Thomas Adewumi University Course Outline	
Faculty	Computing and Applied Sciences
Department	Biological Science
Course Title	**STRUCTURES AND CHEMISTRY OF BIOMOLECULES**
Year of Study	2
Course Code	BCM 220
Credit Hours	2
Contact Hours	40
Mode of Delivery	Classroom Lectures
Mode of Assessment	Weight%
Continuous Assessment	40%
Final Examination	60%
Total	100%
Course Lecturer and Instructor(s)	Dr A.T. Bamigbade
Course Description	Biochemistry involves the reactions leading to the buildup and breaking down of macromolecules within the cell or living organism. For any student offering biochemistry, it is important to be able to deplore biochemistry approach to both isolate and purify macromolecules such as carbohydrate, lipids and vitamins.
Course Objective and	This course would enable the understanding of the following: 1. The fundamental meaning of amino acids and their role in protein formation 2. Classification and chemistry of amino acids, proteins and their derivatives 3. Methods of isolation and purification of biomacromolecules such as carbohydrate, lipids and vitamins
Learning Outcomes	By the end of the course, students will be able to: 1. Highlight all the 20 protein-forming amino acids 2. Group amino acids into respective classes

	3. Understand how amino acids form peptide bonds and polypeptide chain 4. Four levels of protein organization 5. Highlight some conjugated proteins 6. Highlight some methods used in purifying carbohydrate, lipids and vitamins 7. Purify carbohydrate, lipids and vitamins in the laboratory
Teaching and Learning	The class will meet for 3 hours each week. Class time will be used for a combination of lecture, classwork and tutorials
Detailed Course Content	Chemistry of amino acids, protein and their derivatives. Methods of isolation and purification of carbohydrates lipids and vitamins

Course Content Sequencing

Weeks	Detailed Course Outline	Allowed Time
Week1	**1. Introduction to amino acid** • Define amino acids • Draw the structure a typical amino acid • Identify the part of amino acid that changes- side chain • Draw all the 20 amino acids	2 Hours
Week2,3,4	**0. Classify amino acid** • Explain the various reactions of amino acid based on classes • Explain peptide bond formation • Describe and Explain isoelectric point of amino acids **0. Explain the term protein** • Classify protein • Explain conjugated proteins • Discuss the four levels of protein organization **0. Continuous assessment I**	12 Hours
Week5,6,7,8	0. Methods of isolation of carbohydrates, lipid, and vitamins	14 Hours
Week9,10,11,12	0. Methods of purifying carbohydrates, lipid, and vitamins 0. Continuous Assessment II	12 Hours
After Week 12	0. Examinations	

Recommended Reading Material

1. Reginald Garrett and Charles Grisham (2010). Biochemistry. Brooks/Cole, Cengage Learning
2. David Nelson and Michael Cox (2016). Principles of Biochemistry. McGrawHill education

Course Code: BCM 220
Course Title: Structures and Chemistry of Biomolecules

Preamble: Biochemistry involves the reactions leading to the build up and breaking down of macromolecules within the cell or living organism. For any student offering biochemistry, it is important to be able to deplore biochemistry approach to both isolate and purify macromolecules such as carbohydrate, lipids and vitamins.

. Specific Course Objective/Learning Outcomes

This course would enable the understanding of the following:

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2. Classification and chemistry of amino acids, proteins and their derivatives
3. Methods of isolation and purification of biomacromolecules such as carbohydrate, lipids and vitamins

B. Learning Activities/ Course Delivery Methods

1. Lectures: Detailed content of course are taught in class

C. **Course Content:** Chemistry of amino acids, protein and their derivatives. Methods of isolation and purification of carbohydrates lipids and vitamins