Name of the Programme: **M.Sc. Zoology**

Course Code: ZOO-633 **Title of the Course:** Nutritional Biochemistry

Number of Credits: 02

Effective from AY: 2023-24

Pre-requisites for the Course:	Basic knowledge of physiology and biochemistry	
Course Objectives:	1. To develop concepts in nutritional biochemistry 2. To indicate the nutritional requirements of the body 3. To outline the biomedical importance of various macronutrients and micronutrients	
Content:	**Module 1** Basic concepts of energy and energy expenditure; Calorific values of food – Basal metabolic rate, energy requirements of man, women, infants and children. Dietary Carbohydrates: Functions, classification, food sources, storage in body, biomedical importance; Dietary Proteins - Functions, classification, food sources, composition, essential & non-essential amino acids, protein deficiency, biomedical importance; Dietary Fats: Function of fats, classification, food sources, composition, saturated and unsaturated fatty acids, biomedical importance. Vitamins: sources and functions, deficiency status. **Module 2** Water as nutrient; Electrolyte concentrations of body fluids; Minerals: macro & micronutrients functions, sources. Bioavailability and deficiency of Calcium, Iron, Iodine, Sodium & Potassium (very brief account); concept of acidosis and alkalosis. Nutritional requirements during pregnancy and lactation; Nutrition during infancy, Nutrition in children, Nutrition during adolescence, Nutrition during adulthood. Nutrigenomics of omega 3 and omega 6 fatty acids, essential amino acids, vitamin A, C, D, E and B complex.	15 hours 15 hours
Pedagogy:	Lectures/Tutorials/Videos/Assignments/Group discussion/Self-study.	
References/ Readings:	1. Brody T, Nutritional, Biochemistry, 2nd ed. New York: Academic Press, 1998. 2. C. Gopalan, B.V. Rama Sastri, and and S.C. Balasubramanian, Nutritive	

	value of Indian foods. Indian Council of Medical Research (ICMR), 2016. 3. C. Gopalan, and K. Vijaya Raghavan, Nutrition atlas of India, Indian Council of Medical Research: ICMR, 1971. 4. S. Ghosh, The feeding care of infants and young children. Voluntary Health Association of India, 1981. 5. S.R. Mudambi, Fundamentals of food and nutrition. New Age International, 1995. 6. M. Swaminathan, Handbook of food and nutrition. Bangalore: Bappco, 1989 7. M. Swaminathan, Essentials of food and nutrition: Vol I & II. Madras: Ganesh and Co., 1974. 8. M. Elia, O. Ljungqvist, R. Stratton, and S.A. Lanham, Clinical Nutrition, UK: Willey Blackwell Publication, 2012.
Course Outcomes:	The learner will 1. Perceive the importance of nutrition in the well-being of the body. 2. Outline the importance of various biomolecules, vitamins and minerals. 3. Distinguish the nutritional requirements in different age groups and during pregnancy. 4. Formulate appropriate diet plans to meet daily nutritional requirements.

(Back to top)