

Course Symbol: BCH-201

Course Title: General Biochemistry-1

Credit hours: 3 (3+0)

Prerequisite: CHM 108

Date	Books & Authors	Title	Pages No:
Sat, 25 Sep 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Definitions and introduction: General Introduction to Biochemistry- Elements: Atoms (C, O, H, etc) & essential elements (Mg, Ca, etc), versus earth composition.	1 - 13
Mon, 27 Sep 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Biomolecules (H <sub>2</sub> O, amino acids, saccharides, nucleic acids, lipids, vitamins and heme)	
Wed, 29 Sep 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Assembly of molecules (Proteins, DNA, RNA, Carbohydrates, membranes)	
Sat, 2 Oct 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Biochemistry pathways: information (Molecular Biology) versus structural (Chemistry);	
Mon, 4 Oct 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Living versus nonliving matters Organelles, cells, and organisms	
Wed, 6 Oct 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Chemical Concepts important to biochemistry: Chemical bonds: covalent, ionic, hydrogen bond,	15 - 23
Sat, 9 Oct 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li><li>• Jeremy M. Berg</li><li>• Lubert Stryer</li></ul>	Hydrophobic interaction, VanDer Waals interactions.	
Mon, 11 Oct 2010	Biochemistry <ul style="list-style-type: none"><li>• John L. Tymoczko</li></ul>	Functional Groups, Chemical equilibrium, Free Energy.	

	<ul style="list-style-type: none"> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>		
Wed, 13 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Structure and properties of H <sub>2</sub> O: (Hydrogen bonding and solubility of molecules, surface tension, Expansion upon freezing, High boiling point)	17 - 18
Sat, 16 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Ionization of H <sub>2</sub> O: Weak acids and bases (pH and pK <sub>a</sub> & Hasselbalch-Henderson-Hasselbalch equation) Buffer systems	
Mon, 18 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Amino acids: Definitions and types of amino acids	32 - 39
Wed, 20 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Functions of amino acids Functional groups in amino acids	
Sat, 23 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Structure and Classification of standard amino acids	
Mon, 25 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Properties of amino acids: (Polarity, Stereoisomers, Light absorption, Ionization)	
Wed, 27 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Modification (hydroxylation, phosphorylation, methylation, disulfide bridge, etc.)	
Sat, 30 Oct 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	Proteins: Peptide bond (formation, structure, & properties)	42 - 106
Mon, 1 Nov 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M.Berg</li> <li>• Lubert Stryer</li> </ul>	And terminology: amino acids versus residue versus polypeptide & proteins	
Wed, 3 Nov 2010	Biochemistry	Protein structure (primary, secondary & tertiary and quaternary)	

	<ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>		
Sat, 6 Nov 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>	Protein folding (AA>secondary elements>motif>domain>subunits)	42 - 106
Mon, 8 Nov 2010	EXAM		
Wed, 10 Nov 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>	Protein Denaturation	42 - 106
Sat, 13 Nov 2010	Haji holiday		
Mon, 15 Nov 2010			
Wed, 17 Nov 2010			
Sat, 20 Nov 2010			
Mon, 22 Nov 2010			
Wed, 24 Nov 2010			
Sat, 27 Nov 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>	Structural classification of proteins: (Fibrous proteins and Globular proteins representatives of all-alpha, all-beta, and alpha/beta proteins)	42 - 106
Mon, 29 Nov 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>	Immunoglobulins, transport (O <sub>2</sub> , fatty acids), regulatory (hormones etc.), Structural, & movement, with examples. Complex proteins (metal ions, cofactors, lipids, carbohydrates, etc.	
Sat, 4 Dec 2010	Biochemistry <ul style="list-style-type: none"> <li>• John L. Tymoczko</li> <li>• Jeremy M. Berg</li> <li>• Lubert Stryer</li> </ul>	Introduction to enzymes and metabolism	
Mon, 6 Dec 2010		Spectroscopy and general methods in Biochemistry	
Wed, 8 Dec 2010	EXAM		