Template of Course Syllabus of Biochemistry

Faculty: Faculty of Medicine and Health Sciences
Department: Health Sciences
Program: Bachelor in Radiologic Technology & Medical Imaging

I. General information about the course instructor :							
Name	**Dr. Abdulhabib Alqubaty**	**Office Hours(3 Hours Weekly)**					
Location & phone number	**770145433**	**Sat**	**Sun**	**Mon**	**Tue**	**Wed**	**Thu**
Email	**Alqubaty71@gmail.com**			√			

II. General information about the course :						
1.	**Course Title:**	**Biochemistry**				
2.	**Course Code and Number :**	BMI214				
3.	**Credit Hours :**	**Lecture**	**Seminar/Tutorial**	**Practical**	**Training**	**Total**
		2		**1**		**3**
4.	**Study Level and Semester:**	2nd year /1st semester				
5.	**Pre-requisites :**	**BHS110**				
6.	**Co-requisites** :	No				
7.	**Program in which the course is offered**	Bachelor in Radiologic Technology & Medical Imaging				
8.	**Teaching Language:**	English				
9.	**Instruction location:**	**University of Science and Technology, Sana'a, Yemen**				

III. Course description:

This course concerned with the fundamental knowledge about structure, function, classification and properties of biomolecules in human body as amino acids, proteins, carbohydrates, lipids, nucleic acids, vitamins and minerals. The course emphasizes the effect of ionizing radiation on these molecules. The teaching strategies will include lectures, group working, laboratory visit, and assignment. The students will be evaluated through written exam, practical exam, reports and assignments. General& organic chemistry is prerequisite course.

عميد الكلية:
د. عبد الله المخلافي

رئيس القسم:
د. عبد الحبيب القباطي

المراجع :
د.مجاهد نصار

الموصف :
د.عبد الحبيب القباطي

IV. Course Aims: This course is aimed to:

1. Enable students to be oriented with the importance of biomolecules.
2. Familiarizes the students with the mechanisms of DNA damage by ionizing radiation.
3. Learn students the structure and classification of macro and micro biomolecules.
4. Provide student with the knowledge to identify carbohydrates, lipids, enzymes, proteins, nucleotides and nucleic acids.

V. Course Intended Learning Outcomes (CILOs) :

1. Illustrate the biochemical importance of carbohydrates, lipids, enzymes, proteins, enzymes, vitamins and nucleic acids.
2. Explain the direct and indirect effects of ionizing radiation on DNA.
3. Evaluate and correlate laboratory results of unknown biochemical test.
4. Interpret the observations of chemical tests to identify unknown sugar, lipids or protein solutions.
5. Perform some basic chemical testes to identify different sugars, lipids and proteins.
6. Work effectively in a group in a lab or during preparation of seminars.

VI. Course topics and sub-topics (theoretical and practical) with contact hours and alignment to CILOs

Topics/Units of Course Contents

First: Theoretical Aspects

No.	Course Topics/Units	Sub-topics	No. of Weeks	Contact Hours
1	Introduction	Biomolecules	1st	1
2	Carbohydrates	Definition, functions, classification, monosaccharides, disaccharides, polysaccharides and carbohydrate derivatives.	2nd -4th	6
3	Amino acids and proteins	General structure, functions, classification of amino acids (chemical, nutritional, Metabolic) Peptide formation, Biologically Active Peptides, protein classification according to (function, shape, and chemical classification), protein denaturation	5th-7th	6
4	Med Exam		8th	1
5	Enzymes	Definition and distribution of enzymes, enzyme names, active sites, Cofactors, Zymogens, factors affecting reaction Inhibition of enzyme activity and regulation of enzyme activity,	9th,10th	4
6	Nucleic acids	Types and function of nucleic acids, nucleotide structure, Structure of DNA, Structure and types of RNA and Effect of ionizing radiation on DNA	11th	2
7	Lipids	Definition, functions, classification, fatty acids, triglyceride, phospholipids, glycolipids, steroids and lipoproteins	12th,13th	4
8	Vitamins and minerals	Definition, functions, classification, clinical indications	14th,15th	4
9	Final exam		16th	2

المراجع :
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Total number of weeks and hours	15	30

Second: Practical/Tutorial/Clinical Aspects			
No.	**Practical/Tutorial/Clinical topics**	**No. of Weeks**	**Contact Hours**
1	Lab safety	2nd	2
2	Identification of amino acids	3rd	2
3	Proteins identification	4th	2
4	Lipids identification	5th	2
5	Monosaccharides identification	6th	2
6	Disaccharides identification	7th	2
7	Polysaccharides identification	8th	2
8	General scheme	9th	2
9	Practical exam	10th	2
Total number of weeks and hours		9	18

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