

IISER Pune - Course Content

Semester	JAN 2024
Open to Semester	4
Course Code	BI2213
Course title	Cell Biology (E)
Nature of Course	LE - Lecture
Credit	3
Coordinator and participating faculty (if any)	Dr. Nagaraj Balasubramanian Dr. Thomas Pucadyil
Pre-requisites	None
Objectives	This course will provide a detailed insight into advanced concepts of cellular structure and function. It also aims to give you a sense of the complex regulatory mechanisms that control cell function.
Course content	<p># This course covers a wide range of advanced cell biology topics discussing in some detail membrane structure and transport (4), intracellular compartments (4), protein sorting and vesicular traffic (4). It will look at mechanisms of cell communications, including signaling pathways from receptors at the membrane to intracellular signal propagation (6), cell junctions and adhesion to the extracellular matrix (4). It will also look at the role of the cytoskeleton and motor proteins in cellular processes (4). How many of these events are brought together in a cellular event like cell migration will be discussed (4). Finally it will also discuss cell cycle and cell division in context of the DNA replication (2).</p> <p># Student paper presentations will focus on techniques used to address major aspects of above cell functions (4) (In brackets the tentative number of lectures per topic)</p>
Evaluation / Assessment	10 (continuous assessment) 40 (Mid-Sem) 10 (continuous assessment) 40 (End-Sem)
Suggested readings	Text Book(s) 1) Molecular Biology of the Cell by Alberts, Johnson, Raff, Lewis et al.(2007) 5th Ed. Garland Science* 2) Molecular Biology of the Gene by James Watson et al., (2007) 6th Ed. Benjamin Cummings* 3) Molecular Cell Biology by Lodish, Berk, Kaiseretal. (2007)6th Ed.W.H.Freeman*
When Next	2025

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