

EBA1300 Biochemistry**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
None	1	2	2	0	2	3

COURSE AIM

This course focuses on the study of living cells and biological molecules with an emphasis on their applications in chemical and pharmaceutical industries. Topics to be covered include cell biology and structure, fundamental biochemistry of proteins and enzymes, metabolic pathways and biosynthesis of metabolites, molecular biology including central dogma, genetic code, protein synthesis and practical examples of industrial applications.

COURSE WEEKLY CONTENTS

- 1 Course overview and introduction to biochemistry.
- 2 Basics of cell biology.
- 3 Cell membrane and cell organelles.
- 4 Cell transport (passive transport).
- 5 Cell transport continued (Active & bulk transport)
- 6 Fundamental biochemistry of proteins (importance of proteins, properties & classification of amino acids).
- 7 Fundamental biochemistry of proteins continued (peptide bonds, conformational levels of proteins, conjugated proteins, Denaturation).
- 8 Enzymes and co-enzymes (mechanism of enzyme catalysis, specificity, models of fitting, classification of enzymes, co-factors).
- 9 Holoenzymes, pro-enzymes, isoenzymes, enzyme kinetics (factors affecting activity).
- 10 Enzyme inhibitors and applications.
- 11 Nucleotides and structure of nucleic acids.
- 12 Central dogma of life and genetic code.
- 13 Gene expression and regulation, and protein synthesis.
- 14 Water soluble and fat soluble vitamins.
- 15 Metabolic pathways and biosynthesis of metabolites

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook Denise R Ferrier., Ph. D. Lippincott's Illustrated Reviews: Biochemistry. Philadelphia :Wolters Kluwer.