

**Biochemistry 507**  
**Fall 2014**

Lecture Number	Date	Lecturer	Topic
1	9/03/2014	Cox	Course introduction and D2L
2	9/05/2014	Cox	Evolution and Water POB: Ch. 1-2, especially pp. 31-39 and 47-69
3	9/08/2014	Cox	Amino acids and peptides: chemistry, stereochemistry, ionization, structure of the peptide bond, biological activities of peptides; chemical synthesis of peptides POB: Ch. 3, pp 75-89
4	9/10/2014	Cox	Protein Methods: purification, composition, quantification POB: Ch. 3, pp 89-96
5	9/12/2014	Cox	Protein structure; primary; amino acid sequence; sequence homology and its relevance to evolution POB: Ch. 3 (pp. 96-109)
6	9/15/2014	Cox	Protein structure; secondary and tertiary POB: Ch. 4 (pp. 115-125)
7	9/17/2014	Cox	Protein Structure; tertiary and quaternary POB: Ch. 4 (pp. 125-151)
8	9/19/2014	Cox	Protein function: ligand binding; allostery; regulation POB: Ch 5 (pp. 157-174)
9	9/22/2014	Cox	Enzymatic catalysis: principles that explain catalytic power and specificity; transitionstate complementarity POB: Ch. 6 (pp. 189-198)
10	9/24/2014	Cox	Enzymes: role of cofactors POB: Ch. 6 (pp. 199-200)
<b>Exam 1</b>	<b>9/26/2014</b>	<b>Cox</b>	<b>Exam 1 covers lectures 1-10</b>
11	9/29/2014	Cox	Enzyme kinetics 1: an approach to understanding mechanism POB: Ch. 6 (pp. 200-213)
12	10/01/2014	Cox	Enzyme kinetics 2: bisubstrate kinetics, inhibition, etc. POB: Ch. 6 (pp. 200-213)
13	10/03/2014	Cox	Enzyme mechanisms: selected illustrations of principles

			POB: Ch. 6 (pp. 214–226)
14	10/06/2014	Cox	Enzyme regulation: allosteric and covalent POB: Ch. 6 (pp. 226–236)
15	10/08/2014	Cox	Carbohydrates: review of structure, nomenclature, stereochemistry, glycosidic bond, disaccharides POB: Ch. 7 (pp. 243–253)
16	10/10/2014	Cox	Polysaccharides: structure, analysis, physical properties of glycogen, starch, chitin, peptidoglycan, hyaluronic acid, chondroitin sulfate; extracellular matrix POB: Ch. 7 (pp. 254–263)
17	10/13/2014	Cox	Informational carbohydrates POB: Ch. 7 (pp. 263–274)
18	10/15/2014	Cox	Nucleotides and nucleic acids: structure and physical properties POB: Ch. 8 (pp. 281–297)
19	10/17/2014	Cox	Nucleic acids: determination of sequence; chemical synthesis POB: Ch. 8 (pp. 297–306)
20	10/20/2014	Cox	Genomics and proteomics POB: Ch. 9 (pp. 313–351)
<b>Exam 2</b>	<b>10/22/2014</b>	<b>Cox</b>	<b>Exam 2 covers lectures 11–20</b>
21	10/24/2014	Hoskins	Lipids: Structure, Properties, & Function POB: Ch. 10 (pp. 357–380)
22	10/27/2014	Hoskins	Membranes and Transport 1 POB: Ch. 11 (pp. 385–427)
23	10/29/2014	Hoskins	Membranes and Transport 2 POB: Ch. 11 (pp. 385–427)
24	10/31/2014	Hoskins	Principles of Bioenergetics: free-energy changes in bioo-ology POB: Ch. 13 (pp. 501–511)
25	11/03/2014	Hoskins	Chemical Sense in Metabolism POB: Ch. 13 (pp. 511–517)
26	11/05/2014	Hoskins	ATP and Phosphoryl Group Transfers POB: Ch. 13 (pp. 517–527)
27	11/07/2014	Hoskins	Electron Transfers in Biology POB: Ch. 13 (pp. 528–537)
28	11/10/2014	Hoskins	Glycolysis and Gluconeogenesis 1 POB: Ch. 14 (pp. 543–580)
29	11/12/2014	Hoskins	Glycolysis and Gluconeogenesis 2 POB: Ch. 14 (pp. 543–580)
30	11/14/2014	Hoskins	Glycogen Metabolism and Regulation POB: Ch. 15 (pp. 587–627)

<b>Exam 3</b>	<b>11/17/2014</b>	<b>Hoskins</b>	<b>Exam 3 covers lectures 21-30</b>
31	11/19/2014	Hoskins	Citric Acid Cycle & TPP POB: Ch. 16 (pp. 633-659)
32	11/21/2014	Hoskins	Oxidation of Fatty Acids & B12 POB: Ch. 17 (pp. 667-688)
33	11/24/2014	Hoskins	Amino Acid Catabolism & PLP POB: Ch. 18 (pp. 695-710)
34	11/26/2014	Hoskins	Amino Acid Catabolism & Keto Acids POB: Ch. 18 (pp. 711-726)
	11/28/2014	No Class	Thanksgiving Break
35	12/01/2014	Hoskins	Mitochondrial Electron Transfer POB: Ch. 19 (pp. 731-747)
36	12/03/2014	Hoskins	ATP Synthesis and Coupled Electron Transfer POB: Ch. 19 (pp. 747-762)
37	12/05/2014	Hoskins	Other Functions of Mitochondria POB: Ch. 19 (pp. 762-769)
38	12/08/2014	Hoskins	Photophosphorylation in chloroplasts and bacteria POB: Ch. 19 (pp. 769-791)
39	12/10/2014	Hoskins	Summary: Energy Yielding Metabolism
40	12/12/2014	Hoskins	Semester Wrap Up & Current Topics in Metabolism
<b>Final</b>	<b>12/15/2014</b>		<b>FINAL EXAM</b>