DEPARTMENT OF BIOTECHNOLOGY				*CLASS: II B.Sc. Biotechnology*				
Sem	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
III	Major Practicals	20U3LMP3	Major Practicals-III	2	3	40	60	100

Nature of Course				
Knowledge and skill	✓		Employability oriented	
Skill oriented	✓		Entrepreneurship oriented	

Course Objectives

1	To provide students with an understanding of the basic analysis in biochemistry.
2	To focus on the interpretation of the results with biological normal values.
3	To understand the applicability of the biochemical analysis

	Experiments
1	Preparation of buffers
2	Qualitative analysis of carbohydrates
3	Estimation of glucose
4	Estimation of fructose
5	Qualitative analysis of amino-acids
6	Estimation of cholesterol
7	Estimation of Vitamin C
8	Estimation of DNA
9	Estimation of RNA
10	Enzyme assay – Km value by MM plot and LB plot (Any one enzyme – amylase, Acid phosphatase)
	Spotters Bomb calorimeter, mitochondria, chloroplast, Hemoglobin, myoglobin, Na-K pump, Ramachandran plot.

Books for study

1. JayaramanJ.Laboratory Manual in Biochemistry. 1981. New Age International Publishers.
2. Sadasivam S and Manickam A. Biochemical methods. 2009. New Age International Publishers

Course content designers

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Course Learning Outcomes

On completion of this course the students will be able to

#	CLOs	K –Level
CLO-1	Associate the experimental results with normal biological range	Up to K-2
CLO-2	Analyse biological samples and interpret the results.	Up to K-4
CLO-3	Experiment with biochemical methods.	Up to K-3
CLO-4	Apply basic principles of chemistry to biological systems.	Up to K-3
CLO-5	Demonstrate biochemical analysis.	Up to K-2

Rationale for Nature of the course

The laboratory course based on the core paper Biochemistry and Biophysics aims to discern the basic understanding on the analytical techniques in Biochemistry. They would be trained to make use of instruments for various analyses. They gain knowledge on the interpretation of biological values.

Activities having direct bearing on Skill development /Employability /Entrepreneurship

- Individual experimental activity to the students.
- Hands on training various instruments.
- Analysis and interpretation of results.

Mapping of Course outcomes with Program Outcomes

CO/PO	PO-1	PO-2	PO-3	PO-4	PO-5
CLO-1	3	2	3	2	2
CLO-2	3	2	3	2	2
CLO-3	3	2	2	3	2
CLO-4	3	2	3	1	1
CLO-5	3	2	3	2	2

Mapping of Course outcomes with Program specific Outcomes

CO/PSO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CLO-1	3	3	3	3	2
CLO-2	3	3	2	2	2
CLO-3	3	3	2	3	2
CLO-4	3	3	2	2	2
CLO-5	3	3	2	3	3

Advance application-3; Intermediate level-2 &Basic level-1