



كلية الصيدلة جامعة الزيتونة الأردنية  
Faculty of Pharmacy  
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "  
Toward Excellence in Pharmaceutical  
Education

جامعة الزيتونة الأردنية  
Al-Zaytoonah University of Jordan  
كلية الصيدلة  
Faculty of Pharmacy



"Tradition and Quality"

Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-3.0E
---	----------------

Faculty	Pharmacy	Department	Pharmacy
Course number	201313	Course title	Pharmaceutical Biochemistry
Number of credit hours	3	Pre-requisite/co- requisite	Pharmaceutical organic chemistry

### Brief course description

This course explain the structures, functions and metabolism of the three major biomolecules; proteins, carbohydrates and fats, including the chemical reactions involved in their metabolic pathways and their regulation, in addition to understanding enzymes and how they catalyze biological reactions.

Course goals and learning outcomes	
<b>Goal 1</b>	<b>Understanding the major biomolecules</b>
Learning outcomes	<b>Successful completion of the this course should enable the student to</b> 1.1 Demonstrate the structure and functions of proteins, carbohydrates and lipids 1.2 Classify the enzymes and explain the specificity of enzymes and the chemistry involved in enzyme action. 1.3 Explain the inhibition of enzyme activity
<b>Goal 2</b>	<b>Understanding Fuel Oxidation and the ATP Generation</b>
Learning outcomes	<b>Successful completion of the this course should enable the student to</b> 3.1 Understand the organization of Electron-Transport chain (ETC) 3.2 Explain all reactions of ETC 3.3 Explain how the free energy generated by the transport of electrons by ETC is used to produce ATP (Oxidative Phosphorylation)
<b>Goal 3</b>	<b>Understanding carbohydrates, lipids and proteins metabolism</b>
Learning outcomes	<b>Successful completion of the this course should enable the student to</b> 4.1 Explain the digestion, absorption, and transport of dietary carbohydrates, lipids and proteins 4.2 Explain all metabolic pathways of carbohydrates, lipids and proteins 4.3 Calculate the ATP produced in all catabolic pathways
<b>Textbook</b>	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.
<b>Supplementary references</b>	Lippincott's Illustrated Reviews: Biochemistry, 5th Edition Pamela C. Champe, Richard A. Harvey, Denise R. Ferrier



كلية الصيدلة جامعة الزيتونة الأردنية  
Faculty of Pharmacy  
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "  
Toward Excellence in Pharmaceutical  
Education

جامعة الزيتونة الأردنية  
Al-Zaytoonah University of Jordan  
كلية الصيدلة  
Faculty of Pharmacy



"Tradition and Quality"

<b>Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department</b>	<b>QF02/0408-3.0E</b>
---	-----------------------

<b>Course timeline</b>				
<b>Week</b>	<b>Number of hours</b>	<b>Course topics</b>	<b>Pages chapter number (textbook)</b>	<b>Notes</b>
1	1 1 1	Amino Acids Structure of Proteins	1 2	
2	1 1 1	Enzymes as Catalysts Regulation of Enzymes	5	
3	1 1 1	Electron-Transport chain Oxidative Phosphorylation	6	
4	1 1 1	Introduction to Carbohydrates Digestion, Absorption, and Transport of Carbohydrates Introduction in metabolism	7	
5	1 1 1	Regulation of metabolism 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, Triacylglycerol, and the Major Membrane Lipids	16	
11	1 1 1	Ketone body metabolism Cholesterol, Metabolism	16 18	
11	1 1 1	Cholesterol, Metabolism Regulation Bile acids and salts synthesis	18	
12	1	Amino Acids: Disposal of Nitrogen	19	



كلية الصيدلة جامعة الزيتونة الأردنية  
Faculty of Pharmacy  
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "  
Toward Excellence in Pharmaceutical  
Education

جامعة الزيتونة الأردنية  
Al-Zaytoonah University of Jordan  
كلية الصيدلة  
Faculty of Pharmacy



" Tradition and Quality "

<b>Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department</b>	<b>QF02/0408-3.0E</b>
---	-----------------------

	1			
	1			
13	1	Amino Acid Degradation and Synthesis	20	
	1			
	1			
14	1	Metabolic defects in amino acid metabolism	20	
	1			
	1			

<b>Theoretical course evaluation methods and weight</b>	First exam 25% Second exam 25% Final exam 50%	<b>Practical (clinical) course evaluation methods</b>	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
---	---	---	---

<b>Approved by head of department</b>		<b>Date of approval</b>	
---	--	-------------------------	--

Extra information (to be updated every semester by corresponding faculty member)

<b>Name of teacher</b>	Dr. Negia Mohamed + Dr. Amani Alhadid	<b>Office Number</b>	<b>414</b>
<b>Phone number (extension)</b>	293	<b>Email</b>	<a href="mailto:Negia.Mohamed@zuj.edu.jo">Negia.Mohamed@zuj.edu.jo</a> <a href="mailto:amani.alhadid@zuj.edu.jo">amani.alhadid@zuj.edu.jo</a>
<b>Office hours</b>			