

## Syllabus Chem371: Biochemistry II (*\*This document is subject to correction and update.*)

\*The first day of the class will be asynchronous due to instructor's family medical emergency (surgery), the rest of the class will be synchronous.

**Instructor:** Dali Liu Ph.D. Professor of Biochemistry  
**Office:** Flanner Hall 422  
**Zoom Link:** <https://luc.zoom.us/j/85995176596> (*This link serves all zoom meetings including office hours*)  
**Email:** [dliu@luc.edu](mailto:dliu@luc.edu) \*A quick response outside of work hours may not be guaranteed.  
**Phone:** 773-708-3093 (Please Leave Messages)  
**Pre-requests** Chem 370 Biochemistry I  
**Lecture:** Tu & Th 1:00 PM-2:15 PM  
**Discussion:** Tu 2:30 PM-3:20 PM,  
Th 2:30 PM-3:20 PM,  
**Office Hours:** The standard office hour would be 4-5 PM on Tu & Th.  
Zoom meeting appointments can be made on mutually convenient time  
**Text Book:** Biochemistry 9<sup>th</sup> Edition, by JM. Berg, JL. Tymoczko, L Stryer  
**Sakai:** It is essential that you access the site regularly in this class.

### Schedule of Lectures:

#	Day	Date	Topic	Chapter
<b>Energy Metabolism (Continued...)</b>				
1.	Tu	1/18	Photosynthesis	19
2.	Th	1/20	Photosynthesis	20
3.	Tu	1/25	Glycogen Metabolism	20
4.	Th	1/27	Glycogen Metabolism	21
5.	Tu	2/1	Fatty Acid Metabolism	22
6.	Th	2/3	Fatty Acid Metabolism	22
7.	Tu	2/8	Test 1	19-22
<b>Nitrogen Metabolism</b>				
8.	Th	2/10	Protein Turnover/Amino Acid Catabolism	23
9.	Tu	2/15	Protein Turnover/Amino Acid Catabolism	23
10.	Th	2/17	Amino Acid Biosynthesis	24
11.	Tu	2/22	Amino Acid Biosynthesis	24
12.	Th	2/24	Nucleotide Biosynthesis	25
13.	Tu	3/1	Nucleotide Biosynthesis	25
14.	Th	3/3	Test 2	23-25
		3/7-11	Spring Break No Class	
<b>Biochemistry in Metabolic Control</b>				
15.	Tu	3/15	The Biosynthesis of Membrane lipids	26
16.	Th	3/17	The Biosynthesis of Steroids	26
17.	Tu	3/21	The Integration of Metabolism	27
18.	Th	3/24	The Control of Gene Expression Prokaryotes	31
19.	Tu	3/29	The Control of Gene Expression Prokaryotes	31
20.	Th	3/31	The Control of Gene Expression Eukaryotes	32
21.	Tu	4/5	The Control of Gene Expression Eukaryotes	32
22.	Th	4/7	Test 3	26-27, 31-32
			*Chapters 28-30 will not be included in Test 3.	
<b>Biochemistry in Physiology and Biomedicine</b>				
23.	Tu	4/12	Sensory System	33
24.	Th	4/14	Sensory System	33
25.	Tu	4/19	The Immune System	34
26.	Th	4/21	The Immune System	34

27. Tu	4/26	Molecular Motors	35
28. Th	4/28	Molecular Motors	35
29. Fri	5/6	Final 1:00 PM-3:00 PM	19-27, 31-35

### Discussion Activities:

Discussion will be consisted of scientific thinking discussions, **contemporary topics related to course contents**, and exam reviews. The quality of the students' work done during discussion will be collected and checked in an unannounced fashion; the students whose work presents satisfactory quality may be awarded up to 5 extra points (in addition to 400 points total) each time an unannounced check is executed.

Week	Dates	Activity
1	1/18, 20	Syllabus & "Scientific Thinking" Discussion: Identify and solve real problems.
2	1/25, 27	<b>Alternative Energy (Photosynthesis)</b>
3	2/1, 3	<b>Metabolic Diseases, Diabetes. (Glycogen metabolisms)</b>
4	2/8, 10	Test Day/After Test Review
5	2/15, 17	"Scientific Thinking" Discussion: From hypothesis to experiments.
6	2/22, 24	<b>New Antimicrobial Approaches. (Amino Acid Metabolism)</b>
7	3/1,3	Test Day/After Test Review
	<b>3/6-11</b>	<b>Spring Break</b>
8	3/15,17	"Critical Thinking" Discussion: Disapprove to prove the truth.
9	3/22-24	<b>Cancer Biochemistry (Lipid Metabolism)</b>
10	3/29-31	<b>Neurodegenerative diseases (Eukaryotic Gene Regulation)</b>
11	4/5,7	Test Day/After Test Review
12	4/12, 14	Overview of Drug Discovery (Chapter 36)
13	4/19, 21	<b>Translational Research and Bioethics</b>
14	4/26, 28	<b>Autoimmune Diseases and anti-inflammation. (Immunology)</b>

**Grading Policy:** There are 3 tests and 1 final examination during the course. There will be 100 points possible on each of the three 75-minute tests. The final examination will be comprehensive. There will be 200 points possible on the 2-hour final. If the final counts 200 in total, then the lowest score of the first three will be dropped. Alternately, the final can be scaled back to 100 while keep the first three scores in your total score. Either way the highest possible total will be 400. The letter grade will be determined by using the following scale. To ensure proper difficulty in this online version of the course, top 11 students of this class (of 32 students) will be guaranteed "A" grades if fewer than 11 score <90%.

### Grading Sale:

A	360	(90%)
A-	348	(87%)
B+	336	(84%)
B	320	(80%)
B-	308	(77%)
C+	296	(74%)
C	280	(70%)
C-	240	(60%)
D	200	(50%)
F	160	(<50%)

**Any request to move up the letter grade because "it is close" will be declined.** In principle, there will be NO makeup exam if a student misses it because of the nature of open exams. A missed exam will automatically count as the "drop", and final will count 200 as mentioned previously. A make-up exam can be considered in cases of true emergencies, **such as severe weather, medical emergency or family death etc.** A student should provide written

evidence to prove such emergencies. Considering the nature of the open exam, the makeup exam will have to be completely remade. There can be considerable delay on the time when a make-up exam is given. **In-semester travel for non-emergency reasons, such as family reunion, weddings or conferences etc. will not count as emergencies.**

### **Academic Integrity**

All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, which can be viewed at: <http://www.luc.edu/cas/advising/academicintegritystatement/> A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty. Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, and submitting false documents. Any instance of dishonesty (including those detailed on the website provided above or in this syllabus) will be reported to The Chair of The Department of Chemistry & Biochemistry who will decide what the next steps may be. **(please specify what the punishments will be for transgressions).**

### **Student Accommodations**

If you have any special needs, please let me know in the first week of classes. The university provides services for students with disabilities. Any student who would like to use any of these university services should contact the Student Accessibility Center (SAC), Sullivan Center, (773) 508-3700. Further information is available at <http://www.luc.edu/sac/>.

### **Accommodations for Religious Reasons**

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor ***within 10 calendar days of the first class meeting of the semester*** to request special accommodations, which will be handled on a case by case basis.

### **Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):**

Students missing classes while representing Loyola University Chicago in an official capacity (e.g. intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes.

Students should discuss with faculty the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide their instructors with proper documentation (develop standard form on web) describing the reason for and date of the absence.

This documentation must be signed by an appropriate faculty or staff member, and it must be provided as far in advance of the absence as possible. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to give the student the opportunity to take the examination at another time. (<https://www.luc.edu/athletheadvising/attendance.shtml>)

**Course Repeat Rule** Effective with the Fall 2017 semester, students are allowed only THREE attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website: <http://www.luc.edu/chemistry/forms/> and personally meet and obtain a signature from either the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.