

**SPRING SEMESTER 2010  
SURVEY IN BIOCHEMISTRY  
CHEMISTRY 361**

**INSTRUCTORS:** Drs. Ken Olsen and Louis Deiss

**TIME AND LOCATION: LECTURE:** T-TH 1:00-2:15pm, LSB 142 (Quinlan Auditorium)

**DISCUSSION:** M or W 1:40 in DH-531, or W at 2:45 in DH-733 or F 2:45 in DH-735

**REQUIRED TEXTS:** Berg, Tymoczko, and Stryer (2006) *Biochemistry*, 6th ed., and Gumpert et al. (2006) *Student Companion to Accompany Biochemistry*, 6<sup>th</sup> ed.

**TENTATIVE SCHEDULE OF LECTURES AND EXAMINATIONS**

Lecture#	Day	Date	Topics from Berg <i>et al.</i>	Chapter
1	T	1/19	Introduction	1
2	Th	1/21	Water and pH, Amino Acids	1,2
3	T	1/26	Protein Structure	2
4	Th	1/28	Exploring Proteins	3
5	T	2/2	Hemoglobin	7
6	Th	2/4	Flow of Genetic Information	4
7	T	2/9	Exploring Genes	5
<b>8</b>	<b>Th</b>	<b>2/11</b>	<b>Examination I - Chapters 1-5, 7</b>	
9	T	2/16	Enzyme Kinetics	8
10	Th	2/18	Enzyme Inhibition	8
11	T	2/23	Enzyme Mechanisms & Allosterism	9,10
12	Th	2/25	Carbohydrates	11
13	T	3/2	Lipids & Membranes	12
14	Th	3/4	Channels & Pumps	13
	<b>T, Th</b>	<b>3/8-3/12</b>	<b>Spring Break</b>	
15	T	3/16	Signal Transduction	14
16	Th	3/18	Bioenergetics	15
<b>17</b>	<b>T</b>	<b>3/23</b>	<b>Examination #2- Chapters 8 - 15</b>	
18	Th	3/25	Glycolysis	16
19	T	3/30	Gluconeogenesis	16
20	Th	4/1	Citric Acid Cycle	17
21	T	4/6	Oxidative Phosphorylation	18
22	Th	4/8	Pentose Pathway & Glycogen Metabolism	20,21
23	T	4/13	Fatty Acid Metabolism	22
24	Th	4/15	Amino Acid Oxidation	23
25	T	4/20	Biosynthesis of Amino Acids	24
26	Th	4/22	Biosynthesis of Nucleotides	25
27	T	4/27	Biosynthesis of Lipids	26
28	Th	4/29	Integration of Metabolism	27
	F	5/7	<b>Final Examination (1:00 pm - 3:00 pm): (60% Chapters 16-18, 20-27; and 40% Chapters 1-5, 7, and 8 B 15)</b>	

Dr. Olsen will give all of the lectures and be responsible for the testing.

## EXAMINATION AND GRADING PROCEDURES AND POLICY

This Biochemistry course employs either multiple choice or essay or both formats for testing. Three major lecture examinations will be administered during this spring session. The discussion sections are worth 20% of the grade. The first two examinations are worth 25% apiece, while the cumulative final examination represents 30%. The four grades will be combined into one final % grade, which will be measured using the following scale:

A = 100-90  
A- = 89-85  
B+ = 84-80  
B = 79-70  
B- = 69-65  
C+ = 64-60  
C = 59-55  
C- = 54-50  
D+ = 49-45  
D = 44-40  
F = Less than 40

Active participation in your Discussion session throughout the entire semester may be beneficial in two ways. First it will provide information on problem solving. Second, they count 20% of the final grade. There will be group work problems and some short quizzes that will make up the discussion grades. Dr. Deiss will conduct the discussion sections.

Makeup examinations will be given at our discretion on Wednesday, April 30, the study day, and will probably be in essay and problem format. Minimally, a written doctor's or judge's excuse and **notification prior to the examination** will be needed by the appropriate Instructor. **NO EXCEPTIONS WILL BE MADE!**

Outside of class, you may contact Dr. Olsen during regularly scheduled Office Hours, which are T-Th 2:30-4 PM. Dr. Deiss will meet with students during the regularly scheduled discussion sections. Their office locations, telephone numbers, and e-mail addresses are:

Dr. K. W. Olsen, Flanner Hall-408, (773) 508-3121 [kolsen@luc.edu](mailto:kolsen@luc.edu)

If you are unable to contact the Instructor directly, or by voice or e-mail, you may leave your message with the Chemistry Departmental Office, (773) 508-3100.

### **Independent Effort**

Finally, as a pre-professional student at Loyola University Chicago, it should be obvious at this stage of your career that all answers on examinations must arise from independent, honest efforts. Nothing less is acceptable in the Land of Lincoln. Thus, any student found to be cheating on any examination will receive an automatic "0" for that examination, and his (her) name will be brought to the attention of Dr. Richard Holz, the Chairperson of the Chemistry Department, as well as to the Dean of the College of Arts and Sciences, who will decide whether further disciplinary action is necessary. Together, we encourage you to become the best that you can be, and will work with you to achieve that goal. To this end, we wish you every success!!!

## **Blackboard and Lecture Notes**

The Instructors plan to use Blackboard to distribute lecture notes and slides. The web address for this site is found at Loyola's homepage. Go to "Loyola links" and then click on "Blackboard." Blackboard will ask for your universal ID and password and once these have been correctly entered, Blackboard will list all of those courses for which you are enrolled and for which a Blackboard course exists. Chemistry 361 should be one of those courses. We will make every effort to have the materials that are to be posted on the site at least a day before the lecture so that you can print them and bring them to class. A word of foreknowledge is that the PowerPoint presentations can be quite large (on the order of megabytes) and hence, if one does not have a high-speed internet connection at home, one should consider using Loyola's computer resources to download the materials.

## **Error Policy**

The instructors reserve the right to amend or correct this syllabus.

## **Discussion Topics**

<u>Week</u>	<u>Topic</u>
1	pH problems
2	Protein structure
3	Hemoglobin
4	Genetic Information Flow
5	Enzyme Kinetics
6	Allosteric Enzyme Kinetics
7	Membranes
8	Spring Break
9	Signal Transduction
10	Glycolysis & Gluconeogenesis
11	TCA & OxPhos
12	Metabolic control
13	Metabolic control
14	Integration of Metabolism