

# BIO 581/CHM 581 Biochemistry Syllabus

F 10

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Office hours: Sm 406, M 11-12, Tu 9-10, 3-4, W 10-12 or by appointment, but please avoid Friday.

The course objective is to survey basic biochemical principles, including the composition, structure, and function of proteins, lipids, and carbohydrates. We will touch on nucleic acid structure & function only briefly, as they are covered in detail in the next semester (BIO/CHM 582) of this sequence.

Important biochemical principles include structure-function correlation, chemical reactivity, kinetics, and equilibrium, thermodynamics, membrane structure and function, and metabolic energy pathways. BIO 581/CHM 581 is intended for science majors and some education majors.

## COURSE ACTIVITIES

Subjects will be covered as noted in the schedule. I assume that you will *do the assigned reading from the text, and the problems at the end of the chapters*. The class is relatively small, so it should be a mixture of discussion and lecture. However, I do not expect you to master the more difficult concepts without help.

## GRADING PROCEDURES

1. The letter grade that goes on your transcript is assigned by counting the total point value that you have accumulated for the course. The values that correspond to A, B, C, etc. letter grades usually look something like this: A > 88, B+ > 84, B > 78, C+ > 74, C > 68, D+ > 64, D ≥ 58, F < 58.
2. Point values for course activities:

Exam I	19%
Exam II	19
Exam III	19
Final Exam	32
Review	3
pdb structure	2
<u>Paper (J Club)</u>	<u>6</u>
Total	100%

Exams. The exams are designed to assess your understanding of biochemistry. (The exam *emphasis is on understanding, but some memory work will be necessary as well.*) Because of the nature of the subject, ability to solve problems usually relates to understanding. **The final exam is cumulative.**  
Attendance/Make-up policy. **Attendance at examinations is required.** If you are ill, have had a recent death in your immediate family, or other traumatic experience that required you to miss a midterm, you may take the *cumulative* make-up exam at the end of the semester. You may be required to document your absence. Finally, if you know ahead of time that you will miss an exam, please email or call before the exam. A grade of zero is given for all missed work that is not made up.

## MATERIALS

Textbook: *Principals of Biochemistry, Lehninger 5th ed.*, by Nelson, David & Cox, Michael M. 2008.

## BIO 581/CHM 581 SCHEDULE

FALL 2010

<u>week#</u>	<u>date</u>	<u>lecture topic</u>	<u>read (before class!) Chapter:</u>
1	8/19	Introduction & Foundations	1
2	8/24	Foundations & Start Water	2
	8/26	Water	
3	8/31	Amino Acids, Peptides & Proteins	3
	9/2	Amino Acids, Peptides & Proteins	
4	9/7	Three-Dimensional Structure of Proteins	4
	9/9	Three-Dimensional Structure of Proteins	
5	9/14	Finish 3-D structure, start Protein Function	5
	9/16	<b>Exam 1</b> , covering Chapters 1-4 & related lecture material	
6	9/21	Protein Function	
	9/23	Protein Function	
7	9/28	Protein Function	
	9/30	Enzymes	6
8	10/5	Enzymes	
	10/7	Enzymes	
9	10/12	Carbohydrates & Glycobiology	7 <b><i>pdb assignment due</i></b>
	10/14	<b><i>Fall Break (10/8-10), no class</i></b>	
10	10/19	Carbohydrates & Glycobiology	
	10/21	Nucleic acids	Scan Chap 8
11	10/26	<b>Exam 2</b> , covering Chapters 5-8 & related lecture material <b><i>review approval!</i></b>	
	10/28	DNA Technology & Lipids	Scan Chap 9, read Chap 10
		<b><i>10/28, Thursday, last day to withdraw without penalty.</i></b>	
12	11/2	<b><i>Election Day, no class</i></b>	
	11/4	Lipids	10
13	11/9	Biological Membranes and Transport	11 <b><i>Review assignment due</i></b>
	11/11	Biological Membranes and Transport	<b><i>Paper approval deadline</i></b>
14	11/16	Biosignalling	12
	11/18	Biosignalling	
15	11/23	<b>Exam 3</b> , covering Chapters 9-12 & related lecture material	
	11/25	<b><i>THANKSGIVING Break, No class!</i></b>	
16	11/30	Bioenergetics and Metabolism	13 <b><i>Paper due at 5 P.M.</i></b>
	12/2	???????	
<b>17</b>	12/9	<b><i>Cumulative Final Exam</i></b> Tuesday 8-11	

*Disclaimer: Unforeseen circumstances may necessitate changing the course schedule.*