

**Instructor**

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**Course website**

<http://web.chem.ucla.edu/~rebecca/153A/>

**Textbook**

Nelson & Cox. *Lehninger Principles of Biochemistry* 5<sup>th</sup> Edition, W.H. Freeman, 2008.

**Lectures**

1) MTWF 10:00-10:50 am, CS 50  
 2) MTWF 11:00-11:50 am, CS 24  
*Please attend the lecture in which you are enrolled.*

**Course mission statement**

To help students learn the fundamental ideas and language of biochemistry so that they may recognize, understand, and communicate sound science.

**Tentative lecture schedule**

WEEK	DATE, DAY	TOPIC	PAGES IN TEXT	QUIZZES & EXAMS
<b>1</b>	Mar 28	<b>M</b> Introduction & overview	(skim 1-42 for review)	
	29	<b>T</b> Water, Acid-base chemistry	43-66	
	30	<b>W</b> Titration curves, Buffers		
	Apr 1	<b>F</b> Amino acids	71-81	
<b>2</b>	4	<b>M</b> Peptides and proteins	82-4, 113-5, 140-3, 145-8	
	5	<b>T</b> Protein sequence (1°) and evolution	92-4, 102-6	Amino acids quiz
	6	<b>W</b> Protein conformation and 2° structure	115-128	in discussion this week
	8	<b>F</b> Protein folds and assemblies (3°, 4°)	129-131, 135-140	
<b>3</b>	11	<b>M</b> Carbohydrates – mono & disaccharides	235-244	
	12	<b>T</b> Carbohydrates – oligo and polysaccharides	244-265	Carbohydrates quiz
	13	<b>W</b> Lipids	343-363, 365-6, 513	in discussion this week
	15	<b>F</b> Membranes	371-375, 381-386	
<b>4</b>	18	<b>M</b> Membrane proteins	375-380, 389-396	Fatty acids quiz in discussion
	19	<b>T</b> Methods in protein structure analysis	94-100, 122, 132-4	
	20	<b>W</b> Molecular binding and allostery	153, 155-7, 162, 164-5	<b>Exam 1</b>
	22	<b>F</b> Myoglobin & hemoglobin	154-5, 157-160	<b>Thurs, 4/21, 5-6:50 pm</b>
<b>5</b>	25	<b>M</b> Hemoglobin: O <sub>2</sub> binding and effectors	161, 163-4, 165-170	
	26	<b>T</b> Enzyme catalysis and classification	183-188, 495-501	
	27	<b>W</b> Mechanisms of enzyme catalysis	188-194, 210-211	
	29	<b>F</b> Mechanisms continued; Lysozyme	213-216	
<b>6</b>	May 2	<b>M</b> Serine proteases	205-209	
	3	<b>T</b> Enzyme kinetics	194-201	
	4	<b>W</b> Kinetics of enzyme inhibition	201-204	
	6	<b>F</b> Enzyme regulation	220-228	
<b>7</b>	9	<b>M</b> Metabolism	485-495, 569-577	
	10	<b>T</b> Energy currencies	501-511, 516-521	<b>Exam 2</b>
	11	<b>W</b> Glycolysis	527-531	<b>Thurs, 5/12, 5-6:50 pm</b>
	13	<b>F</b> Glycolysis	532-538	
<b>8</b>	16	<b>M</b> Glycolysis	539, 551-558, 633-634	
	17	<b>T</b> Fermentation	546-551	Glycolysis quiz
	18	<b>W</b> Pyruvate dehydrogenase complex	615-620	in discussion this week
	20	<b>F</b> Citric acid cycle	620-630	
<b>9</b>	23	<b>M</b> Citric acid cycle	630-638	
	24	<b>T</b> Oxidative phosphorylation	707-712, 512-516	Cofactors quiz
	25	<b>W</b> Electron transport	712-716	in discussion this week
	27	<b>F</b> Electron transport & shuttle systems	716-722, 731-736	
<b>10</b>	30	<b>M</b> <i>Memorial Day Holiday</i>		
	31	<b>T</b> ATP synthase	723-731	Citric acid cycle quiz
	June 1	<b>W</b> Catch up &/or Q&A		in discussion this week
<b>Finals</b>	3	<b>F</b> Catch up &/or Q&A		
	5	<b>Su</b> <b>Final Exam: 3-6 pm</b>		

## Enrollment and drop policies

PTE numbers are not given out for chemistry classes. Students on the waitlist or not yet enrolled are usually able to get into the course (although there are no guarantees). All students may attend lecture and discussion and take quizzes until their status is finalized. Students enrolled in a section that they cannot attend should use the course discussion board to find another student willing to swap enrollments (if the desired section is full). For enrollment questions or needs, see Denise Mantonya in the Chemistry Undergraduate Office, Young Hall 4009. Since this is an impacted course, students may freely drop only up until Friday of the 2<sup>nd</sup> week of the quarter. Requests to drop after this date require a sufficient reason and may or may not be approved.

## Academic honesty policy

Any suspected problems involving academic honesty will be reported immediately to the Office of the Dean of Students.

## Quiz & exam policies

Quizzes must be taken in the discussion section in which you are enrolled. No make-up quizzes or exams will be given, and exams will be offered only at the indicated times. Your lowest quiz score will be dropped. Regrade requests must be submitted to Dr. Nelson within *two weeks* of the return of the graded quiz or exam. (See the course website for further details, including quiz & exam coverage.) Exam scores will not be posted online or sent via email; you may pick up your exam in class.

## Grading

6 Quizzes, 10 points each (lowest quiz score is dropped)	= 50 points
2 Evening exams, 100 points each	= 200 points
<u>Final exam</u>	= 200 points
Total	= 450 points

## Grading Scale

Grades are determined based on performance. The quality of student answers on exams will be considered, and score boundaries for grades will be determined based on this quality. Grade scales will be announced in class following the grading of each exam. If all students give high-quality answers, all students will receive A's!

## Discussion Board – extra credit!

Post questions &/or answers on the class discussion board to earn up to 10 extra credit points for the quarter. Earn up to 2 points every two weeks. See the course website for more info. *Please note that I will not answer biochemistry questions over email – post these to the discussion board for your peers to answer, or ask in lecture, discussion, or office hours instead.*

## Tips for succeeding in this course

- Attend lectures and discussions; arrive on time
- Read the textbook before the corresponding lecture
- Complete missing/unclear notes after lecture
- Seek help immediately if you don't understand a concept
- Review your notes regularly
- Work through suggested problems and old exams
- Attend office hours regularly
- Use the discussion board for questions and review
- Review lecture podcasts as needed
- Keep up with the course; don't procrastinate
- Start learning and reviewing today!

## First assignment: Learn how to learn

Read the handout, "Learning (Your First Job)," and take the online Learning Style Survey, both of which are linked from the class website. (My survey results were: Visual/Verbal: 36; Visual/Nonverbal: 36; Auditory: 22; Kinesthetic: 20). How will you apply the suggested learning techniques to your study of biochemistry?

## Schedule of lectures, discussions, and office hours

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00	<u>OH – Dan, Young 5076</u>	1C, Boelter 4413 – Dan			
9:00		<u>OH – Alternating TAs, Young 6096</u>	1E, Boelter 4413 – Nicole 2D, MS 5233 – Sara	2F, Boelter 5280 – Nicole	1I, Boelter 5419 – Sara 2H, Boelter 5273 – Megan
10:00	<b>Lecture 1: CS50</b>	<b>Lecture 1: CS50</b>	<b>Lecture 1: CS50</b>	1G, MS 5217 – Sara	<b>Lecture 1: CS50</b>
11:00	<b>Lecture 2: CS24</b>	<b>Lecture 2: CS24</b>	<b>Lecture 2: CS24</b>	<u>OH –TA (TBD)</u>	<b>Lecture 2: CS24</b>
12:00	1A, Boelter 5264 – Reza	<u>OH – Dr. Nelson</u>	1F, Young 1044 – Mark	1H, Boelter 5252 – Megan	<u>OH – Dr. Nelson</u>
1:00	1B, Boelter 4413 – Reza 2A, Young 1044 – Dan	1D, Moore 1003 – Dan 2C, Haines A82 – Mark	2E, Young 1044 – Mark		2I, Boelter 5273 – Megan <u>OH – Mark</u>
2:00	2B, PAB 2434 – Reza	<u>OH – Dr. Nelson</u>	<u>OH – Dr. Nelson</u>	2G, MS 5225 – Nicole	
3:00			<i>Dr. Nelson's Coffee Hour</i>	<u>OH – Nicole, Boyer 269</u>	
4:00	<u>OH – Reza, Boyer 621</u>				