Republic of Iraq
Ministry of Higher Education and
Scientific Research
University of Wirth Al anbiya'a
College of Nursing

وزارة التـعليم العالي والبحث العلمي
جامعــة وارث الأنبــياء
كلية التمريض

Course Specifications

Course name : Biochemistry **Course sages /Semester: First stage /First Sem.**

Credit Hours *(4)*. Course Calendar: Total (5) hours Weekly Theory (3) hrs. Clinical (2) hrs.

Teacher name Zahraa Abdali Abdallteef Althabet

Certificate: M.Sc. Biochemistry , M.Sc. biotechnology

General objectives / Goals and Clinical related skills/ if present …

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

Methods of teaching (theory) and Clinical teaching methods

- Lectures - discussions - Demonstrations - Lab. Work -E – learning

Methods of evaluation

- exams
- quiz
- report
- attendance
- classes activity
- technical practice

Degree percentages/ divisions:

Theory and Clinical / Lab

1st theory exam. 15%
2nd theory exam. 15%
Lab. activities 20%

Final lab. exam. 20%
Final theory exam. 30%

Resources and references

- Nutrition and Biochemistry for Nurses (2015) (Anthikad) [PDF] [UnitedVRG]
- Lehninger 4 Principles of Biochemistry, Fourth Edition - David L. Nelson, Michael M. Cox
- Biochemistry__Satyanarayana_Chakrapani
- Biochemistry (Lippincott's Illusrated Reviews Series), 6E -2017
- Basic Medical Biochemistry - A Clinical Approach

List of contents:

Week number	Lecture title	Main Contents	Expected Date/
1.	**Chemistry of Carbohydrate**	• Definition of carbohydrate. • Classification, Mono, oligo and Polysaccharide. • Chemical properties of Carbohydrate.	**(3) hr.**
2.	Metabolism of Carbohydrate.	Glycogensis Glycogenolysis Glycolysis Kreb Cycle	**(3) hr.**
3.	Metabolic disorder of carbohydrate metabolism	Diabetes mellitus.	**(3) hr.**
4.	**Chemistry of Lipids**	• Definition Fats, oil, Waxes, Fatty acids. • Classification. -Simple lipids -Compound lipids. -Derived lipids. • Steroids • Sterols -Cholesterol. -Bile acids	**(3) hr.**
5.	Lipids metabolism	Fats Oxidation	**(3) hr.**
6.	Metabolic disorder of lipids metabolism	Ketosis	**(3) hr.**
7.	**Chemistry of Amino acids and proteins**	• Definitions of amino acid and protein. • Classification of Amino acid. • Classification of proteins. -Simple Protein. -Conjugated Protein. -Derived Protein.	**(3) hr.**
8.	9. Protein metabolism.	Urea cycle	**(3) hr.**
10.	Metabolic disorder of protein metabolism	• Blood protein. • Non protein. • Nitrogen products. -Urea Formation. -Creatinine Formatin. -Uric Acid Formation.	**(3) hr.**

11.	**Chemistry of Enzymes**	• Definition of Enzymes, Substrate. • Hole Enzyme, Coenzyme unit of Enzyme and Zymogene. • Inhibition of Enlyme. -Competitive inhibitors Non Competitive inhibitors.	**(3) hr.**
12.	Factors influence the activity of Enzyme.	Temperature -PH. -Concentration of Enzyme. -Concentration of Substrate. -Enzyme properties and Classification. -Plasma enzyme. -Lactate dehydrogenises Amylase	**(3) hr.**
13.	**Liver Function test**	• Classification the liver Function test. • Uses of Various testes collecting to evaluate the liver dysfunction.	**(3) hr.**
14.	**Renal function test**	• Function of Kidney. • Uses Various Functions tests that can be employed to assess the renal function.	**(3) hr.**
Lab.	**1**	• Handling of laboratory equipment	**(2) hr.**
Lab	**2**	• Serum glucose	**(2) hrs.**
Lab	**3**	• Serum cholesterol	**(2) hr.**
Lab	**4**	• Serum protein	**(2) hr.**
Lab	**5**	• Serum Urea	**(4) hrs.**
Lab	**6**	• Serum Creatinine	**(2) hrs.**
Lab	**7**	• Serum uric acid	**(2) hrs.**
Lab	**8**	• Serum bilirubin	**(2) hrs.**
Lab	**9**	• Serum Gpt,Got	**(4) hr.**
Lab	**10**	• Serum Alp, Acid Phosphates	**(4) hr.**
Lab	**11**	• Normal and abnormal urine	**(4) hr.**

Signature Zahraa **Date 2020 – 2021**

Head of department signature …… Faculty Dean approval