

THOMAS ADEWUMI UNIVERSITY**COURSE OUTLINE**

Faculty	Computing and Applied Sciences	
Department	Biological Sciences	
Course Title	GENERAL BIOCHEMISTRY PRACTICAL I	
Year of Study	2	
Course Code	BCH 205	
Credit Hours	1	
Contact Hours	15	
Mode of Delivery	Classroom Lectures Laboratory Practical Sessions	
Mode of Assessment		Weight %
Continuous Assessment/Practical sessions		50%
Final Examination		50%
Total		100 %
Course Lecturers	FAROHUNBI S.T.	
Lab Instructor	Miss Onukogu Stella	
Course Description	The course is expected to expose the students to Laboratory experiments to reflect the topics covered in BCH 201. Isolation techniques: Homogenization and centrifugation. Measurement of pH, buffers; acidity and alkalinity; pH and pKa values.	
Course objective	This course would enable the understanding practical aspects of the following: <ol style="list-style-type: none">1. Laboratory ethics and practices in Biochemistry and biosciences2. Homogenization and centrifugation	

	<ol style="list-style-type: none"> 3. pH and Buffers 4. acidity and alkalinity 5. homogenization and centrifugation 6. extraction and isolation of proteins from plant/animal sources 	
Learning Outcomes	<p>By the end of the course, student will be able to carry out</p> <ol style="list-style-type: none"> 1. Homogenization and centrifugation 2. pH and Buffers 3. acidity and alkalinity 4. homogenization and centrifugation 5. extraction and isolation of proteins from plant/animal sources 	
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	<p>Intracellular localization of enzymes. Properties of enzymes. Enzyme kinetic and inhibition; co-enzymes and cofactors. Glycolysis, Tricarboxylic acid cycle, Oxidative Phosphorylation and Hexose monophosphate shunt. Membranes and transport. Glycogen synthesis and breakdown. Oxidative deamination, transamination, and urea cycle. Degradation of amino acid. Synthesis of fatty acids, oxidation of fatty acids. DNA replication and transcription: protein biosynthesis and regulation. Cholesterol: chemistry, synthesis, and breakdown. Biochemical basis of hormone action. Drug metabolism. Mineral metabolism and role of calcium in bone formation. Introduction to Nutritional Biochemistry.</p>	
Course content sequencing		
Weeks	Detailed Course Outline	Allocated Time
Week 1-2	<p>Intracellular localization of enzymes Properties of enzymes Enzymes kinetic and inhibition</p>	4 hours
Week 3-4	<p>Coenzymes and Cofactors Glycolysis, Tricarboxylic acid cycle Oxidative phosphorylation and Hexose monophosphate shunt</p>	4 hours

Week 5-7	<p>Membranes and Transport</p> <p>Glycogen synthesis and breakdown</p> <p>Oxidative deamination, transamination and urea cycle</p> <p>Degradation of amino acid, Synthesis of fatty acids, oxidation of fatty acids</p>	6 hours
Week 8-9	<p>DNA replication and transcription; protein biosynthesis and regulation</p> <p>Cholesterol: chemistry, synthesis and breakdown</p>	4 hours
Week 10	<p>Biochemical basis of hormone action</p> <p>Drug metabolism. Mineral metabolism and role of calcium in bone formation.</p> <p>Introduction to Nutritional Biochemistry</p>	2 hours
After Week 12	Examinations	

Recommended Reading Material

1. David, L., Nelson, D.L., Cox, M.M., Stiedemann, L., McGlynn Jr, M.E. and Fay, M.R., 2000. *Lehninger principles of biochemistry*.
2. Lieberman, M. and Marks, A.D., 2009. *Marks' basic medical biochemistry: a clinical approach*. Lippincott Williams & Wilkins.
3. Rodwell, V.W., 2015. *Harper's illustrated biochemistry*. McGraw-Hill Education.
4. Vasudevan, D.M., Sreekumari, S. and Vaidyanathan, K., 2019. *Textbook of biochemistry for medical students*. Jaypee Brothers Medical publishers.
5. Chatterjea, M.N. and Shinde, R., 2011. *Textbook of medical biochemistry*. Life Goes On.

