

SARDAR PATEL UNIVERSITY
Programme: MSC (Applied Science)
Semester: I
Syllabus with effect from: June 2013

Paper Code: PT01CASC03	Total Credits: 4
Title Of Paper: Elements of Biological Sciences	

Unit	Description in detail	Weightage (%)
1	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 %
2	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 %
3	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 %
4	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

