Semester	**3**
Course	**Skill**
Paper Code	S2MB230311P
Paper Title	Advanced Laboratory techniques
No. of Credits	
Theory / Practical / Composite	**Practical**
Minimum No. of preparatory hours per week a student has to devote	
Number of Modules	No modules
Syllabus	1. Measurement of pH (buffer) by pH meter 2. Qualitative tests for amino acid, carbohydrate, lipids 3. UV-Vis Spectrophotometry-quantification of protein, assay of enzyme, determination purity of sample 4. Study of enzyme kinetics (K m and V max determination) 5. Thin layer chromatography- Separation of amino acids, lipids and natural substances like catechin from mixtures 6. Separation of protein mixtures by column chromatography 7. Separation of protein mixtures by Polyacrylamide Gel Electrophoresis 8. Western Blot technique-to identify the separated protein 9. Agarose gel electrophoresis-separation and visualization of DNA 10. Gene Induction 11. Restriction digestion 12. DNA ligation 13. Transformation (Blue White screening) 14. Genomic DNA isolation 15. Plasmid DNA isolation

Learning Outcomes	1. To separate the protein by different techniques based on charge, mass 2. To separate amino acid and other biomolecules depending on physico-chemical characters 3. To identification and characterize different DNAs (genomic/plasmid) with different techniques 4. To know the Recombinant DNA technologies with different techniques.	
Reading/Reference Lists	1. Wilson K and Walker J. (2010) Principles and Techniques of Biochemistry and Molecular Biology; 7 th Edition, Cambridge university Press. 2. Voet D and Voet JG, 2013. Fundamentals of Biochemistry. 4 th John Wiley and Sons 3. Nelson DL and Cox MM (2008) Lehninger Principles of Biochemistry, 5 th edition, W. H.Freeman and Company 4. Campbell, MK (2012) Biochemistry, 7 th ed., Published by Cengage Laerning	
Evaluation	CA:40 End sem:7 Attendance:3	
Paper Structure for Theory Semester Exam	NA	