Course title: Cell and molecular biology			
Course code: UBT 105	**No. of credits:** 2	**L-T-P:** 30-0-0	**Learning hours:** 30
Pre-requisite course code and title (if any): None			
Department: Department of Biotechnology			
Course coordinator(s): Prof. Ramakrishnan Sitaraman		**Course instructor(s):** Dr. Ramakrishnan Sitramanan Dr. Souren Paul	
Contact details: rkraman@terisas.ac.in			
Course type: Major		**Course offered in:** Semester 1	

Course description: Understanding life processes at the molecular level has revolutionized our approach to all areas of biology. An understanding of cell and molecular biology is therefore indispensable for the modern biologist, regardless of their eventual specialization. Accordingly, this foundational course provides an overview of the subject tailored for students of varying disciplinary backgrounds at the entry level to the FYUP/FYIPP in biotechnology.

The course commences with a brief introduction to the types of cellular organization within an evolutionary context. This is followed by a detailed review of the structure and expression of DNA and its central position as the genetic material. The concluding module reviews DNA replication at the molecular level in prokaryotes and eukaryotes, followed by a description of mutational processes and their importance for evolution by natural selection.

Course objectives:

1. To present an integrated overview of cellular organization and processes across the three kingdoms of life.
2. To embed learning about molecular biology within an evolutionary context.