السنة الثانية – الفصل الأول

الكيمياء الحيوية

Biochemistry

(0501213)

(3 Credit Hours)

The aim of this course is to present the biochemical events at the molecular & cellular level. Major topics include: Nucleic acids & gene structure. Bioenergetics, citric acid cycle and oxidative phosphorylation; metabolism of carbohydrate, lipids, amino acids & nucleotides & their regulation; vitamins, minerals & biochemical basis of nutrition. Through out the course, aspects of human biochemistry are presented in the context of their function. This is followed by descriptions of how these functions are disrupted in the presence of disease at the biochemical level.

No.	Topic	No. of Lectures
1.	Plasma proteins	2
2.	Immunoglobulins: types, function & structure	2
3.	Bioenergetics	2
4.	Oxidative phosphorylation	3
5.	Introduction to metabolism, digestion & absorption of carbohydrate & general regulation ofmetabolism	2
6.	Glycolysis	2
7.	Tricarboxylic acid cycle	2
8.	gluconeogenesis	1
9.	Glycogen metabolism	2
10.	Metabolism, of monosaccharides & disaccharides	1
11.	Pentose phosphate pathway, ROS & anti-oxidants	2
12.	Glycosaminoglycans & glycoproteins	1
13.	Lipid metabolism	9
14.	Nitrogen metabolism: -Amino acids: disposal of nitrogen -Amino acid degradation & synthesis -Conversion of amino acids to specialized products. -Nucleotide metabolism.	7
15.	nutrition	1
16.	vitamins	2

References:

Main: Lippincott's 3rd edition

Supplement:
1. Lippincott's Illustrated Review: Biochemistry
2. Harper's illustrated biochemistry 27th edition
3. Basic medical biochemistry (smith, marks & marks)