

THOMAS ADEWUMI UNIVERSITY**COURSE OUTLINE**

Faculty	Computing and Applied Sciences	
Department	Biological Sciences	
Course Title	ANALYTICAL BIOCHEMISTRY	
Year of Study	3	
Course Code	BCH 313	
Credit Hours	3	
Contact Hours	30	
Mode of Delivery	Classroom Lectures	
Mode of Assessment		Weight %
Continuous Assessment		40%
Final Examination		60%
Total		100 %
Course Lecturers	ACHO M. A.	
Course Description	The course is expected to expose the students to the basics of tissue and cell culture, electrophoresis, chromatography, ultrafiltration, x-ray diffraction, viscosity, audioradiography, radiolabeling, spectroscopy and spectrophotometry, centrifugation and isotopic techniques.	
Course objective	This course would enable the understanding of the following: <ol style="list-style-type: none">1. Techniques of tissue and cell culture.2. Principles and instrumentation of electrophoresis and chromatography.3. Principles and instrumentation of ultrafiltration, x-ray diffraction, and viscosity measurement.	

	<ol style="list-style-type: none"> 4. Principles and instrumentation of audioradiography , radiolabeling, spectroscopy and spectrophotometry. 5. Principles and instrumentation of centrifugation and isotopic techniques. 	
Learning Outcomes	<p>By the end of the course, student will be able to explain the following:</p> <ol style="list-style-type: none"> 1. The techniques of tissue and cell culture. 2. The principles, instrumentation, methodologies and applications of electrophoresis, Chromatography, ultrafiltration, and x-ray diffraction. 3. The principles, instrumentation, methodologies and applications of viscosity measurement, audioradiography, radiolabeling, spectroscopy, spectrophotometry, centrifugation and isotopic techniques. 	
Teaching and Learning	The class will meet for three hours each week. Class time will be used for a combination of lectures and Tutorial sessions	
Detailed Course Content	Tissue and cell culture techniques. Principles, instrumentation, methodologies and applications of electrophoresis, Chromatography, ultrafiltration, x-ray diffraction, viscosity measurement, audioradiography, radiolabeling, spectroscopy and spectrophotometry, centrifugation and isotopic techniques.	
Course content sequencing		
Weeks	Detailed Course Outline	Allocated Time
Week 1-2	Tissue and cell culture techniques.	4 hours
Week 3-4	Principles, instrumentation, methodologies, and applications of electrophoresis and chromatography	4 hours
Week 5-7	Principles, instrumentation, methodologies, and applications of ultrafiltration, x-ray diffraction, and viscosity measurement	6 hours
Week 8-9	Principles, instrumentation, methodologies, and applications of spectroscopy and spectrophotometry	4 hours

Week 10	Principles, instrumentation, methodologies, and applications of centrifugation and isotopic techniques	2 hours
After Week 12	Examinations	
<p>Recommended Reading Material</p> <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. Lehninger principles of biochemistry. 2. Rodwell, V.W., 2015. <i>Harper's illustrated biochemistry</i>. McGraw-Hill Education. 3. Vasudevan, D.M., Sreekumari, S. and Vaidyanathan, K., 2019. <i>Textbook of biochemistry for medical students</i>. Jaypee Brothers Medical publishers. 4. Naik, P. (2011). <i>Essentials of Biochemistry (for Medical Students)</i>. JP Medical Ltd. 		

Course Code: BCH 313

Course Title: Analytical 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. The techniques of tissue and cell culture.
2. The principles, instrumentation, methodologies and applications of electrophoresis, Chromatography, ultrafiltration, and x-ray diffraction.
3. The principles, instrumentation, methodologies and applications of viscosity measurement, audioradiography, radiolabeling, spectroscopy, spectrophotometry, centrifugation and isotopic techniques.

Learning Activities/Course Delivery Methods

Lectures: Detailed content of course are taught in class

Course Content: Tissue and cell culture techniques. Principles, instrumentation, methodologies and applications of electrophoresis, Chromatography, ultrafiltration, x-ray diffraction, viscosity measurement, audioradiography, radiolabeling, spectroscopy, and spectrophotometry, centrifugation and isotopic techniques.