



Department	Pharmacy
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Course Name	Clinical Biochemistry	Course No.	0201413
Prerequisite	Pharmaceutical Biochemistry	Credit Hours	2
Number & date of course plan approval	Updated on 11-12-2016	Brief Description	See form QF02/0409

(Course Objectives)	<p>(1) Special branch of medicine dealing with measurement and interpretation of the physicochemical condition and dynamics in healthy and diseased humans.</p> <p>(2) Branch of chemistry that deals with the composition and measurement of the secretions, excretions, and fluids of the human body in health and disease, and the chemical composition of cells and tissues.</p> <p>(3) Study of metabolic processes in relation to their physiological and pathological changes</p> <p>(4) Analysis of body fluids, cells and sometimes tissues, together with interpretation of the results of analysis, as well as the knowledge and skills necessary for management of a clinico-chemical laboratory.</p>		
Course Topics	<ol style="list-style-type: none"> Biochemical investigations in clinical medicine Water, sodium and potassium Hydrogen ion homeostasis and blood gases The kidneys The liver The gastrointestinal tract The hypothalamus and the pituitary gland The adrenal glands The thyroid gland The gonads Disorders of carbohydrate metabolism Calcium, phosphate and magnesium Plasma proteins and enzymes Lipids, lipoproteins and cardiovascular disease 		
Text Books	<p>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)</p> <p>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</p>		
References	<p>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)</p>		
Grade Determination	<p>1st Exam=25%</p> <p>2nd Exam=25%</p> <p>Final Exam= 50%</p>	(Practical Course Grade Determination)	There is no practical course for this course



Course Outline				
Week	Hours	Subjects	Chapters in Textbook	Notes
1	\	The clinical biochemistry laboratory	Chapter 1:	Chapter 1:
	\	The use of the laboratory	Section 1,2,3,4	Introducing clinical biochemistry
	\	The interpretation of results	Chapter:2	Chapter:2
	\	Reference intervals	Section: 5,6,7	core biochemistry
	\	Fluid and electrolyte balance		
	\	Water and sodium balance		
2	\	Hyponatraemia: pathophysiology	Chapter2:	
	\	Hyponatraemia: assessment and management	Section 8,9,10	
	\	Hypernatraemia		
3	\	Hyperkalaemia	Chapter2:	
	\	Hypokalaemia	Section:11, 12,14,15	
	\	Investigation of renal function		
4	\	Urinalysis	Chapter2:	
	\	Acid-base: concepts and vocabulary	Section: 16,17,18,19, 20,21,22,24	
	\	Acid-base disorders: diagnosis and management		
5	\	Proteins and enzymes	Chapter2:	
	\	Immunoglobulins	Section: 25,26,27	
	\	Myocardial infarction		
6	\	Liver function tests	Chapter:2	
	\	Jaundice	Section: 28,29,30	
	\	Liver disease		
7	\	Glucose metabolism and diabetes mellitus	Chapter2:	
	\	Diagnosis and monitoring of diabetes mellitus	Section: 31,32	
8	\	Diabetic ketoacidosis	Chapter2:	
	\	Hypoglycaemia	Section: 33,34	
9	\	Calcium regulation and hypocalcaemia	Chapter2:	
	\	Hypercalcaemia	Section: 35,36	
10	\	Phosphate and magnesium	Chapter2:	
	\	Bone disease	Section: 37,38,39	
	\	Osteoporosis		
11	\	Endocrine control	Chapter3:	Chapter3:
	\	Dynamic function tests	40,41	endocrinology



12	\	Pituitary function Growth disorders and acromegaly	Chapter:3 Section: 42,43	
13	\	Thyroid pathophysiology Hypothyroidism Hyperthyroidism	Chapter:3 Section: 44,45,46	
14	\	Adrenocortical pathophysiology Hypofunction of the adrenal cortex Hyperfunction of the adrenal cortex Gonadal function	Chapter:3 Section: 47,48,49,50	
15	\	Lipoprotein metabolism Clinical disorders of lipid metabolism Hypertension	Chapter:4 Section: 66,67,68	Chapter:4 Specialized investigations
16	\	Cancer and its consequences Hyperuricaemia Skeletal muscle disorders	Chapter:4 Section: 69,72,73	

Approved by Dept. Chair		Date of Approval	
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Extra Information: (Updated every semester and filled by course instructor)

Course Instructor	Dr. Negia A. Mohamed
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Office hours	