Course Code	Course Name	L-T-P-Credits	Year of Introduction
BT232	**Biochemistry Laboratory**	**0-0-3-1**	**2016**

Prerequisite: BT208 Principles of biochemistry

Course Objectives

- To introduce the students about the basic Biochemistry lab experiments
- To acquire basic skills on various basic biochemical techniques in a flawless manner, to ensure productive application of the same in any future endeavor .

Syllabus (At least 12 experiments must be done)

1. Preparation of buffers and reagents.
2. Protein estimation Biuret, Folin's, Spectrophotometry and Bradford Assay.
3. Estimation of Reducing sugars by the Benedict's method.
4. Estimation of cholesterol.
5. Estimation of Nucleic Acids.
6. Qualitative tests for Carbohydrates
7. Qualitative tests for Amino Acids
8. Extraction of lipids, Saponification of Fats
9. Phospholipids: Ashing and estimation of phosphate.
10. Finding the molar absorptivity and stoichiometry of the Fe (1, 10 phenanthroline)$_3$ using absorption spectrometry.
11. Finding the pKa of 4-nirophenol using absorption spectroscopy,
12. Chromatography analysis using TLC
13. Quantitative method for Amino Acids by Ninhydrin method.
14. Precipitation by sodium sulphate.
15. Enzyme assays: Phosphatase from potato, Amylase from sweet potato, Trypsin digestion of proteins.
16. Estimation of AL^{3+} by flourimetry.
17. Estimation of SO^{-4} by nephelometry

Expected outcome

Upon successful completion of this course, the students will be able to

- Prepare reagents for various biochemistry experiments.
- Verify Beer-Lambert's law.
- Estimate protein, reducing sugars, cholesterol and nucleic acids.
- Extract lipids and saponify fats.
- Isolate an enzyme and assay for it.

Use flourimetry and nephelometry.

Reference Books

1. Rodney and Boyer, *Modern Experimental Biochemistry*, Pearson education, India.
2. Alexander J. Ninfa and David P. Ballou, *Fundamental Laboratory Approaches for Biochemistry and Biotechnology*, Fitzgerald Science Press Inc, USA.
3. Wilson K and Walker J, *Principles and Techniques of Practical Biochemistry*, Cambridge University Press.
4. David T. Plummer –*An introduction to Practical Biochemistry*, McGraw- Hill.