



Course Syllabus of Biochemistry 1

Faculty: Medicine and Health Sciences
Department: Health Sciences
Program: Bachelor in Medical Laboratory

I. General information about the course instructor :							
Name	Dr. Abdulhabib Alqubaty	Office Hours(3 Hours Weekly)					
Location & phone number	4114	Sat	Sun	Mon	Tue	Wed	Thu
Email	alqubaty71@gmail.com	2	-	1	1	-	1

II. General information about the course :						
1.	Course Title:	Biochemistry 1				
2.	Course Code and Number :	BML235				
3.	Credit Hours :	Lecture	Seminar/Tutorial	Practical	Training	Total
		2	-	1	-	3
4.	Study Level and Semester:	2 nd year /1 st semester				
5.	Pre-requisites:	BHS110				
6.	Co-requisites:	None				
7.	Program in which the course is offered	Bachelor in Medical Laboratory				
8.	Teaching Language:	English				
9.	Instruction location:	University of Science and Technology, Sana'a ,Yemen				

III. Course Description	
<p>This course provides students with basic knowledge about structure and properties of main biomolecules in human body, such as amino acids, proteins, carbohydrates, lipids, and nucleic acids. The course emphasizes the relationship between protein structure and its biological function. In addition, it discusses the role of phospholipids in determining the properties of biological membranes and their function. The course is based on lectures as well as seminars and interactive class discussions, lab experiments and group works, , collaborative learning, field. The students will be evaluated through written exam, practical exam, Lab report, Quizzes and problems General and organic chemistry course is a prerequisite course.</p>	

الموصف :
د. عبد الحبيب القباطي

المراجع :
د. حمود الحبابي

رئيس القسم:
د. عبد الحبيب القباطي

عميد الكلية:
د. عبد الله المخلافي

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IV. Course Aims: This course is aimed to:

1. Enable the student to be oriented with the biochemical importance of biomolecules.
2. Enable the students to be understand structure and classification of carbohydrates, Lipids, proteins, enzymes, vitamins, nucleotides and nucleic acids.
3. Enable the student to be identify carbohydrates, Lipids, enzymes, proteins, nucleotides and nucleic acids.
4. Familiarize the students with basic principles of molecular biology and protein synthesis.
5. Make the student oriented with the physio-chemical basis of the biological systems, and related clinical problems.

V. Course Intended Learning Outcomes (CILOs) :

1. Define carbohydrates, lipids, proteins, enzymes, vitamins and nucleic acids.
2. Describe the structure, importance and properties of carbohydrates, lipids, proteins, lipids, enzymes, vitamins and nucleic acid.
3. Interpret the observations of chemical tests to identify unknown sugar, lipids or protein solutions.
4. Report experiment result.
5. Perform some basic chemical testes to identify different sugars, lipids and proteins.
6. Use the instuments and devices in biochemistry lab.
7. Apply safety measures in biochemistry Lab.
8. Work effectively in a group in a lab or during preparation of seminars.

VI. Course Contents

Theoretical Aspect:

No.	Course Units	Sub-topics	Week due	Contact Hours
1.	Introduction	Biomolecules	1 st	2
2.	Amino acids	General structure, functions, classification of amino acids (chemical, nutritional, Metabolic), derived amino acids and Properties of Amino Acids	2 nd	2
3.	Proteins	Peptide formation, Biologically Active Peptides, protein classification according to (function, shape, and chemical	3 rd , 4 th	4

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		classification), protein denaturation		
4.	Enzymes	Definition and distribution of enzymes, enzyme names, active sites, Cofactors, Zymogens, Lysozymes, factors affecting reaction velocity, inhibition of enzyme activity, regulation of enzyme activity, enzymes and isoenzymes in clinical diagnosis	5 th , 6 th	4
5.	Nucleic acids	Function, nucleotide structure, Structure of DNA, Structure and types of RNA	7 th	2
6.	Midterm exam		8 th	2
7.	Carbohydrates	Definition, importance, Classification, derivatives of monosaccharides, disaccharides, polysaccharides	9 th , 10 th , 11 th	6
8.	Lipids	Definition, functions, classification, fatty acids, steroids	12 th , 13 th , 14 th	6
9.	Vitamins	Definition, functions, classification, clinical indications	15 th	2
10.	Final Exam		16 th	2
Total number of weeks and hours			16	32

Second: Practical/Tutorial/Clinical Aspects			
No.	Practical/Tutorial/Clinical topics	Week due	Contact Hours
1	Lab safety	2 nd	2
2	Identification of amino acids	3 rd	2
3	Proteins identification	4 th	2
4	Lipids identification	5 th	2
5	Enzymes kinetics	6 th	2
6	Monosaccharides identification	7 th	2
7	Disaccharides identification	8 th	2
8	Polysaccharides identification	9 th	2
9	General scheme	10 th	2
10	Final Practical Exam	11 th	2
Total number of weeks and hours		10	20

9

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