



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	0201413	Course title	Clinical Biochemistry
Number of credit hours	2	Pre-requisite/co-requisite	Pharmaceutical Biochemistry

#### Brief course description:

This course explain all biochemical tests which are used in clinical biochemistry lab and the interpretation of the test results related to the biochemical consequences of the common disorders on different body organs and functions and give knowledge about the role of clinical biochemistry in the investigations carried out for diagnosis, screening, monitoring, and management; in health and / or disease.

Course goals and learning outcomes	
<b>Goal 1</b>	<b>Understanding all clinical biochemistry repertoire and body fluids regulation</b>
Learning outcomes	<p><b>Successful completion of the this course should enable the student to</b></p> <p>1.1 Define the clinical biochemistry, its classification and its role in clinical medicine</p> <p>1.2 Explain the importance clinical biochemistry course study for pharmacist.</p> <p>1.3 Understand the normal water and electrolytes balance in human body and the effect of diseases on this balance</p>
<b>Goal 2</b>	<b>Understanding all biochemical tests which are used for investigation of all body organs functions and also tumor growth consequences</b>
Learning outcomes	<p><b>Successful completion of the this course should enable the student to</b></p> <p>2.1 Explain RFTs (renal function tests), LFTs (liver function tests) cardiac, skeletal muscle and bone biomarkers tests.</p> <p>2.2 Explain biochemical and local effects of tumor growth and consequences of cancer or cancer treatment</p> <p>2.3. Explain all body hormones and their functions in relation to interpretation biochemical results and pathological conditions</p>
<b>Goal 3</b>	<b>Understanding the assessment of acid-base status</b>
Learning outcomes	<p><b>Successful completion of the this course should enable the student to</b></p> <p>3.1 Be able to understand all acid-base concepts and vocabulary.</p> <p>3.2 Explain all acid–base disorders, their causes and their clinical effects.</p> <p>3.3 Interpret blood gas results for related clinical cases for diagnosis and management of acid–base disorders,</p>
<b>Goal 4</b>	<b>Understanding the investigation of carbohydrates and lipids metabolism disorders</b>
Learning outcomes	<p><b>Successful completion of the this course should enable the student</b></p> <p>4.1.Understand diagnosis and monitoring of diabetes mellitus, and its complication</p> <p>4.2.Understand diagnosis and monitoring of hypoglycemia</p> <p>4.3 Understand all the genetic causes of dyslipidemia and biochemical tests which are used for diagnosis of these clinical cases</p>



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>Textbook</b>	1.-Marks' Basic Medical Biochemistry (Lieberman, Marks's Basic Medical Biochemistry) by Alisa Peet MD, Michael A. Lieberman PhD and Allan Marks MD (Mar 29, 2012) 2.-Harper's Illustrated Biochemistry, 29e Robert K. Murray, David A Bender, Kathleen M. Botham, Peter J. Kennelly, Victor W. Rodwell, P. Anthony Weil Copyright © 2012 by The McGraw-Hill Companies, Inc
<b>Supplementary references</b>	1.- Clinical Biochemistry: An Illustrated Colour Text, 5e by Allan Gaw MD PhD FRCPATH FFPM PGCertMedEd, Michael J. Murphy FRCP Edin FRCPATH, Rajeev Srivastava and Robert A. Cowan BSc PhD (Jul 16, 2013)

Course timeline				
Week	Number of hours	Course topics	Pages (chapters) (textbook)	Notes
1	1 1	The clinical biochemistry laboratory The use of the laboratory The interpretation of results Reference intervals Fluid and electrolyte balance Water and sodium balance	Chapter 1: Section 1,2,3,4 Chapter:2 Section: 5,6,7	Chapter 1: Introducing clinical biochemistry Chapter:2 core biochemistry
2	1 1	Hyponatraemia: pathophysiology Hyponatraemia: assessment and management Hypernatraemia	Chapter2: Section 8,9,10	
3	1 1	Hyperkalaemia Hypokalaemia Investigation of renal function	Chapter2: Section:11, 12,14,15	
4	1 1	Urinalysis Acid-base: concepts and vocabulary Acid-base disorders: diagnosis and management	Chapter2: Section: 16,17,18,19, 20,21,22,24	
5	1 1	Proteins and enzymes Immunoglobulins Myocardial infarction	Chapter2: Section: 25,26,27	
6	1 1	Liver function tests Jaundice Liver disease	Chapter:2 Section: 28,29,30	
7	1 1	Glucose metabolism and diabetes mellitus Diagnosis and monitoring of diabetes mellitus	Chapter2: Section: 31,32	



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
8	1 1	Diabeticketoacidosis Hypoglycaemia	Chapter2: Section: 33,34	
9	1 1	Calcium regulation and hypocalcaemia Hypercalcaemia	Chapter2: Section: 35,36	
10	1 1	Phosphate and magnesium Bone disease	Chapter2: Section: 37,38,39	
11	1 1	Endocrine control Dynamic function tests	Chapter3: 40,41	Chapter3: endocrinology
12	1 1	Pituitary function Growth disorders and acromegaly	Chapter:3 Section: 42,43	
13	1 1	Thyroid pathophysiology Hypothyroidism Hyperthyroidism	Chapter:3 Section: 44,45,46	
14	1 1	Adrenocortical pathophysiology Hypofunction of theadrenal cortex Hyperfunction of theadrenal cortex Gonadal function	Chapter:3 Section: 47,48,49,50	
15	1 1	Lipoprotein metabolism Clinical disorders of lipid metabolism Hypertension	Chapter:4 Section: 66,67,68	Chapter:4 Specialized investigations
16	1 1	Cancer and its consequences Hyperuricaemia Skeletal muscle disorders	Chapter:4 Section: 69,72,73	

<b>Theoretical course evaluation methods and weight</b>	First exam 25% Second exam 25% Final exam 50%	<b>Practical (clinical) course evaluation methods</b>	There is no practical course for this subject
---	---	---	---

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



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>
---	-----------------------

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

<b>Name of teacher</b>	Negia.Mohamed	<b>Office Number</b>	414
<b>Phone number (extension)</b>	293	<b>Email</b>	<a href="mailto:Negia.Mohamed@zug.edu.jo">Negia.Mohamed@zug.edu.jo</a>
<b>Office hours</b>			