

**Ministry of Higher Education and Scientific Research  
Scientific Supervision and Scientific Evaluation Apparatus  
Directorate of Quality Assurance and Academic Accreditation  
Accreditation Department**



# **Academic Program and Course Description Guide**



## Course Description Form

1. Course Name:	
<b>Biochemistry</b>	
2. Course Code:	
CHM 102	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
٢٠٢٤ / ٠٣ / ٤	
5. Available Attendance Forms:	
Attendance only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours THEORY and 2 hours LAB in week / 4 UNITS	
7. Course administrator's name (mention all, if more than one name)	
Name: Mosa Jaafar Mosa Email: <a href="mailto:mosajaafar89@gmail.com">mosajaafar89@gmail.com</a>	
8. Course Objectives	
<p>After successfully completion of the course the students will be able to :</p> <p>Define nutrients, properties, and classification.</p> <p>Illustrate biochemical changes of nutrients and its metabolic pathway in human body.</p> <p>Realize some important body constituents and their chemical changes in the laboratory.</p> <p>Differentiate the biochemical functions of different human organs in normal and abnormal conditions</p> <p>Understand the human biochemical reactions in normal situation and in case of diseases.</p> <p>Use laboratory methods for monitoring biochemical reactions in biological samples.</p> <p>Handle the laboratory equipment properly.</p>	<ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> <li>• .....</li> </ul>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ol style="list-style-type: none"> <li>1. Brainstorming education strategy.</li> <li>2. Education Strategy Lecture Series</li> <li>3. Education strategy field visits</li> </ol>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1		Chemistry of Carbohydrates	biochemist	Theoretical and lectures using educational methods classrooms as well practical application education	1. Daily, monthly and quarterly theoretical exams. 2. Daily practical evaluation of students' performance. 3. Practical exam in the hospital. 4. Evaluation of seminars presented by students. 5. Homework and weekly reports.
2		, Definition, Classification and Chemical properties Metabolism			
3		Carbohydrates.			
4		Glycogenesis, Glycogenolysis and Glycolysis.			
5		Krebs Cycle, Metabolic disorder of carbohydrate metabolism and Diabetes mellitus.			
6		Chemistry of Lipids			
7		, Definition, Classification and Chemical properties			
8		Cholesterol, Bile acids, and bile salts.			
9		Lipids Metabolism, Fatty acid oxidation, ATP production, Digestion and absorption of lipids			
10		Metabolic disorder of lipid metabolism, Ketogenesis and Fatty liver			
11		Chemistry of amino acids and proteins, Classification and Some properties of proteins.			
12		Protein metabolism, Disorder of protein metabolism and biochemical proteins Non protein compounds			
13		Ammonia and Uric acid synthesis Renal function, Blood urea formation cycle and			

14		Creatinine Chemistry of Enzymes, Definition, Inhibition and Coenzyme.			
15		Activity of Enzyme Classification and properties of enzymes. Plasma Enzymes, Amylase and Lactate dehydrogenase. Liver enzymes General examination of urine.			

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Jacob Anthikad, Nutrition and Biochemistry for Nurses, 1 <sup>st</sup> Ed., 2009.
Main references (sources)	Jeshwar, Medical Biochemistry for Nurses, 2 <sup>nd</sup> Ed., 2008
Recommended books and references (scientific journals, reports...)	MN chatterjea and Rana Shinde, textbook of medical biochemistry, 4 <sup>th</sup> Ed. 2000
Electronic References, Websites	Pamela C.Champe, Richard A.Harvey. Biochemistry (Lippencott's illustrated reviews ) 4th ED. 2008.