Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy	QF02/0408-2.1E

Department	Pharmacy

Course Name	Pharmaceutical Biochemistry	Course No.	201313
Prerequisite	Pharmaceutical organic chemistry	Credit Hours	3
Number & date of course plan approval	2015-2016	Brief Description	See form QF02/0409

Course Objective	To understand the structure, metabolism and function of the three major dietary components; protein, carbohydrate and fat, including the chemical reactions involved in their metabolic pathways, in addition to understanding enzymes and how they catalyze biological reactions.
Intended Learning Outcomes	1. Describe the molecular & functional organization of a cell & list its subcellular & components. 2. Delineate structure, function & interrelationship of various biomolecules 3. Summarize the fundamental aspects of enzymology & clinical applications Describe digestion & assimilation of nutrients & consequences of malnutrition. 4. Integrate the various aspects of metabolism & their regulatory pathways. 5. Explain biochemical basis of inherited disorders 6. Describe mechanisms involved in maintenance of body fluid & pH homeostasis. 7. Suggest experiments to support theoretical concepts & clinical diagnosis. 8. 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	1	Amino Acids	1	
1	2	Structure of Protein	2	
2	1 1 1	Enzymes as Catalysts Regulation of Enzymes	5	
3	1 1 1	Electron-Transport chain Oxidative Phosphorylation	6	
4	1	Introduction to Carbohydrates Digestion, Absorption, and Transport of Carbohydrates	7	
5	1 1 1	Generation of ATP from Glucose: Glycolysis	8	
6	1 1 1	Tricarboxylic Acid Cycle	9	
7	1 1 1	Gluconeogenesis and Maintenance of Blood Glucose Levels	10	
8	1 1 1	Pentose Phosphate Pathway Biochemistry of Erythrocytes	13	
9	1 1 1	Digestion, Absorption and Transport of Dietary Lipids	15	
10	1 1 1	Synthesis of Fatty Acids, Triacylglycerols, and the Major Membrane Lipids	16	
Week	**Hours**	Fatty Acid and Triacylglycerol Metabolism	**Chapters in Textbook**	**Notes**
11	1 1	Cholesterol, Metabolism and Fate	18	

	1			
12	1 1 1	Amino Acids: Disposal of Nitrogen	19	
13	1 1 1	Amino Acid Degradation and Synthesis	20	
14	1 1 1	Hormonal Regulation of Metabolism	3+5+8+9	

Approved by Dept. Chair		Date of Approval	

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

Course Instructor	Dr. Negia Mohamed + Dr. Amani Alhadid
Office No.	414
Extension **Email**	Negia.Mohamed@zuj.edu.jo amani.alhadid@zuj.edu.jo
Office hours	