SPRING SEMESTER 2018
BIOCHEMISTRY
CHEMISTRY 361

INSTRUCTORS: Drs. Ken Olsen
TIME AND LOCATION: LECTURE: MWF 8:15 – 9:05 AM. Flanner Hall 007
DISCUSSION: M 9:20 – 10:10 and M 10:25 – 11:15 AM in Flanner Hall 007

TENTATIVE SCHEDULE OF LECTURES AND EXAMINATIONS

Lecture#	Day	Date	Topics from Campbell *et al*.	Chapter
0	M	1/15	Martin Luther King, Jr. Day – no class	
1	W	1/17	Introduction – Cells & Bioenergetics	1
2	F	1/19	Water and pH	2
3	M	1/22	Buffers	2
4	W	1/24	Amino Acids & Proteins	3
5	F	1/26	3D Protein Structure	4
6	M	1/29	3D Protein Structure - Hemoglobin	4
7	W	1/31	Protein Purification & Characterization	5
8	F	2/2	Protein Purification & Characterization	5
9	M	2/5	Enzyme Kinetics	6
10	W	2/7	Exam I	1 to 5
11	F	2/9	Enzyme Kinetics	6
12	M	2/12	Enzyme Mechanisms & Control	7
13	W	2/14	Enzyme Mechanisms & Control	7
14	F	2/16	Lipids and Membranes	8
15	M	2/19	Lipids and Membranes	8
16	W	2/21	Nucleic Acid Structure	9
17	F	2/23	Nucleic Acid Structure	9
18	M	2/26	Bioenergetics	15
19	W	2/28	Bioenergetics	15
20	F	3/2	Carbohydrates	16
	M	3/5	Spring Break	
	W	3/7	Spring Break	
	F	3/9	Spring Break	
21	M	3/12	Carbohydrates	16
22	W	3/14	Glycolysis	17
23	F	3/16	Exam II	6 to 9 & 15 to 16
24	M	3/19	Glycolysis & Glycogen	17
25	W	3/21	Glycogen	18
26	F	3/23	Gluconeogenesis & Control	18
	M	3/26	Last Day to Drop with a W	
27	M	3/26	Control & Pentose Phosphate Pathway	18
28	W	3/28	Citric Acid Cycle	19
	F	3/30	Easter Break	
	M	4/2	Easter Break	
29	W	4/4	Citric Acid Cycle	19
30	F	4/6	Electron Transport	20

31	M	4/9	Electron Transport	20
32	W	4/11	Lipid Catabolism	21
33	F	4/13	Lipid Biosynthesis	21
34	M	4/16	Nitrogen Metabolism – Amino Acids	23
35	W	4/18	Exam III	17 to 20
36	F	4/20	Nitrogen Metabolism – Nucleic Acids	23
37	M	4/23	Integration of Metabolism	24
38	W	4/25	Integration of Metabolism	24
39	F	4/27	Integration of Metabolism	24
	W	5/2	Open Q&A Session – time and place to be determined	
	Th	5/3	**Final Examination (9:00 – 11:00 am)**	

Required Text: Campbell, Farrell & McDougal, *Biochemistry*, 9th edition, Cengage

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.

EXAMINATION AND GRADING PROCEDURES AND 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 34% on new material and 66% 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 test (via phone or e-mail) will be needed for any missed test to be made up.

Office Hours:

Dr. K. W. Olsen T-Th 10-11 AM. Flanner Hall-409, (773) 50**8-3121** kolsen@luc.edu

If you are unable to contact me 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. Duarte Freitas, 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.

Sakai and Lecture Notes

The Instructors plan to use Sakai 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 "Sakai." Sakai will ask for your universal ID and password and once these have been correctly entered, Sakai will list all of those courses for which you are enrolled and for which a Sakai course exists. Chemistry 361 should be one of those courses. I 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 or download them and bring them to class. The PowerPoint presentations can be quite large (on the order of megabytes) and hence, if you do not have a high-speed internet connection at home, you should consider using Loyola's computer resources to download the materials.

Error Policy

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

Discussion Topics

Session	Date	Topic
1	1/22	pH problems
2	1/29	Proteins & Hemoglobin
3	2/5	Open discussion to review for Exam 1
4	2/12	Enzyme kinetics
5	2/19	Enzyme Mechanisms & Control
6	2/26	Lipids and Membranes
7	3/12	Open discussion to review for Exam 2
8	3/19	Glycolysis
9	3/26	Carbohydrate Metabolism
10	4/9	TCA & OxPhos
11	4/16	Open discussion to review for Exam 3
12	4/23	Lipid and Nitrogen Metabolism

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

Problem Set	Due Date	Topic
1	1/22	pH problems
2	1/29	Proteins & Hemoglobin
3	2/5	Protein Purification & Characterization
4	2/12	Enzyme kinetics
5	2/19	Enzyme Mechanisms & Control
6	2/26	Lipids and Membranes
7	3/12	NA structure, bioenergetics, carbohydrates
8	3/19	Glycolysis

9	3/26	Carbohydrate Metabolism
10	4/9	TCA & OxPhos
11	4/16	Lipid Metabolism
12	4/23	Nitrogen Metabolism

Graduate Students Taking Chem 461

Honors Students and graduate students taking Chem 461 will be required to complete a molecular modeling assignment. See Dr. Olsen for instructions.