



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)	(1) Special branch of medicine dealing with measurement and interpretation of the physicochemical condition and dynamics in healthy and diseased humans. (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. (3) Study of metabolic processes in relation to their physiological and pathological changes (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.		
Course Topics	1. Biochemical investigations in clinical medicine 2. Water, sodium and potassium 3. Hydrogen ion homoeostasis and blood gases 4. The kidneys 5. The liver 6. The gastrointestinal tract 7. The hypothalamus and the pituitary gland 8. The adrenal glands 9. The thyroid gland 10. The gonads 11. Disorders of carbohydrate metabolism 12. Calcium, phosphate and magnesium 13. Plasma proteins and enzymes 14. Lipids, lipoproteins and cardiovascular disease		
Text Books	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		
References	Clinical Biochemistry: An Illustrated Colour Text, 5e by Allan Gaw MD PhD FRCPath FFPM PG CertMedEd, Michael J. Murphy FRCP Edin FRCPath, Rajeev Srivastava and Robert A. Cowan BSc PhD (Jul 16, 2013)		
Grade Determination	1 st Exam=25% 2 nd Exam=25% Final Exam= 50%	(Practical Course Grade Determination)	There is no practical course for this course

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

Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

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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	