**BMB 325: Enzymology and Enzyme Technology (4 Credit Hours)**

**Course Outline:**

**LECTURE 1 and 2**
**TOPIC 1**
Protein Biochemistry:- Protein folding,
-Posttranslational modification,
-Protein turnover and targeting;
-Analysis of protein structure,
-Production of therapeutic proteins from recombinant sources;
**LECTURE 3 ,4 and 5**
**TOPIC 2**
Enzymology:- General characteristics of enzyme reactions;
-Enzyme nomenclature and classification;
-Substrate specificity;
-Co-enzymes; regulation of enzyme activity;
-Chemical kinetics and enzyme kinetics,
- Michaelis-Menten equation; activation energy;
**LECTURE 6 and 7**

**CAT 1**

**LECTURE 7**

**TOPIC 3**
-Factors affecting rates of enzyme reactions
-:effect of pH and other factors on rates of reactions;

**LECTURE 8**
**TOPIC 4**
- Enzyme inhibitors,
-enzyme inhibitors as therapeutics,
**LECTURE 9**
**TOPIC 5**
-Inhibition of enzymatic reactions and kinetics;
-Bisubstrate reactions;
**LECTURE 10**
**TOPIC 6**
-Catalytic mechanisms;

**LECTURE 11**

**TOPIC7**
-Structure and mechanics of lysozyme;
-Serine proteases and glutathione reductase;
**LECTURE 12**
**TOPIC 8**
-Immobilized enzymes,

**LECTURE 13**

- Diagnostic testing using enzyme activity.

**CAT 2**

**END OF SEMETER EXAM**

**Learning-Teaching Strategies**

Lectures, discussions and group discussions and reading assignments, laboratory demonstrations and practicals.

**Assessment of learning**

Written exams and laboratory practicals

- Continuous Assessments: 40% of the semester marks

End of Semester Examinations: 60% of the semester mark

**References**

**Main References**


1. Biochemistry by C.K. Mathews, K.E. Van Holden, and K.G. Ahern. Publisher: Addison Wesley Longman.
2. Fundamental of Biochemistry by D. Voet, J.G. Voet, C.W. Pratt. Publisher: Wiley
3. Biochemistry by D. Voet, J.G. Voet. Publisher: Wiley


**Other References**


4. Biochemistry by L. Stryer. Publisher: Freeman
5. Fundamentals of Enzymology by N.C. Price, L. Stevens. Publisher: Oxford Science