

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Earth Science)
Semester: I
Syllabus with Effect from: June - 2014

Paper Code: PT01CESC03	Total Credit: 4
Title Of Paper: Elements of Biological Sciences	

Unit	Description in Detail	Weightage (%)
I	Cell, Membrane structure and Function Prokaryotic and Eukaryotic Cell, Microscopy, Cell fractionation, Nucleus, Endoplasmic reticulum, Golgi apparatus, Lysosomes, Mitochondria, Cytoskeleton (microtubules, Microfilament, Intermediate Filaments) Membrane structure and Function: Membrane Models, Selective permeability, Active and passive transport, Exocytosis and endocytosis.	25%
II	Molecular and Chromosomal basis of inheritance Molecular basis of inheritance: DNA- as genetic material experimental evidence, Organisation of Chromosome, DNA replication and repair. Chromosomal basis of Inheritance: Mendelian inheritance, Morgan's experiment, Sex Linked inheritance, Linked Genes, Genomic imprinting, Genetic Disorders.	25%
III	Genes to Protein and Cell Cycle Genes to Protein: Basic Principles of Transcription and Translation, Genetic Code, Mutation Cell Cycle: Cell division, phases of Cell cycle, Cell Cycle control system.	25%
IV	Biomolecules and Metabolism: Biological Molecules: Carbohydrates, Lipids, Proteins, DNA, RNA structure and function. Stages of Cellular respiration, Catabolic pathways (Glycolysis, TCA cycle), redox reaction, Chemiosmosis.	25%

Basic Text & Reference Books:-

- Biology, CAMPBELL.REECE (Eight Edition)
- Biology, Raven
- Life: Science of Biology, Sadva

