

Biomolecular Chemistry 503  
HUMAN BIOCHEMISTRY  
Spring 2010

**LECTURE SCHEDULE**

<u>LECTURE</u>	<u>DAY</u>	<u>DATE</u>	<u>LECTURER</u>	<u>TITLE</u>
1	W	1/20	Denu	Introduction to course. Macromolecules, functional groups, non-covalent bonds and water.
2	F	1/22	Denu	Chemistry of water, weak acids/bases, amino acids and side-chain modifications.
3	M	1/25	Denu	Peptide bonds and protein structure.
4	W	1/27	Denu	Protein folding, membranes, membrane proteins and transport. Problem set #1 due-15 points.
5	F	1/29	Denu	Protein functions continued. Hemoglobin/myoglobin.
6	M	2/01	Denu	Proteins as catalysts, enzyme cascades, zymogens. Blood clotting and digestive enzymes.
7	W	2/03	Denu	Enzyme properties and mechanisms. Problem set #2 due-15 points.
8	F	2/05	Denu	Reaction kinetics.
9	M	2/08	Denu	Enzyme inhibition.
10	W	2/10	Denu	Co-enzymes and enzyme regulation. Problem set #3 due-15 points.
11	F	2/12	Denu	Drug: enzyme interactions and high energy compounds.
12	M	2/15	Denu	Overview of energy metabolism.
13	W	2/17	Denu	Glycolysis. Problem set #4 due-15 points
14	F	2/19	Denu	Pyruvate Metabolism.
--	M	2/22	Denu	Review of Lectures 1-14.

<u>LECTURE</u>	<u>DAY</u>	<u>DATE</u>	<u>LECTURER</u>	<u>TITLE</u>
--	T	2/23	Denu	<b>EXAM 1 covering Lectures 1-14</b> (280 points) (5:00-7:00 PM - room TBA)
15	W	2/24	Hull	TCA cycle.
16	F	2/26	Hull	Electron transport and oxidative phosphorylation.
17	M	3/01	Hull	Glycogen metabolism.
18	W	3/03	Hull	Regulation of glucose oxidation. Problem set #5 due-15 points. <b>Quiz -15 points on lectures 15-17</b>
19	F	3/05	Hull	Overview of the "fasted state": Fat catabolism.
20	M	3/08	Hull	Fatty acid oxidation & ketone bodies.
21	W	3/10	Hull	Gluconeogenesis. Problem set #6 due-15 points.
22	F	3/12	Hull	Amino acid metabolism.
23	M	3/15	Hull	Amino acid metabolism (continued). Overview of the "fed state".
24	W	3/17	Hull	Fatty acid and triglyceride synthesis. Problem set #7 due-15 points.
25	F	3/19	Hull	Lipoprotein and cholesterol metabolism.
26	M	3/22	Hull	Integration and control of energy metabolism (fed/starved state).
27	W	3/24	Hull	Integration continued. Problem set #8 due-15 points.
28	F	3/26	Fox	Hormones, Signaling and Overview of Gene Expression.
		<b>3/27-4/04</b>		<b>SPRING BREAK</b>
--	M	4/05	Hull	Discussion of Lectures 15-27.
--	T	4/06	Hull	<b>EXAM 2 covering Lectures 15-27</b> (245 points) (5:00-7:00 PM - room TBA)

<u>LECTURE</u>	<u>DAY</u>	<u>DATE</u>	<u>LECTURER</u>	<u>TITLE</u>
29	W	4/07	Fox	Overview of Molecular Biology and Structure of Nucleic Acids.
30	F	4/09	Fox	DNA Replication, part I.
31	M	4/12	Fox	DNA Replication, part II and Introduction to Transcription.
32	W	4/14	Fox	Transcription and Regulation of Gene Expression. Problem Set #9 due-15 points
33	F	4/16	Fox	Transcription cont'd/ mRNA processing.
34	M	4/19	Fox	mRNA Processing cont'd/Introduction to Genetic Code and Translation.
35	W	4/21	Fox	Translation, cont. <b>Mini-exam-40 points</b> on Lectures #28-34
36	F	4/23	Fox	Protein Trafficking.
37	M	4/26	Fox	Post-transcriptional Regulation of Gene Expression.
38	W	4/28	Fox	Techniques of Molecular Biology, part I. Problem Set #10 due-15 points
39	F	4/30	Fox	Techniques of Molecular Biology, part II.
40	M	5/03	Fox	DNA Damage and DNA Repair.
41	W	5/05	Fox	Mutations and Molecular Mechanisms of Disease. Problem Set #11 due-15 points
--	F	5/07	Fox	Discussion of Lectures 28-41
--	W	5/12	Fox	<b>EXAM 3 covering Lectures 28-41</b> (255 points) (2:45-4:45pm - room TBA)