes	HW 4 Due
	30	May 3	Insulin	
	31	May 5	Alternative Targets for Diabetes	
	32	May 6	Introduction to Stem Cells	
9	33	May 9	Biochemical Control of Differentiation	Exam 2 Due
	34	May 10	Therapeutic Use of Stem Cells	
	35	May 12	student presentations	
	36	May 13	student presentations	
10	37	May 16	student presentations	
	38	May 17	student presentations	
	39	May 19	student presentations	
	40	May 20	student presentations	