



**MANGALORE UNIVERSITY**  
**DEPARTMENT OF BIOCHEMISTRY**

**MSc Biochemistry**

**II SEMESTER**

**BCP458: PRACTICAL ENZYMOLOGY**

**Practical-Hard Core:4credits**

**8 hours/week**

**Course objectives**

- To have practical knowledge about enzyme kinetics
- To purify the enzymes by ammonium sulphate fractionation
- To calculate  $K_m$ ,  $V_{max}$  of enzymatic reaction.
- To characterize invertase, acid phosphatase, protease and esterase from different sources

**Course outcome**

- Student will have a practical knowledge about enzyme kinetics
- He is able to purify the enzymes by ammonium sulphate fractionation and calculate  $K_m$ ,  $V_{max}$  of enzymatic reactions.
- Characterization of invertase, acid phosphatase, protease and esterase from different sources

**Salivary Amylase:** Activity, Specific activity, Optimum pH and Temperature, pH and Temperature Stability, energy of activation,  $K_m$ ,  $V_{max}$ , effect of metal ions, Purification by ammonium sulphate fractionation and enzyme characterization.

**Assay methods** and some characterization of invertase from yeast, acid phosphatase from potato, protease from papaya and esterase from peas.

**References:**

1. Enzymes: A Practical Introduction to Structure, Mechanism, and Data Analysis; Robert A. Copeland, Wiley- VCH Publishers (2000).
2. Enzyme Kinetics and Mechanism; Paul F. Cook, W. W. Cleland, Garland Science (2007).
3. Biochemical Calculations, Irwin H. Segel (1976) 2nd Ed. John Wiley and Sons.
4. Methods in Enzymology; Colowick S.P. et al., Vol. 152, Academic Press, (1987)

5. Methods of Enzymatic Analysis; Berg Meyer Vol. 1-X,(1974).
6. Basic Biochemical Laboratory Procedures and Computing, R. Cecil Jack (1995) OxfordUniversity.
7. Enzyme Kinetics; Roberts, D.V. (1977), Cambridge UniversityPress

