Department	Pharmacy

Course Name	Pharmaceutical Biochemistry	Course No.	201313
Prerequisite	Pharmaceutical organic chemistry	Credit Hours	3
Number & date of course plan approval	2010-2011	Brief Description	See form QF02/0409

Intended Learning Outcomes	1. Describe the molecular & functional organisation of a cell & list its subcellular & components. 2. Delineate structure, function & interrelationship of various biomolecules 3. Summarise the fundamental aspects of enzymology & clinical applications 4. Describe digestion & assimilation of nutrients & consequences of malnutrition. 5. Integrate the various aspects of metabolism & their regulatory pathways. 6. Explain biochemical basis of inherited disorders 7. Describe mechanisms involved in maintenance of body fluid & pH homeostasis. 8. Suggest experiments to support theoretical concepts & clinical diagnosis. 9. Understand different types of Bio-medical waste, their potential risks		
Course Topics	1- Chemical and Biologic Foundations 2- Fuel Oxidation and the Generation 3- Carbohydrate Metabolism 4- Lipid Metabolism 5- Nitrogen Metabolism 6- Protein metabolism 7- Tissue Metabolism		
Text Books	1- Marks' basic medical biochemistry :a clinical approach / Michael Lieberman,Allan Marks ; illustrations by Mathew Chansky.—3rd ed Copyright © 2009 2- Harper's Illustrated Biochemistry, 28e Robert K. Murray, David A Bender, Kathleen M. Botham, Peter J. Kennelly, Victor W. Rodwell, P. Anthony Weil Copyright © 2009 by The McGraw-Hill Companies, Inc.		
References	Lippincott's Illustrated Reviews: Biochemistry, 4th Edition Pamela C. Champe, Richard A. Harvey, Denise R. Ferrier		
Grade Determination	1st Exam = 25% 2nd Exam = 25% Final Exam = 50%	Practical Course Grade Determination	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%

Course Outline

Week	Hours	Subjects	Chapters in Textbook	Notes
1	3	Amino Acids in Proteins Structure–Function Relationships in Proteins	SECTION TWO	
2	3	Enzymes as Catalysts Regulation of Enzymes	SECTION TWO	
3	3	Tricarboxylic Acid Cycle Oxidative Phosphorylation	SECTION FOUR	
4	3	Oxidation of Fatty Acids and Ketone Bodies Oxygen Toxicity and Free-Radicals	SECTION FOUR	
5	3	Basic Concepts in the Regulation of Fuel Metabolism by Insulin,Glucagon,and Other Hormones Digestion,Absorption,and Transport of Carbohydrates	SECTION FIVE	
6	3	Formation and Degradation of Glycogen Pathways of Sugar Metabolism	SECTION FIVE	
7	3	Synthesis of Glycosides,Lactose,Glycoproteins,and Glycolipids Gluconeogenesis and Maintenance of Blood Glucose Levels	SECTION FIVE	
8	3	Digestion and Transport of Dietary Lipids Synthesis of Fatty Acids,Triacylglycerols,and the Major Membrane Lipids	SECTION SIX	
9	3	Cholesterol Absorption,Synthesis,Metabolism,and Fate	SECTION SIX	
10	3	Integration of Carbohydrate and Lipid Metabolism Generation of ATP from Glucose:Glycosis	SECTION SIX	
11	3	Metabolism of the Eicosanoids Protein Digestion and Amino Acid Absorption	SECTION SIX	
12	3	Protein Digestion and Amino Acid Absorption Fate of Amino Acid Nitrogen:Urea Cycle	SECTION SEVEN	
13	3	Synthesis and Degradation of Amino Acids Purine and Pyrimidine Metabolism	SECTION SEVEN	
14	3	Actions of Hormones That Regulate Fuel Metabolism Biochemistry of Erythrocytes and Other Blood Cells	SECTION EIGHT	
15	3	Blood Plasma Proteins,Coagulation,and Fibrinolysis Liver Metabolism	SECTION EIGHT	

Week	Hours	Subjects	Chapters in Textbook	Notes
16	3	Pentose Phosphate Pathway,Fructose,and Galactose Metabolism	SECTION FIVE	

Approved by Dept. Chair		Date of Approval	

Extra Information: (Updated every semester and filled by course instructor)

Course Instructor	Dr. Lama Hamadneh
Office No.	217
Extension **Email**	306 lama@zuj.edu.jo
Office hours	Sun. & Tue. 9-10 &1-2 Mon. & Wed. 12.30-1 Thu. 9-10