

## Books:-

S.No.	Name of Books/ Author/Publisher
1	Probability and Statistics for Engineers and Scientists by Ross, S.M., 3rd ed. Publisher: Academic Press, (2005).
2	Numerical Methods for Scientific and Engg... Computations: M.K.Jain, S.R.K. Iyenger and R.K. Jain., New Age International (1993)
3	Advanced Engineering Mathematics, Erwin Kreyszig, 10th, 2010, Wiley edition

## Details of course:-

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Cell Biology (BT 203 )	3	1	0	Knowledge of biomolecules

Course Objective: To impart basic knowledge of cell and its mechanistic features for better understanding of other subjects.

### Course Outcome:

1. To compare and contrast prokaryotic and eukaryotic cellular architecture and understand the mechanisms behind cell motility
2. To explain the underlying mechanism of cell cycle, cell division and programmed cell death.
3. To comprehend cell communication mechanisms
4. To understand the process of protein targeting to various organelles
5. To get insight into the causes of cancer and to devise strategies for specifically targeting cancer cells

S.No.	Content	Contact Hours
Unit 1	Cell structure: Structure of prokaryotic and eukaryotic cells; Functions of various organelles; Cytoskeletal elements	9
Unit 2	Cell Cycle and Cell Division: Molecular events in cell cycle; Regulators of cell cycle; Control of mitosis and meiosis; Apoptosis: Mechanism; Roles of Bcl family of proteins, caspases and cytochrome c	8
Unit 3	Cell-Cell interactions: Cell junctions; Cell adhesion molecules; Extracellular matrix; Signal transduction: Types of signaling; Signals and Receptors; Secondary messengers; Intracellular signaling proteins; Signaling through cell surface receptors	9
Unit 4	Protein sorting: Transport of proteins to various organelles; Secretory pathway; Vesicular trafficking; Transport across membranes; Receptor mediated endocytosis	8

Unit 5	Cancer: General concepts; Targeted therapies; Roles of protooncogenes and tumor suppressor genes; pRb and p53	8
	Total	42

Books:-

S.No.	Name of Books/ Author/Publisher
1.	Cell and Molecular Biology by P Khanna. Publisher: IK Intl.
2.	Karp's Cell and Molecular Biology by G Karp, J Iwasa, W Marshall. Publisher: John Wiley and Sons, Inc.
3.	The Cell: A Molecular Approach by GM Cooper, RE Hausman. Publisher: Sinauer Associates Inc.
4.	Molecular Biology of the Cell by B Alberts, R Heald, A Johnson, D Morgan, M Raff, K Roberts, P Walter. Publisher: Garland Science
5.	Molecular Cell Biology by H Lodish, A Berk, CA Kaiser, M Krieger, A Bretscher. Publisher: WH Freeman