



B. Tech Program in Bioengineering – Proposed Courses Department of Bioscience & Bioengineering



Program Core

- Biochemistry
- Microbiology
- Data Structure & Algorithm
- Concepts & Dynamics: Molecular Cell Biology
- The Human Immune System: Mechanisms to Detect, Defend and Attack
- Biosensors
- Bioimaging
- Biomaterials Engineering
- Biophysics & Structural Biology
- Genetics & Gene Manipulation
- Deep Learning
- Introductory Omics
- Computational Systems Biology

Elective Bouquets

Omics

- Microbiomes and Metagenomics
- Computational Methods for Multi-Omics
- Microarray Data Analysis

Elective Bouquets

Biomaterials Engineering

- Cell-Material Interactions
- Tissue Engineering
- Therapeutic Delivery Systems
- Principles of Biomechanics

Biosensors

- Whole Cell-based Biosensors
- Special Topics In Biosensors
- Introduction To MEMS Technology Chemosensors

Bioimaging

- Image processing
- Electron microscopy for Biology
- Special topics in biomedical imaging

Drug Designing and Development

- Principles of Drug Discovery
- Medicinal Chemistry
- Modern Approaches for Drug Designing

Elective Bouquets

Computational Systems Biology

- Mathematical Biology
- Algorithms in biology
- Metabolic Flux Balance Analysis
- Design of Experiments

Microbial Systems for Sustainable Development

- Microbial Remediation and Environmental Biotechnology
- Microbes in food and sustainable Agriculture
- Bioenergy