



Department	Pharmacy
------------	----------

<b>Course Name</b>	Pharmaceutical Biochemistry Laboratory	<b>Course No.</b>	<b>0201314</b>
Prerequisite	Pharmaceutical organic chemistry laboratory (201212)	Credit Hours	1
Number & date of course plan approval	2016/2017	Brief Description	See form QF02/0409

<b>Course Objective</b>	To introduce the students to basic experimental assays aimed to: <ol style="list-style-type: none"> <li>1. Test for the major biomolecules; carbohydrates, proteins and lipids using colorimetric assays.</li> <li>2. Study the properties of enzymes and factors affecting their activity.</li> </ol>
<b>Intended Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Studying the FUEL macromolecules present in all living cells.</li> <li>2. Understanding some of the chemical and physical properties of these biomolecules ( Proteins, Carbohydrates , and Lipids)</li> </ol>
<b>Course Topics</b>	<ol style="list-style-type: none"> <li>1-General reactions of proteins and amino acids.</li> <li>2- Enzyme activity and factors affecting enzyme activity.</li> <li>3- General reactions of carbohydrates.</li> <li>4- General reactions of lipids.</li> </ol>
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1- Marks' basic medical biochemistry :a clinical approach / Michael Lieberman,Allan Marks ; illustrations by Mathew Chansky.—3rd ed Copyright © 2009.</li> <li>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.</li> </ol>
<b>References</b>	Laboratory Manual For Pharmaceutical Biochemistry
<b>Grade Determination</b>	<p>Course Work = 50% (Reports, Term Papers, Quizzes)</p> <p>Final Exam= 50% (Practical: 15%, Written: 35%).</p>

### Course Outline

Week	Hours	Subjects		
1	3	<b>Colour reactions of proteins and amino acids:</b> <ol style="list-style-type: none"> <li>1-Biuret Test</li> <li>2- Ninhydrin Test</li> <li>3- Millons Test</li> <li>4-Unoxidized Sulfur Test</li> </ol>		
2	3	<b>Precipitation of proteins by the use of:</b> <ol style="list-style-type: none"> <li>1-Salts of Heavy Metals</li> <li>2- pH</li> <li>3-Ionic Strength</li> </ol>		



		4- Alcoholic Solvent 5- Organic Acids( Alkaloid reagents )		
3	3	<b>Catalase enzyme:</b> a- Catalytic Reaction b- Peroxidatic Reaction		
4	3	<b>Effect of temperature, pH , and substrate concentration on enzyme activity</b>		
5	3	<b>Effect of strong acid with heating on carbohydrates:</b> 1- Molish Test      2- Anthrone Test 3-Bial Test          4-Seliwanoff Test		
6	3	<b>Effect of alkali on carbohydrates:</b> 1-Benedict Test      2-Fehling Test 3- Barfoed Test      4-Iodine Test		
7	3	<b>Hydrolysis of carbohydrate:</b> 1- Hydrolysis of Sucrose 2- Hydrolysis of Starch Fermentation of Carbohydrates		
8	3	<b>Lipids:</b> 1- Solubility of Fat and Oil (Dielectric Constant) 2-Saponification 3-Properties of Soaps: a- Salting out of Soup b- Formation of Fatty Acids c- Formation of Insoluble Soaps 4-Iodine Test		

Approved by Dept. Chair		Date of Approval	
-------------------------	--	------------------	--

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

<b>Course Instructor</b>	Prof. Tariq Qirim Dr. Negia Mohamed Dr. Amani Alhadid
<b>Office No.</b>	
<b>Extension</b>	
<b>Email</b>	
<b>Office hours</b>	