Chemistry 370
Biochemistry
Fall 2017

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Lectures: 12:35 – 1:25 pm on MWF in Cuneo 210
Discussions: Fri 9:20 -10:10 am in Flanner 007
Fri 10:25 – 11:15 am in Flanner 007

TENTATIVE SCHEDULE OF LECTURES AND QUIZZES

#	Day	Date	Subject	Chapters
1	M	8/28	Introduction & Biomolecules	1
2	W	8/30	Water & pH	1
3	F	9/1	Water & pH	1
4	M	9/4	Labor Day – no class	
5	W	9/6	Amino Acids, Peptides and Proteins	2
6	F	9/8	Amino Acids, Peptides and Proteins	2
7	M	9/11	Exploring Proteins	3
8	W	9/13	Exploring Proteins	3
9	F	9/15	Flow of Genetic Information	4
10	M	9/18	Genetic Code	4
11	W	9/20	Exploring Genes	5
12	F	9/22	Exploring Genes	5
13	M	9/25	Test 1	1 – 5
14	W	9/27	Evolution & Bioinformatics	6
15	F	9/29	Evolution & Bioinformatics	6
16	M	10/2	Hemoglobin	7
17	W	10/4	Hemoglobin	7
18	F	10/6	Enzymes: Basic Concepts & Kinetics	8
19	M	10/9	Fall Break – no class	
20	W	10/11	Enzymes: Basic Concepts & Kinetics	8
21	F	10/13	Enzymes: Catalytic Strategies	9
	Sat	10/14	Midwest Enzyme Chemistry Conference	
22	M	10/16	Enzymes: Catalytic Strategies	9
23	W	10/18	Regulation: Enzymes	10
24	F	10/20	Regulation: Enzymes	10
25	M	10/23	Test 2	6 – 10
26	W	10/25	Carbohydrates	11
27	F	10/27	Lipids and Membranes	12
28	M	10/30	Lipids and Membranes	12
29	W	11/1	Channels and Pumps	13
30	F	11/3	Channels and Pumps	13

31	M	11/6	Signal Transduction		14
32	W	11/8	Signal Transduction		14
33	F	11/10	Signal Transduction		14
34	M	11/13	Test 3		11 – 14
35	W	11/15	Metabolism and Bioenergetics		15
36	F	11/17	Glycolysis and Gluconeogenesis		16
37	M	11/20	Glycolysis and Gluconeogenesis		16
	W	11/22	Thanksgiving Break – no class		
	F	11/24	Thanksgiving Break – no class		
38	M	11/27	Glycolysis and Gluconeogenesis		16
39	W	11/29	Citric Acid Cycle		17
40	F	12/1	Citric Acid Cycle		17
43	M	12/4	Oxidative Phosphorylation		18
44	W	12/6	Oxidative Phosphorylation		18
45	F	12/8	Summary		27
	M	12/15	9-11 am	Final Examination	15-18 & 27 plus 1-15

Required Text: Berg, Tymoczko, Gatto and Stryer, *Biochemistry*, 8th Ed.

You should read the appropriate chapter **before** class. Please realize that I will not have time to lecture on every topic but will emphasize what I consider to be the most important topics. Obviously, these more important topics will be emphasized on examinations but you are responsible for all of the text, lecture and discussion material.

Recommended Text: Deis, et al. (2011) 7th edition, *Student Companion to Accompany Biochemistry*.

Office Hours: During the hour after any lecture or discussion.

Grading Policy: There are 3 tests and a final examination during the course. There will be 100 points possible on each test and 200 on the final. The final examination will be 50% on new material and 50% on the material covered in Tests 1 to 3. If one of the regular examinations is the lowest score, it will be dropped and the final will count 200 points. If the final examination is the lowest score, then all four examinations will count 100 points each. In addition there will be homework problems worth at total of 50 points that will be graded only on the basis of being honestly attempted and turned in on time. You may work these problems in groups but I would like written answers from each you individually. Finally, there will be an additional 50 points assigned to the discussion sections. This will be graded on participation in the Discussion Section activities, including assignments turned in as part of the discussion section activities. Thus the course grade will be determined on the basis of 500 possible points. The course is curved. There will be a cumulative curve given in class after each examination so that you will always know how you are doing. No make-up tests will be given. If you miss a test for any reason,

then your final will automatically count 200 points. If you miss more than one test a make-up examination will be given at my discretion. Minimally, a written doctor's or judge's note and notification prior to the quiz (via phone or e-mail) will be needed for any missed test to be made up.

Note that the last day to with draw from the course with out getting a WF is Friday, Nov. 3.

Tests: The tests will be a mixture of multiple choice, problems and short essays.

Independent Effort: Students are referred to http://www.luc.edu/media/lucedu/cas/pdfs/academicintegrity.pdf for the CAS Statement on Academic Integrity. Students are advised to download and read the statement as it will be part of the governance of their efforts in the course. In addition, as pre-professional students at Loyola University Chicago, it should be obvious at this stage of your careers that all answers on examinations must arise from independent, honest efforts. Nothing less is acceptable in the Land of Lincoln. Thus, any student found cheating on any examination will receive an automatic "0" for that examination. His (her) name will be reported to Prof. Mota de Freitas, the Chairperson of the Chemistry and Biochemistry Department, as well as to the Dean of the College of Arts and Sciences, who will decide whether further disciplinary action is necessary. We remind you that such an incident will become part of one's personal record and may be transmitted to organizations such as medical schools, dental schools, pharmacy programs, graduate programs, etc. Together, we encourage you to become the best that you can be, and will work with you to achieve that goal.

Appropriate In-class Behavior and Electronic Devices: In this course it is incumbent upon you, as a student, to maintain a professionalism and code of conduct appropriate with the course material and course enrollment. To this end, rude, disruptive behavior (such as talking during class, viewing computer materials not concerning class subjects, etc...) **will not be tolerated**. It is acceptable to use laptops or comparable devices (tablets, iPads, etc.) for taking notes in class. Voice recording but not visual recording is allowed. Cell phones, pagers, wireless PDAs, etc. must be turned off during class. If your device is activated during class, you must leave the class immediately and cannot return for the duration of that class period.

Sakai: I plan to use the Sakai website (see link on LUC website) for all class notes and announcements. Please ask me for a handout for instructions on how to use this site if you are not already familiar with it. It is essential that you access the site regularly to do well in this class.

Help Sessions: I will be available for the hour before each exam to answer last minute questions you have on the material. These help session will be held in the lecture room unless it is occupied by another class. This is in addition to the regular office hours.

Discussion Activities:

There will be an opportunity in all discussion sections for you to ask questions but most of these sections (except the ones the week before a test) will have activities planned for them. You should attend the one that you are registered for, but feel free to attend both for the test preparation sessions.

Week	Dates	Activity
1	9/1	Normal & Complex pH problems
2	9/8	Protein structure paper (& pH problems?)
3	9/15	Amino Acid Sequencing
4	9/22	Prep for test 1- You can attend both sessions.
5	9/29	VMD -protein structure – bring your laptop if you have one
6	10/6	Hemoglobin paper
7	10/13	Enzyme Evolution paper & kinetics problems
8	10/20	Prep for test 2 – You can attend both sessions.
9	10/27	Comparative Modeling
10	11/3	Comparative Modeling
11	11/10	Prep for test 3 – You can attend both sessions.
12	11/17	Evolution of pathways paper
14	11/24	Thanksgiving break – no class
13	12/1	Control of metabolism paper
15	12/8	Prep for final exam – You can attend both sessions.

Problem Due Dates: Assignments are due at the beginning of class.

Problem Set	Due Date	Topic
1	9/6	pH problems
2	9/11	amino acids and proteins
3	9/18	amino acid sequence problems
4	9/25	genes
5	10/2	hemoglobin
6	10/11	enzyme kinetics (due on Wednesday)
7	10/16	enzyme catalysis and regulation
	10/23	no problems due
8	10/30	carbohydrates, lipids and membranes
9	11/6	signal transduction
10	11/13	metabolism
11	11/20	glycolysis & gluconeogenesis
	11/27	Thanksgiving – no problems
12	12/4	citric acid cycle & ox-phos
13	12/8	integration of metabolism (due on Friday)