
Syllabus Spring 2009

Chem 461A, 10 am: Final Exam Friday, May 15, 8-10 am
Chem 461B, 12 pm: Final Exam Wednesday, May 13, 12-2 pm

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Fri 11am-12pm (Or just set up a time with me!)

Course Overview:

We will begin the term by focusing on mechanistic and energetic aspects of acid-base and redox reactions commonly seen throughout metabolic pathways. We will then take an in-depth look at sugar metabolism, in particular glycolysis. We will then turn our attention to selected topics related to the biosynthesis and breakdown of lipids, amino acids and/or nucleic acids. Following Spring Break, we will begin our investigation of the metabolic pathways surrounding the central dogma—specifically replication, transcription and translation. Throughout the semester, you will research and write a term paper, and near the end of the term will present student-selected literature topics addressing various fascinating areas of biochemistry.

Required Materials

- Textbook—Voet, Voet & Pratt *Fundamentals of Biochemistry: Life at the Molecular Level*, 2nd edition (Wiley 2006)
- Calculator—capable of scientific notation & logarithms

Web Resources:

- Blackboard: <http://blackboard.ups.edu> Password: photoreceptor
- Student Companion Site for VV&P (<http://www.wiley.com/college/voet>)

Weekly Guides:

Every Monday, you will receive a “Weekly Guide” that details the lecture material that will be covered that week, the reading assignments that correspond to that material, a list of suggested end-of-chapter problems and a list of the specific aspects of the material that I expect you to know. These guides will also be posted on BlackBoard.

Evaluation:

Mini Exams (60%): Five mini exams are scheduled for this term (see schedule below for dates). Any missed exam must be made up as soon as possible. If you have a diagnosed disability, please let me know so appropriate accommodations can be made.

Final Exam (20%): Your final is scheduled for (10 am lecture) **Friday, May 15, 8-10 am**, or (noon lecture) **Wednesday, May 13, 12-2 pm**. This exam will be comprehensive and you may use up to one hour of extra time when you take this exam.

Term Paper and Presentation (20%): This assignment is intended to give you a chance to explore an area of the primary scientific literature interesting to you, and to look in detail at specific evidence for a thesis statement that you will develop. The assignment will be described in detail separately. The evaluation will include several preliminary assignments, an oral presentation during the last weeks of the course, and submission of a final written draft of the term paper.

Final Grade: $0.6 * (\text{Mini-Exam ave}) + 0.2 * \text{Final Exam score} + 0.2 * \text{Term Paper/Pres score}$

Grading Scale:

A	90-100%
B	75- 89%
C	60- 74%
D	50- 59%
F	0- 49%

Note that this is an approximate scale. I may adjust it *downward*.

Academic Honesty:

All work submitted during this course is expected to reflect your effort. When the time comes to write up work for submission, it must be your work, written in your own words and reflecting your individual understanding of the material. I will not give credit for assignments that do not meet these criteria.

Approximate Schedule

<u>Week</u>	<u>Dates</u>	<u>Topic</u>	<u>Reading</u>	<u>Evaluation</u>
1	1/21, 1/23	Introduction to Metabolism	Chapter 13	
2	1/26, 1/28, 1/30	Sugar Metabolism	Chapter 14	
3	2/2, 2/4, 2/6	Glycolysis & Fermentation	Chapter 14	Mini Exam-1 (W)
4	2/9, 2/11, 2/13	Glycogen & Gluconeogenesis	Chapter 15	
5	2/16, 2/18, 2/20	Citric Acid Cycle	Chapter 16	
6	2/23, 2/25, 2/27	Citric Acid Cycle	Chapter 17	Mini Exam-2 (W)
7	3/2, 3/4, 3/6	e ⁻ Transport and Ox. Phos.	Chapter 17	
8	3/9, 3/11, 3/13	Lipid & Amino Acid Metabolism	Chapters 19 & 20	
	3/16-3/20	Spring Break		
9	3/23, 3/25, 3/27	Nucleic Acid/Chromatin Structure	Chapter 23	Mini Exam-3 (W)
10	3/30, 4/1, 4/3	Replication, Repair & Recombination	Chapter 24	
11	4/6, 4/8, 4/10	Transcription/Translation	Chapter 25 & 26	
12	4/13, 4/15, 4/17	Student Presentations	TBA	Mini Exam-4 (W)
13	4/20, 4/22, 4/24	Student Presentations	TBA	
14	4/27, 4/29, 5/1	Student Presentations	TBA	
15	5/4, 5/6	Wrap-Up	TBA	Mini Exam-5 (W)

Final Exams:

461A (10am lecture) Friday May 15, 8-10am.

461B (12pm lecture) Wednesday, May 13, 12-2 pm.