Syllabus Chem361-001: Biochemistry Survey

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Office Hours: Friday 1:30-3:30 or by appointment.
Lecture: MWF 1:40-2:30 pm, Cuneo Hall 109
Discussion: Monday 2:45-3:35 PM, Dumbach Hall 236 for Chem 361-002
Wednesday 2:45-3:35 PM, Dumbach Hall 236 for Chem 361-003
Text Book: Biochemistry 7th Campbell & Farrell

Schedule of Lectures:
**The schedule may be slightly modified during the course of the year.*

#	Day	Date	Topic	Chapter
Sector I: Biochemical Background & Protein Chemistry				
1.	M	8/26	Biochemistry and Organization of Cells	1
2.	W	8/28	Water: The Solvent of Biochemical Reactions	2
3.	F	8/30	Amino Acids and Peptides	3
	M	*9/2*	*Labor Day*	
4.	W	9/4	Three-Dimensional Structure of Protein	4
5.	F	9/6	Protein Purifications and Characterization Techniques	5
6.	M	9/9	The Behavior of Proteins: Enzymes	6
7.	W	9/11	Enzymes, Mechanisms and control	7
8.	F	9/13	Enzymes, Mechanisms and control	8
9.	M	9/16	Review for Test 1	1-8
10.	W	9/18	Test 1	1-8
Sector II: Central Dogma of Life				
11.	F	9/2	Nucleic Acids: How Structure Conveys Information	9
12.	M	9/23	Nucleic Acids: How Structure Conveys Information	9
13.	W	9/25	DNA Replication	10
14.	F	9/27	DNA Replication/ Biosynthesis of RNA	10-11
15.	M	9/30	Biosynthesis of RNA/Protein Synthesis	11-12
16.	W	10/2	Protein Synthesis/Nucleic Acid Biotechnology	12-13
17.	F	10/4	Virus, Cancer, and Immunology	14
18.	M	10/7	Virus, Cancer, and Immunology	14
	M	*10/7*	*Mid Semester Break*	
19.	W	10/9	Review for Test 2	9-14
20.	F	10/11	Test 2	9-14

#	Day	Date	Topic	Chapter
Sector III: Energy and Carbohydrate Metabolism				
21.	M	10/14	Energy Changes and Electron Transfer	15
22.	W	10/16	Carbohydrates	16
23.	F	10/18	Glycolysis	17
24.	M	10/21	Storage and Control in Carbohydrate Metabolism	18
25.	W	10/23	The Citric Acid Cycle	19
26.	F	10/25	The Citric Acid Cycle	19
27.	M	10/28	Electron Transport and Oxidative Phosphorylation	20
28.	W	10/30	Electron Transport and Oxidative Phosphorylation	20
29.	F	11/1	Review for Test 3	15-20
30.	M	11/4	Test 3	15-20
Sector IV: Other Metabolisms and Regulation				
31.	W	11/6	Photosynthesis	21
32.	F	11/8	Photosynthesis	21
33.	M	11/11	Lipid Metabolism	22
34.	W	11/13	Lipid Metabolism	22
35.	F	11/15	The Metabolism of Nitrogen	23
36.	M	11/18	The Metabolism of Nitrogen	23
37.	W	11/20	Integration of Metabolism: Cell Signaling	24
38.	F	11/22	Integration of Metabolism: Cell Signaling	24
39.	M	11/25	Integration of Metabolism: Cell Signaling	24
	WF	*11/27&29*	*Thanksgivings*	
40.	M	12/2	Trends in Biomedical and other Biological Research	
41.	W	12/4	Comprehensive Review I	21-24
42.	F	12/6	Comprehensive Review II	1-20
43.	M	12/16	Final	

Grading Policy: There are 3 tests and 1 final examination during the course. There will be 100 points possible on each of the three 50-minute tests. There will be 200 points possible on the 2-hour final. The final examination will be comprehensive.

***** On an 100 point scale, if one of the 3 tests is the lowest score, it will be dropped and the final will count 200 points; if the final examination is the lowest score (on an 100 point scale), then all 4 examinations will count 100 points each giving 400 pts as the total points for final grades. The letter grade will be determine using the following scale:

A = 340-400

A^- = 320-339

B^+ = 300-319

B = 280-299

B^- = 260-279

C^+ = 240-259

C = 220-239

C^- = 200-219

D^+ = 180-199

D = 160-179

F ≤ 160

Make up exams can ONLY be given to TRUE EMERGENCIES, such as illness, family death or extreme weather etc. Conflict of travel plans will NOT excuse the student from scheduled exams; in such case, students can choose to drop that exam as the lowest score. A written proof is needed for a student to have makeup exams; make up exams will be at the level of difficulty that is the same as or higher than the original exam.

Academic Integrity It should be obvious that all answers on examinations must arise from independent, honest efforts. Nothing less is acceptable at Loyola University Chicago. **Any student found cheating on any exam will receive an automatic "0" for the examination, and his (her) name will be brought to the attention of the Chair of the Department and the Dean of the College, who will decide if further disciplinary action is necessary.**

Classroom Behavior This is a course with large enrollment. It is incumbent upon the students to maintain a professionalism and code of conduct appropriate with the course material and course enrollment. Rude, disruptive behavior (such as talking during lecture) will NOT be tolerated. While it is acceptable to use laptops or tablets for taking notes, using electronic device for reasons unrelated to class is not permitted. Video recording is not permitted. Severe cases of disruptive behavior may result in grade penalty at instructor's discrete.

Sakai: The instructor will use the Sakai website (https://sakai.luc.edu/) for distribute class material and announcements. It is <u>essential</u> that you access the site regularly to do well in this class.

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

Discussion Activities:

Most of the discussion sessions will have course-related research topics, in addition to question-oriented lecture review. The discussions will be on Mondays or Wednesdays from 2:35-3:45 PM. You should attend the one that you are registered for. The discussion material will be reflected in exams.

Week	Dates	Activity
1	8/26 & 28	Biochemistry vs. Molecular Biology.
	9/2 & 4	*No Discussion Labor Day Week*
2	9/9 & 11	Green Fluorescent Protein.
3	9/16 & 18	Enzymes as drug targets.
4	9/23 & 25	From Genetics to Epigenetics
5	9/30 & 10/2	RNAi and Gene Knockout.
	10/7 & 9	*No Discussion Mid-semester Break*
6	10/14 & 16	Metabolic Diseases, Obesity, Diabetes.
7	10/21 & 23	Sugar and nutrition.
8	10/28 & 30	Toxins.
9	11/4 & 6	Photosynthesis and Alternative Energy
10	11/11 & 13	lipids, underrated biomolecule.
11	11/18 & 20	Signal Transduction, a molecular view of hormone and beyond.
	11/25 & 27	*No Discussion Thanksgiving*
12	12/2 & 4	Aging and neurological disorders.