

M Tech in Bioscience & Bioengineering

Cat.	Course Title	L-T-P-D	Credits
I Semester			
C	Microbiology & Biochemistry	3-0-2-0	4
C	Cell & Molecular Biology	2-0-2-0	3
C	Human Physiology	3-0-0-0	3
OE	Open Elective 1	3-0-0-0	3
PE	Program Elective	3-0-2-0	4
PE	Program Elective	2-0-0-0	2
Total			19

Cat.	Course Title	L-T-P	Credits
II Semester			
C	Plant Physiology & Pathology	2-0-0-0	2
C	Disease Biology	2-0-0-0	2
C	Statistics & Data Analysis	2-0-2-0	3
OE	Open Elective 2	3-0-0-0	3
PE	Program Elective	2-0-0-0	2
PE	Program Elective	3-0-2-0	4
Total			16

Cat.	Course Title	L-T-P-D	Credits
III Semester			
PE	Program elective	3-0-2-0	4
PE	Program Elective	2-0-0-0	2
TH	Project	0-0-0-6	6
Total			12

Cat.	Course Title	L-T-P-D	Credits
IV Semester			
TH	Project	0-0-0-10	10
Total			10

Program elective set 1- Bioimaging

Imaging Instrumentation & Acquisition
Signal processing & Analysis
Image processing & analysis

Program elective set 2 Multi-omics

Omics Instrumentation
Omics Technologies

Data preprocessing & Storage Algorithm development
Program elective set 3- Biosensors Sensor types & technologies Sensor fabrication & microfluidics Sensor signal analysis & statistics Signal amplification, read out electronics & Data interpretation
Program elective set 4-Systems Biology Mathematical Modeling & Simulations Thermodynamics & Enzyme kinetics Graph theory & Networks Genetic & Metabolic Engineering Synthetic Biology
Program elective set 5-Bio-materials Engineering Sensor materials Computational modeling in material design Material characterization Material properties Biophysics Biomechanics Tissue Engineering Medical devices and Implants
Program Elective set 6- Artificial Intelligence in Bioengineering Pre-processing of Data Supervised Learning Unsupervised Learning Applications in Multi Omics data, Imaging, Sensors