

Programme: M. Sc. (Zoology)

Course Code: ZOC-103

Number of Credits: 3

Effective from AY: 2018-19

Title of the Course: Animal Biochemistry

<u>Prerequisites for the course:</u>	Elementary knowledge on structural biochemistry.	
<u>Objective:</u>	To understand the biochemical integrity of various life processes and the metabolic pathways.	
<u>Content:</u>	Module 1: Concept of metabolism; Concept of free energy; Coupled reaction; Electron transport system; TCA cycle; Oxidative phosphorylation; Catalytic and Regulatory strategies of enzymes	12 hours
	Module 2: Glycolysis and Gluconeogenesis; Pentose phosphate pathway; Glycogenolysis and Glycogenesis; Biosynthesis of fatty acid, Oxidation of fatty acid ; Biosynthesis of Phospholipid, Tri- acylglycerol and Cholesterol.	12 hours
	Module 3: Protein turn-over and amino acid catabolism; Nitrogen excretion pathways; Oxidation of amino acids; Bio-synthesis of amino acids in animal. Biosynthesis of Pyrimidine and Purine	12 hours
<u>Pedagogy:</u>	Lectures/ Tutorials/Assignments/Self-study.	
<u>References/Readings</u>	1. Albert Lehninger, Principles of Biochemistry, CBS Publisher, New Delhi. 2. Berg J, Tymoczko J and Stryer L, Biochemistry, W H Freeman and Company, New York Devlin TM, Text book of Biochemistry with Clinical Correlations, Willey, Oxford. 3. Murray RK, Granner D, Mayes P and Rodwell VW. Harper's Illustrated Biochemistry, McGraw-Hill Companies, USA. 4. Nelson DL and Cox MM, Lehninger's Principles of Biochemistry, Freeman WH and Co, USA.	
<u>Learning Outcomes</u>	1. Understanding the various metabolic pathways 2. Understanding the regulation of various metabolic pathways 3. Understanding the integrative metabolism. 4. Achieving the perfection and learning various analytical techniques.	