CHEM 153A – Biochemistry: Introduction to Structure, Enzymes, and Metabolism Winter 2010

Instructor
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Lectures
1) MTWF 9:00-9:50 am, CS 50
2) MTWF 11:00-11:50 pm, CS 24
Please attend the lecture in which you are enrolled.

Teaching assistants

Carly Ferguson	carly@chem.ucla.edu
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Textbook
Voet, Voet, and Pratt. Fundamentals of Biochemistry: Life at the Molecular Level, 3rd Edition. Wiley, 2008.
The shorter, customized text is sufficient for this course; consider buying the full text if you plan to take 153B/C.

Course website
http://web.chem.ucla.edu/~rebecca/153A

Tentative lecture schedule

WEEK	DATE		TOPIC	PAGES IN TEXT	QUIZZES & EXAMS*
1	Jan 4	**M**	Introduction & overview	1-19	
	5	**T**	Water	22-30	
	6	**W**	Acid-base chemistry, Buffers	30-36	
	8	**F**	Biomolecules and functional groups	4, 453	
2	11	**M**	Amino acids & peptides	74-89	
	12	**T**	Protein sequence	91-93, 104-120	**Amino acids quiz**
	13	**W**	Protein structure	125-150	**in discussion this week**
	15	**F**	Protein structure & function	151-165	
3	18	**M**	*MLK Holiday*		
	19	**T**	Carbohydrates – mono & disaccharides	219-228	**Carbohydrates quiz**
	20	**W**	Carbohydrates – oligo & polysaccharides	228-242, 544	**in discussion this week**
	22	**F**	Lipids	245-259	
4	25	**M**	Membranes	260-278	
	26	**T**	Special topics &/or catch-up		**Exam 1, Thu Jan 28,**
	27	**W**	Molecular binding and allostery	193	**5:00-6:50 pm**
	29	**F**	Myoglobin & Hemoglobin	176-186	
5	Feb 1	**M**	O_2 transport by hemoglobin: effectors of oxygen binding	186-197	
	2	**T**	Special topics &/or catch-up		
	3	**W**	Biochemical reactions		
	5	**F**	Enzyme catalysis	322-330	
6	8	**M**	Mechanisms of enzyme catalysis	330-339	
	9	**T**	Lysozyme & serine proteases	339-360	
	10	**W**	Special topics &/or catch-up		
	12	**F**	Enzyme Kinetics	363-376	
7	15	**M**	*President's Day Holiday*		
	16	**T**	Kinetics of enzyme inhibition	377-385	**Exam 2, Thu Feb 18,**
	17	**W**	Enzyme Regulation	386-393	**5:00-6:50 pm**
	19	**F**	Metabolism	448-459, 475-482	
8	22	**M**	Energy currencies	459-470	
	23	**T**	Glycolysis	485-496	**Glycolysis quiz**
	24	**W**	Glycolysis	497-504, 510-515	**in discussion this week**
	26	**F**	Fermentation	504-510	
9	Mar 1	**M**	Pyruvate DH Complex	566-576	
	2	**T**	Citric Acid Cycle	576-583	**Citric acid cycle quiz in**
	3	**W**	Citric Acid Cycle	583-594	**discussion this week**
	5	**F**	Special topics &/or catch-up		
10	8	**M**	Electron Transport	470-474, 596-618	
	9	**T**	ATP Synthase	618-637	
	10	**W**	Special topics &/or catch-up		
	12	**F**	Q&A		
Finals	**16**	**T**	**Final Exam: 8-11 am, Location TBA**		

***** You must take quizzes in the discussion section in which you are enrolled. **NO make-up quizzes or exams are given.**

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. Requests for regrades of quizzes or exams must be submitted *in writing* to Dr. Nelson within one week of the return of the graded quiz or exam. See the course website for further details and instructions. Please note that the whole quiz or exam may be regraded, so your score could be readjusted up or down.

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

Grading

Quizzes	= 60 points
2 midterms, 100 points each	= 200 points
Final exam	= 240 points
Total	= 500 points

Grading Scale
Grades are determined based on class 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 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, and review your notes regularly
- Seek help immediately if you don't understand a concept
- Come to office hours regularly
- Use the discussion board for questions and review
- Use podcasts to review lecture discussions
- Keep up with the course material… Don't procrastinate!

First assignment: On Learning
- Read the handout, "Learning (Your First Job)," and consider how you will apply Dr. Leamnson's suggestions in your study of biochemistry (and other subjects) this quarter.
- Take the online Learning Style Survey to see how you learn best, and get study suggestions based on your personal learning style: http://www.metamath.com/lsweb/dvclearn.htm
  (My scores were: Visual/Verbal: 36; Visual/Nonverbal: 36; Auditory: 22; Kinesthetic: 20)

Schedule of lectures, discussions, and office hours:

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00		1A , Geology 4645 – Huimin 2A, Boelter 4413 – Catherine	1D, MS 5225 – Huimin 2C, MS 5233 – Catherine	1F, MS 6201 – Khiem 2F, Boelter 4413 – Catherine	1I, MS 5217 – Reza 2H, LaKretz 120 – Alex
9:00	**Lecture 1: CS50**	**Lecture 1: CS50** 2B, Boelter 5440 – Domi	**Lecture 1: CS50** 2D, LaKretz 120 – Carly	1G, Boelter 5440 – Domi	**Lecture 1: CS50** ***OH** - Carly, 3077F*
10:00		***OH** - Domi, 3077F*		***OH** - Alex 3077F*	***OH** - Catherine, 3077F*
11:00	**Lecture 2: CS24**	**Lecture 2: CS24**	**Lecture 2: CS24**	***OH** – (Rotating) 3077F*	**Lecture 2: CS24** 1J , YH 2200 – Alex
12:00	***OH** (2 hrs),*	***OH** (1 hr), Dr. Nelson, 3077F*	***OH** (1 hr), Dr. N., 3077F*		1K, MS 6201 – Reza
1:00	*Dr. Nelson, 3077F*	1B, Geology 6704 – Domi	2E, Pub Aff 2250 – Carly	1H, MS 6201 – Khiem	1L, MS 5217 – Reza 2I, MS 5225 – Alex
2:00		1C, Pub Aff 2270 – Huimin	1E, Young 1044 – Carly	2G, Pub Aff 2270 – Khiem	
3:00				***OH** – Khiem, Boyer 436*	
4:00	***OH** - Reza, 3077F*	***OH** - Huimin, 3077F*			
5:00					