(Master of Science –Home Science) (Food Biotechnology)
(M.Sc.-H.Sc.) (Food Biotechnology) Semester (I)

Course Code	PH01CFBT53	Title of the Course	Basic Bio-Chemistry
Total Credits of the Course	04	Hours per Week	04

Course Objectives:	1. Augment the biochemistry knowledge acquired at the postgraduate level 2. Understand the basics of prokaryotic and eukaryotic cells 3. Understand the mechanisms adopted by the human body for regulation of metabolic pathways 4. Get an insight into interrelationships between various metabolic pathways 5. Become proficient for specialization in Nutrition 6. Understand integration of cellular level metabolic events to nutritional disorders and imbalances

Course Content		
Unit	Description	Weightage (%)
1.	Cell: Prokaryotic vs. Eukaryotic cell, cell membrane, Structure and functions of cell organelles, Cell division (mitosis, meiosis), Process of differentiation and proliferation, Cell fractionation	20
2.	Chemistry and metabolism of carbohydrates	25
3.	Chemistry and metabolism of proteins	15
4.	Chemistry and metabolism of lipids	25
5.	Enzymes: Classification, properties, kinetics of enzyme action, Inhibitors, activators, co-enzymes and isoenzymes	15

Teaching-Learning Methodology	Classroom lectures (Blackboard/Power Point Presentations), Discussion on recent updates with related examples

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written Examination (As per CBCS R.6.8.3)	15%

2.	Internal Continuous Assessment in the form of Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the basic structure and functions of cell.
2.	Metabolic regulation of major Carbohydrate, Lipid and Protein metabolic pathways.
3.	Basics of enzymes, enzyme kinetics and enzyme inhibitors.

Suggested References:

Sr. No.	References
1.	Wu, G. (2019). *Amino acids: biochemistry and nutrition*. CRC Press, Taylor and Francis Group.
2.	Harvey, R. A., Champe, P. C., & Ferrier, D. R. (2019). *Lippincott's Illustrated Reviews: Biochemistry*, (7th Edition). Philadelphia, PA., Wolters Kluwer.
3.	Vasudevan, D.M., S. Sreekumari., Vaidyanathan, K., (2016). *Textbook of Biochemistry for Medical Students* (8th Edition). New Delhi: Jaypee BrothersMedical publishers (P) Ltd.
4.	Naik.P. (2017). *Essentials of Biochemistry* (2nd edition). New Delhi: Jaypee Brothers Medical publishers (P) Ltd.
5.	Brown,T.A., Mukhopadhyay, S.N. (2018). *Biochemistry.* Banbury,UK: Viva Books Private Limited.
6.	Nelson, David L., Cox, Michael M. *Lehninger Principles of Biochemistry* (6th Edition). New York: W.H. Freeman and Company.

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