

THOMAS ADEWUMI UNIVERSITY**COURSE OUTLINE**

Faculty	Computing and Applied Sciences
Department	Biological Science
Course Title	PROTEIN AND AMINO ACID METABOLISM
Year of Study	2
Course Code	BCM 226
Credit Hours	2
Contact Hours	36
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 understand molecular basis of inborn errors of metabolism, and the urea cycle
Course Objective and	This course would enable the understanding of the following: <ol style="list-style-type: none">1. A detailed biosynthesis and degradation of amino acids2. Classification of essential and non-essential amino acids3. Molecular basis of inborn errors of metabolism4. All the chemical basis of urea cycle
Learning Outcomes	By the end of the course, students will be able to: <ol style="list-style-type: none">1. Highlight all the 20 protein-forming amino acids2. Group amino acids into respective classes3. Understand and give overview of amino acid biosynthesis and catabolism4. Highlight all the reaction steps involved in the urea cycle

	5. Highlight and explain in detail a number of inborn errors of metabolism	
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	Amino acid biosynthesis and catabolism, urea cycle, essential and non-essential amino acids, ketogenic and glucogenic amino acids, inborn errors of metabolism	
Course Content Sequencing		
Weeks	Detailed Course Outline	Allowed Time
Week1	1. Introduction to amino acid <ul style="list-style-type: none"> • Define amino acids • Draw the structure a typical amino acid • Classify amino acid into essential and non-essential amino acids • Draw all the 20 amino acids 	3 Hours
Week2,3,4	0. Discuss biosynthesis and catabolism of amino acids 0. Continuous assessment I	8 Hours
Week5,6	0. Urea cycle	6 Hours
Week7,8,9	0. ketogenic and glucogenic amino acids,	10 Hours
Week10,11,12	0. inborn errors of metabolism 0. Continuous Assessment II	12 Hours
After Week 12	0. Examinations	
Recommended Reading Material		
1. Reginald Garrett and Charles Grisham (2010). <u>Biochemistry</u> . Brooks/Cole, Cengage Learning 2. David Nelson and Michael Cox (2016). <u>Principles of Biochemistry</u> . McGrawHill education		

Course Code: BCM 226

Course Title: Protein and Amino Acid Metabolism

Preamble: 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 understand molecular basis of inborn errors of metabolism, and the urea cycle

. **Specific Course Objective/Learning Outcomes**

This course would enable the understanding of the following:

1. A detailed biosynthesis and degradation of amino acids
2. Classification of essential and non-essential amino acids
3. Molecular basis of inborn errors of metabolism
4. All the chemical basis of urea cycle

B. Learning Activities/ Course Delivery Methods

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

C. Course Content: Amino acid biosynthesis and catabolism, urea cycle, essential and non-essential amino acids, ketogenic and glucogenic amino acids, inborn errors of metabolism.