

Template for Course Plan (Biochemistry)

II. Course Description:

The course is designed to assist the students to acquire knowledge of the normal biochemical composition and functioning of human body and alterations in understand the biochemistry in diseases for practice of emergency medicine. This course aims to provide students with basic knowledge about structures, classifications of carbohydrates, lipids, proteins, vitamins, enzymes and hormones. In addition to the regulatory mechanisms of metabolic pathway.

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to biochemistry	▪ Introduction ▪ Definition ▪ Normal biochemical processes ▪ Impact of the Human Genome Project (HGP) on Biochemistry & Medicine ▪ Uses of biochemical investigations and laboratory tests in relation to diseases	1	2
2	Carbohydrates & carbohydrate metabolism	▪ Definition ▪ Properties, structure, composition, and function ▪ Classification of carbohydrates ○ Monosaccharide (derivatives and importance) ○ Disaccharides (Structure, glycosides bonds and importance) ○ Polysaccharides (Homo- and heterorogenous and their importance) ▪ Introduction to Metabolism ▪ Blood glucose regulation ▪ Glycolysis and Kreb's	2	4

		- cycle - Glycogen metabolism - Metabolic disorders		
3	Lipids	- Definition - Properties, structure, composition and functions - Classification of lipids	2	4
4	Fatty acids	- Properties of Fatty acid - Eicosanoids - Metabolism of fatty acid - Metabolic disorders	1	2
5	Lipoprotein & Cholesterol	- Properties - Functions - Atherosclerosis - Investigations and their interpretations	1	2
6	Midterm exam	Midterm exam	1	2
7	Proteins	- Properties, structure, composition, and importance - classification of proteins	2	4
8	Amino acids	- Properties & importance of amino acids - Classification and structure of amino acids - Amino acid metabolism (Transamination - Deamination – Urea formation)	1	2
9	Enzymes	- Definition - Properties of enzymes - Mechanism of enzyme action - Classification - Biological importance of enzymes - Factors effecting activity of enzymes	1	2
	Vitamins and minerals	- Definition - Classification - Deficiency - Absorption - Storage - Normal concentration - Investigations and their interpretations	1	2

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	Nucleic acids	▪ Properties ▪ Importance ▪ Types ▪ Structure & chemical composition ▪ Nucleic acid metabolism	2	4
	Final exam	Final exam	1	2
Number of Weeks /and Units Per Semester			16	32