

CHEMISTRY 414 - BIOCHEMISTRY

COURSE INFORMATION

Term: Fall 2006, 11:00-11:50

Text: *Lehninger Principles of Biochemistry*, by Nelson and Cox, fourth edition.

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<u>Lecture Number</u>	<u>Topic</u>	<u>Reading</u>
1	Introduction	
2-3	Acids, Bases & Buffers	Chap. 2
4-5	Amino Acids	Chap. 3
6-9	Introduction to Proteins	Chap. 3, 4
10-14	Hemoglobin & Myoglobin	Chap. 5
15-19	Enzyme Kinetics	Chap. 6
20	Thermodynamics	Chap. 13
21	Carbohydrate Chemistry	Chap. 7, 15
22-26	Glycolysis	Chap. 14
27-28	Citric Acid Cycle	Chap. 16
29-30	Electron Transport & Oxidative Phosphorylation	Chap. 19
31-34	Fatty Acid Metabolism	Chap. 17, 21
35-39	Amino Acid Metabolism	Chap. 18

DESCRIPTION

This course will focus heavily on the metabolism of carbohydrates, protein and fats. The kinetics and bioenergetics of these pathways will be explored and their integration will be shown. The regulation of these pathways and how they differ in the muscle and the liver will be a main theme in the course.

GOALS

1. To understand the metabolism of carbohydrates, proteins and fats and how they are integrated.
2. To understand the regulation of these pathways.
3. To understand the function of the liver and muscle.

EVALUATION

1. Daily Quizzes

A quiz will be due each class period. I will place the quiz in my folder on the Academic Volume for you to take sometime before the next class. You will be quizzed on the material covered in that lecture and the assigned reading. I will specify the pages in the text that will be covered on the quiz and any problems pertaining to the quiz at the end of each class period.

2. Exams

A tentative exam schedule is given below:

<u>Type of Exam</u>	<u>Date</u>	<u>Topics Covered</u>
Mini Exam A	Sept. 1 (due Sept. 6)	Acid Base Chemistry
Exam 1	Sept. 29	Amino Acids, Proteins, Hb & Mb
Mini Exam B	Oct. 20 (due Oct. 23)	Kinetics, Thermodynamics, Carbohy.
Exam 2	Nov. 10	Glycolysis, Krebs, ETC
Exam 3	Dec. 4	FA and AA metabolism

The exams are take-home to allow you an adequate amount time to complete the exam. I typically give you 2.5-3 hours to complete the exam (you will be given less time to complete the mini exams). This does not mean that it **SHOULD** take that long to finish it, but gives you plenty of time to review your answers. I will distribute the exam at the end of the class period – then the next class period we will not have class (there is no class period off for the mini exams). You must return the exam to me at the beginning of the next class period that we meet. Late exams will incur a penalty - **10% reduction per hour**. All exams are closed-book, closed-notebook and are to be completed by you alone.

3. **Final Exam:** The final exam is December 8th at 1:00 p.m. This will be an in-class final.

4. **Final Average:** Your grade will be calculated as follows:

Mini Exam A	40 points
Exam 1	100 points
Mini Exam B	60 points
Exam 2	100 points
Exam 3	100 points
Quizzes	100 points
Final Exam	<u>100 points</u>
	600 points

5. **Final Grade:** The following is a guide in determining your final letter grade:

Points accrued:

540-600	A
480-539	B
420-479	C
360-419	D
Below 360	F

Pluses and minuses will be assigned within the ranges given above.

POLICIES

1. Daily Quizzes

If you arrive late to class you will not be able to turn in the quiz for that day. The quiz for the next class period will be posted on the academic volume.

2. Assigned Problems

Problem sets will be handed out in class and the answers will be placed in the chemistry library and are available on reserve in the main library. I may also assign problems at the end of a chapter and the answers are found in the back of the text. Problem sets will be posted on the academic volume.

3. Use of old exams

You are **NOT** to obtain, read or use copies of old exams or quizzes at any time during the semester for this course. If you ignore my policy you will be violating the Honor Code and appropriate action will ensue.

4. Make-ups

If you are unable to take an exam because of an illness or an athletic event you must notify me prior to the time of the scheduled exam or quiz. Failure to notify me will result in a zero for that exam. If you miss a quiz it will be recorded as a zero. There are no make-ups. At the end of the semester I will drop the 3 lowest quiz grades. If you miss 3 quizzes then those three will be dropped. If you did not miss any quizzes the 3 lowest quiz scores will be dropped.

5. Email

During the semester I will give you information via email; therefore you will be required to check you email between classes. You will be responsible for any problems or reading I assign over email.

6. Academic Volume

The syllabus, quizzes and some handouts can be found in my folder on the Academic Volume. I will inform you as the semester goes along, which items you can find in that folder.