BMPC2001 MEDICAL BIOCHEMISTRY (3-0-0)

Module-I (8 Hours)
Cells: Introduction to cells, Composition of cells, movements of the cell membrane, Life cycle of cells, Action Potential
Biomolecules: Carbohydrates, Amio acids, Lipids, Nucleic Acid, Vitamins,Minerals

Module-II (8 Hours)
Bioenergetics: Adenosine Triphosphate(ATP),structure of ATP, Method of ATP Productions, self regulation system of ATP, Overview of energy transfer.
Enzymes-I: Chemical nature, Nomenclature, classification, hydrolysis, mechanism of enzyme action, mechanisms of enzyme inhibition,Activation Energy
Cellular respiration: Aerobic and anaerobic respiration

Module-III (8 Hours)
Metabolism-I: Introduction to metabolic process, Metabolism of Carbohydrates: Glycolysis, TCA Cycle ETS and Oxidative Phosphorylation HMP
Metabolism of Lipids: Anabolism(saturated and unsaturated),Catabolism(Alpha-oxidation, Beta-oxidation) and energetic of Lipid metabolism
Metabolism of Nucleic Acids:Catabolism and anabolism of purine and pyrimidine nucleotides

Module-IV (8 Hours)
Metabolism-II: Amino acid metabolism, triacylglycerol metabolism, ketogenesis, fatty acid biosynthesis, cholesterol biosynthesis Protein synthesis: Initiation, elongation, termination, control of gene expression, regulation of Lac operon, RNA processing, Recombinant DNA, Transcription & Translation, Reverse Transcription, Replication.

Module-V (8 Hours)
Enzyme-II:M-M-Kinetics, Isozymes and Allosteric enzymes, Isolation techniques &Spectrophtometric assay of enzyme activitymedical and diagnostic applications of enzyme, Coenzyme, Apozyme, Holozyme.

Books:

- Biochemistry- The Molecular Basis of Life, Trudy McKee & James R. McKee, Oxford University Press
- Bio-Physics – Roland Glaser- Springer; 2nd printing edition (November 23, 2004)
- The Biomedical Engineering Hand Book- 3rd Ed- (Biomedical Engineering Fundamentals) - Joseph D. Bronzino – CRC –Tylor-Francis – 2006 (Section- III – Bio-Electrical Phenomena)
- Biochemistry: Lehninger Principles of Biochemistry, Fourth Edition - by David L. Nelson & Michael M.Cox , - W. H. Freeman; 4 edition (April 23, 2004)
- Fundamentals of Biochemistry: Life at the Molecular Level - by Donald J. Voet , Judith G. Voet& Charlotte W.Pratt.-Wiley;2edition(March31,2005