



University of Thi-Qar
College of Nursing
Undergraduate Program
Biochemistry

1. Course Title: Biochemistry

2. Course Number: (102)

3. Credit Hours: Total: (4) credits:
Theory (1) credits
Lab. (2) credits
Clinical (3) credits

4. Course Calendar: Total: (5) hours weekly of (15) weeks:
Theory (3) hrs.
Lab. (2) hrs.
Clinical (-) hrs.

5. Placement: First Year / First Semester

6. Course Description: The biochemical studies introduce students to the fundamental Concepts compounds of biochemistry. The students look at both structure and role of abnormal carbohydrates, lipids, amino acids, proteins & enzymes with diseases . They also acquire the basic skill necessary for general laboratory analysis and operating, maintaining, and cleaning laboratory equipments.

7. Course Goals: After successfully completion of the course the students will be able to :

1. Define nutrients, properties, and classification.
2. Illustrate biochemical changes of nutrients and its metabolic pathway in human body.
3. Realize some important body constituents and their chemical changes in the laboratory.
4. Differentiate the biochemical functions of different human organs in normal and abnormal conditions.
5. Understand the human biochemical reactions in normal situation and in case of diseases.
6. Use laboratory methods for monitoring biochemical reactions in biological samples.
7. Handle the laboratory equipment properly

8. Course Outline:

Part I: Chemistry of Carbohydrates , Definition, Classification and Chemical properties

Part II: Metabolism of Carbohydrates. Glycogenesis, Glycogenolysis and Glycolysis.

Part III: Krebs Cycle, Metabolic disorder of carbohydrate metabolism and Diabetes mellitus.

Part IV: Chemistry of Lipids ,Definition, Classification and Chemical properties, Cholesterol, Bile acids, and bile salts.

Part V: Lipids Metabolism, Fatty acid oxidation ATP production,

Part VI: Midterm Exam

Part VII: Digestion and absorption of lipids

Part VIII: Metabolic disorder of lipid metabolism: Ketogenesis and Fatty liver

Part IX: Chemistry of amino acids and proteins : Classification and Some properties of proteins, Protein metabolism,

Part X: Disorder of protein metabolism and blood proteins Non protein compounds, Ammonia and Uric acid synthesis

Part XI: Renal function, Blood urea formation cycle and Creatinine

Part XII: Midterm Examination

Part XIII: Chemistry of Enzymes: Definition ,Inhibition and Coenzyme.

Part XIV: Activity of Enzyme: Classification and properties of enzymes

Part XV: Plasma Enzymes: Amylase and Lactate dehydrogenises.

Part XVI :Liver enzymes

Part XVII: General examination of urine