Molecular Cell Biology - Web course

COURSE OUTLINE

The course is meant for post-graduate students. The course covers most of the important aspects of cell biology at a molecular level which include the structure and functions of cell organelles, transport of biomolecules, methods to study biomolecules and visualize cells, signal transduction pathways, molecular biology of cancer and infection.

COURSE DETAIL

Module No.	Topic/s	Lectures
1	Prokaryotic and eukaryotic cells	2
2	Nuclear structure, nucleolus, nuclear transport and chromatin packing	2
3	Microtubule, actin and filament based motile systems	2
4	Membrane organization and transport across membranes	3
5	Methods to manipulate protein, DNA and RNA and methods to visualize cells	2
6	cell division, cell cycle, cell growth and differentiation, programmed cell death	5
7	cell signaling mechanisms	12
8	cell-cell recognition and adhesion	1
9	Molecular basis of cancer, oncogenes and tumor suppressor genes	7
10	Cell biology of infection	4
	Total	**40**

References:

NP-TEL

NPTEL

http://nptel.ac.in

Biotechnology

Pre-requisites:

Basics in modern biology

Additional Reading:

1. Molecular biology of the gene, 6th edition, Watson, becker et al., Pearson Education
2. The biology of cancer, R. A. Weinberg, Garland Science
3. Genes VII, Benjamin Lewin

Coordinators:

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1. Molecular Biology of the cell 5th Edition, Bruce Alberts et al Garland Science
2. Molecular Cell Biology, 6th Edition, Lodish et al, W.H Freeman
3. Cell and Molecular Biology, Karp G, John Wiley and Sons