

THOMAS ADEWUMI UNIVERSITY COURSE OUTLINE		
Faculty	Computing and Applied Sciences	
Department	Biological Sciences	
Course Title	INTRODUCTORY BIOCHEMISTRY	
Year of Study	2	
Course Code	BCM 219	
Credit Hours	2	
Contact Hours	30	
Mode of Delivery	Classroom Lectures	
Mode of Assessment		Weight %
Continuous Assessment		40%
Final Examination		60%
Total		100 %
Course Lecturers	FAROHUNBI S.T	
Course Description	Biochemistry is the study of biological and structural functions of biomolecules and their metabolism.	
Course objective	This course would enable the understanding of the following: <ol style="list-style-type: none"> 1. Solutions, pH and buffers 2. Chemistry of the major constituents of the cells 3. Enzyme and kinetics of enzymes 4. Chemistry of important biomolecules – Carbohydrates, Lipids, Protein, and nucleic acids. 	
Learning Outcomes	By the end of the course, student will be able to: <ol style="list-style-type: none"> 1. Calculate the concentration of different solutions (molarity, molality, percentage by mass, etc) 2. Explain the chemistry of major constituents of the cells 3. Explain the process of cell fractionation 	

	<p>4. Understand the structure of carbohydrates, protein lipids and nucleic acids</p> <p>5. Explain the mechanism of enzyme action and bioenergetics</p>	
Teaching and Learning	The class will meet for two hours each week. Class time will be used for a combination of lectures and Tutorial sessions	
Detailed Course Content	Solutions, Osmotic Pressure, Acids and bases. pH and buffers. structure of cells - intracellular organization and organelles functions. Methods of cell fractionation. Intracellular localization of enzymes and biochemical activities. Chemistry of the major constituents of the cells: carbohydrates, lipids, proteins, nucleic acids and nucleoproteins. Coenzymes: structure and function; enzyme kinetics; mechanism of enzyme action and control of enzymatic action. Bioenergetics.	
Course content sequencing		
Weeks	Detailed Course Outline	Allocated Time
Week 1-2	<p>Solutions (molarity, molality, calculations of different concentrations of solutions)</p> <p>Osmotic Pressure, Acids, and bases.</p>	4 hours
Week 3-4	<p>pH and buffers (Henderson Hassel-bash equation, preparation of buffers)</p> <p>Structure of cells - intracellular organization and organelles functions.</p>	4 hours

	Methods of cell fractionation. Intracellular localization of enzymes and biochemical activities.	
Week 5-7	Chemistry of the major constituents of the cells: carbohydrates & lipids, Proteins and nucleoproteins	6 hours
Week 8-9	Coenzymes: structure and function Enzyme kinetics	4 hours
Week 10	Mechanism of enzyme action and control of enzymatic action. Bioenergetics.	2 hours
After Week 12	Examinations	
Recommended Reading Material		
<ol style="list-style-type: none"> 1. David, L., Nelson, D.L., Cox, M.M., Stiedemann, L., McGlynn Jr, M.E. and Fay, M.R., 2000. <i>Lehninger principles of biochemistry</i>. 2. Lieberman, M. and Marks, A.D., 2009. <i>Marks' basic medical biochemistry: a clinical approach</i>. Lippincott Williams & Wilkins. 3. Rodwell, V.W., 2015. <i>Harper's illustrated biochemistry</i>. McGraw-Hill Education. 4. Vasudevan, D.M., Sreekumari, S. and Vaidyanathan, K., 2019. <i>Textbook of biochemistry for medical students</i>. Jaypee brothers Medical publishers. 5. Chatterjea, M.N. and Shinde, R., 2011. <i>Textbook of medical biochemistry</i>. Wife Goes On. 		

Course Code: BCM 219

Course Title: Introductory Biochemistry

Preamble: Biochemistry is the study of biological and structural functions of biomolecules and their metabolism.

A. Specific Course Objectives/Learning Outcomes

This course would enable the understanding of the following

1. Calculate the concentration of different solutions (molarity, molality, percentage by mass, etc)
2. Explain the chemistry of major constituents of the cells
3. Explain the process of cell fractionation
4. Understand the structure of carbohydrates, protein lipids and nucleic acids

5. Explain the mechanism of enzyme action and bioenergetics

B. Learning Activities/Course Delivery Methods

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

C. **Course Content:** Solutions, Osmotic Pressure, Acids and bases. pH and buffers. structure of cells - intracellular organization and organelles functions. Methods of cell fractionation. Intracellular localization of enzymes and biochemical activities. Chemistry of the major constituents of the cells: carbohydrates, lipids, proteins, nucleic acids and nucleoproteins. Coenzymes: structure and function; enzyme kinetics; mechanism of enzyme action and control of enzymatic action. Bioenergetics.