



A- COURSE TITLE, CODE, ACADEMIC YEAR:

INTRODUCTION TO BIOCHEMISTRY (MLT 211) 1438-1439 H

B- COURSE INFORMATION:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT 211	Introduction to Biochemistry	2	2	-	3 rd	--
Course Coordinator		Extension		Email Address		
Dr. Saber Mohamed Eweda				seweda@taibahu.edu.sa		

C- COURSE DESCRIPTION:

This course aims to provide the students with main knowledge about the structure and functions of biomolecules (carbohydrates, lipids, proteins, and nucleic acids). Also, the course aims to make the students more familiar with the structures of these biomolecules and provide them with a board and balanced foundation of biochemical knowledge. This is done through studying the classification of these biomolecules and comparing between different types of them. Also, the relation between the structure of these biomolecules and their function will be studied.

Course duration: 1 semester of academic year (15 weeks). Total teaching hours: 15 hours (Lectures 15).

D- COURSE OBJECTIVES:

1. Recognize and identify the structure and function of carbohydrates, lipids, protein and nucleic acids.
2. Relate the structure of these biomolecules with their functions.
3. Recall the scientific approach in carbohydrates, lipids, proteins and nucleic acids.
4. Compare between different types of these biomolecules.
5. Illustrate the effect of deficiency of some of these biomolecules on the occurrence of diseases.



E- THEORY TOPICS:		
Week	Theory Topic	Contact Hours
1	Introduction to biomolecules, nomenclature and classification of carbohydrates.	1
2	Structure and classification of monosaccharides.	1
3	Types, classes, and importance of monosaccharide derivatives.	1
4	Types, structure, occurrence, and importance of disaccharides and polysaccharides.	1
5	Structure and classification of amino acids.	1
6	Biological importance of amino acids and types and importance of non-proteinogenic amino acids.	1
7	Peptide formation, peptide classification, biologically active peptide, and biological importance of proteins.	1
8	Types of interactions between amino acid residues in the protein and the levels of structural organization of protein structure.	1
9	Lipid classification, fatty acid structure, classification, and nomenclature.	1
10	Structure, types, and importance of triglycerides.	1
11	Structure, types and biological importance of phospholipids, sphingolipids, glycolipids, cholesterol and derived lipids.	1
12	Purine and pyrimidine nucleotides and their biological importance.	1
13	Structure, types, and function of DNA and RNA.	1
14	DNA denaturation, renaturation, and over view on the flow of genetic information.	1
15	Revision	1

G- ASSESSMENT TASKS:			
#	Type of assessment task	Week	Total Grades
1	Continuous assessment	Weeks 1-13	30%
2	Midterm examination (written)	Week 8	20%
3	Assignment submission	Week 10	10%
5	Final written examination	Week 17-18	40%



H- LEARNING RESOURCES:

1- Required textbook:

- D L Nelson and Cox Lehninger, 2004, Lehninger's Principles of Biochemistry. 4th Edition, W H Freeman
- Biochemistry. Jeremy M. Berg_ John L. Tymoczko_ Lubert Stryer, 5th ed 2007.

2- Essential references:

- Journal of biochemistry
- Biochemical journal

Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).
- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
- Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
- Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.
- Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.