Course Specifications

General Information

Course name	Enzymes and Hormons
Course number	BIOL4376
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - The course provides an introduction to enzymology and endocrinology. The first part of course integrate the basic aspects of enzymology with the kinetic theories to provide a mechanistic overview of enzyme activity and regulation in cells. The second part of course is to cover the major endocrine systems which regulate metabolism, reproduction, growth and development

Course Contents

1 - Enzyme characteristics and properties
2 - Enzyme nomenclature/classification
3 - Enzyme Purification and Assay
4 - Kinetics of single substrate reactions
5 - Enzyme inhibition
6 - Multi-substrate reactions
7 - Substrate binding analysis
8 - Reaction Mechanisms and Catalysis
9 - Active Site Investigations
10 - Specific enzymes, alcohol dehydrogenase, ribonuclease A, triose phosphate isomerase, amino acyl tRNA synthetases, carbonic anhydrase
11 - ENZYME REGULATION , Partial Proteolysis, Phosphorylation, adenylylation, disulphide reduction, Allosteric regulation
12 - Introduction to Endocrinology, Hormone synthesis and release, and Mechanism of hormone action
13 - Hypothalamus and pituitary gland
14 - Growth hormones
15 - Thyroid gland and Adrenal grand
16 - Male and Female reproductive Endocrinology
17 - Pancreatic Hormone and Diabetes Mellitus

Students Assessment

Assessment Method	TIME	MARKS
First hour exam		20
Second hour exam		20
Attendence		10
Final exam		50

Books and References

Essential books	Lehninger Principles of Biochemistry, Fifth Edition - David L. Nelson, Michael M. Cox, 2008.
Recommended books	Structure and Mechanism in Protein Science: A Guide to Enzyme Catalysis and Protein Folding, 2nd edition (1999) Basic and clinical endocrinology: By Francis S. David G Gardner 7th edition 2004 Principle and Practice of Endocrinology and metabolism: By Kenneth L. Becker John P. Bilezikian, William J. Bremner, Wellington Hung, C. Ronald Ka 3th edition 2002