

<b>15BT103L</b>	<b>BIOCHEMISTRY LABORATORY</b>				<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	<b>Total No. of Contact Hours – 30</b>				<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
	<b>Prerequisite</b>							
<b>BT 1004</b>								
<b>PURPOSE</b>								
To establish the basics of practical biochemistry and to provide a platform for understanding and analyzing the biomolecules								
<b>INSTRUCTIONAL OBJECTIVES</b>								
	To teach laboratory safety and standard operating procedures of common laboratory equipments							
	To impart skills in preparation of solutions and biological buffers							
	To extend knowledge in analysis, estimation and comparison of biomolecules in normal and diseased conditions							
	To offer exposure on modern separation techniques for biomolecules							

#### LIST OF EXPERIMENTS

- Introduction to commonly used instruments (pH meter, Spectrophotometer, Centrifuge, Microscopes etc..) and laboratory safety
- pH measurements and preparation of buffers
- Qualitative analysis of carbohydrates (Monosaccharide – Hexo, Pentose, Aldo, Keto sugars, Disaccharides – Reducing and non-reducing sugars, Polysaccharides)
- Estimation of blood glucose and comparison of normal and diabetes mellitus samples
- Estimation of blood plasma proteins
- Separation of amino acids on Thin layer chromatography
- Quantification of cholesterol and triglycerides from blood
- Biochemical estimation of nucleic acid using spectrophotometer
- HPLC determination of caffeine in urine – Demo
- Purification of biomolecules using FPLC - Demo

#### REFERENCE

1. Laboratory Manual

<b>15BT103L BIOCHEMISTRY LABORATORY</b>												
<b>Course designed by</b>		<b>Department of Biotechnology</b>										
1	Student <b>outcomes</b>	a	b	c	d	e	f	g		i	j	k
		<b>x</b>	<b>x</b>								<b>x</b>	
2	Mapping of instructional objective with student <b>outcomes</b>	<b>1</b>	<b>1</b>								<b>4</b>	
3	Category	General (G)			Basic Sciences (B)			Engg. Sci. & Tech. Arts (E)		Professional Subjects (P)		
										<b>x</b>		
4	Broad area (for 'P' category)	Biotechnology			Bioprocess Engineering			Chemical Engineering				
		X			--			--				
5	Approval	23 <sup>rd</sup> meeting of Academic Council, May 2013										