

13. Courses of Study and Scheme of Assessment
M.TECH BIOTECHNOLOGY

(2015 REGULATIONS)
 (Minimum No. of credits to be earned: 74)

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
I SEMESTER									
15BT01	Biostatistics	3	0	0	3	50	50	100	FC
15BT02	Process Engineering Principles	2	2	0	3	50	50	100	FC
15BT03	Genetic Engineering and Recombinant Products	3	0	0	3	50	50	100	PC
15BT04	Tools and Algorithms in Bioinformatics	3	2	0	4	50	50	100	PC
15BT05	Protein Chemistry and Engineering	3	0	0	3	50	50	100	PC
15BT51	Recombinant DNA Laboratory	0	0	4	2	100	-	100	PC
15BT61	Industry Visit & Technical Seminar	0	0	2	1	100	-	100	EEC
Total 24 Hrs		14	4	6	19	450	250	700	
II SEMESTER									
15BT06	Instrumental Methods of Analysis	3	2	0	4	50	50	100	PC
15BT07	Bioprocess Engineering	2	2	0	3	50	50	100	PC
15BT08	Separation Technology	3	0	0	3	50	50	100	PC
15BT09	Technologies and Strategies in OMICs Research	3	0	0	3	50	50	100	PC
15BT10	Tissue Engineering	3	0	0	3	50	50	100	PC
15BT_	Professional Elective 1	3	0	0	3	50	50	100	PE
15BT52	Bioprocess Laboratory	0	0	4	2	100	-	100	PC
Total 25 Hrs		17	4	4	21	400	300	700	
III SEMESTER									
15BT_	Professional Elective 2	3	0	0	3	50	50	100	PE
15BT_	Professional Elective 3	3	0	0	3	50	50	100	PE
15BT_	Professional Elective 4	3	0	0	3	50	50	100	PE
15BT_	Professional Elective 5	3	0	0	3	50	50	100	PE
15BT_	Professional Elective 6	3	0	0	3	50	50	100	PE
15BT53	High Throughput OMICs Data Analysis Laboratory	0	0	4	2	100	-	100	PC
15BT71	Project Work I	-	-	6	3	100	-	100	EEC
Total 25 Hrs		15	0	10	20	450	250	700	
IV SEMESTER									
15BT72	Project Work II	-	-	28	14	100	-	100	EEC
Total 28 Hrs		0	0	28	14	100	-	100	
ELECTIVE THEORY COURSES (Six to be opted)									
15BT21	Immunotechnology	3	0	0	3	50	50	100	PE
15BT22	Metabolic Engineering	3	0	0	3	50	50	100	PE
15BT23	Cellular and Molecular Mechanism of Neurodegenerative Disorders	3	0	0	3	50	50	100	PE
15BT24	Membrane Separation	3	0	0	3	50	50	100	PE
15BT25	Microfluidics	3	0	0	3	50	50	100	PE
15BT26	Bioreactor Designs	3	0	0	3	50	50	100	PE
15BT27	Biomaterials in Tissue Engineering	3	0	0	3	50	50	100	PE
15BT28	Biofuels	3	0	0	3	50	50	100	PE
15BT29	Industrial Waste Management	3	0	0	3	50	50	100	PE
15BT30	Stress Tolerance in Plants	3	0	0	3	50	50	100	PE
15BT31	Pharmacogenomics	3	0	0	3	50	50	100	PE
15BT32	Advanced Topics in Plant Molecular Biology	3	0	0	3	50	50	100	PE
15BT33	Techniques in Epidemiological Data Analyses	3	0	0	3	50	50	100	PE
15BT34	Introduction to Pharmaceutical Sciences	3	0	0	3	50	50	100	PE

15BT35	Techniques In Molecular Subtyping of Pathogens	3	0	0	3	50	50	100	PE
15BT36	Chemical Engineering Design	3	0	0	3	50	50	100	PE
15BT37	Quality Assurance, Industrial and Bio-Safety	3	0	0	3	50	50	100	PE
15BT38	Metagenomics and Epigenomics	3	0	0	3	50	50	100	PE
15BT39	Molecular and Cellular Biomechanics	3	0	0	3	50	50	100	PE
15BT40	Systems Biology: Theory and Applications	3	0	0	3	50	50	100	PE

* Indicated is the minimum number of credits to be earned by a student.

CAT – Category; FC – Foundation Course; PC – Professional Core; PE - Professional Elective

EEC – Employability Enhancement Course

ONE CREDIT COURSES

15BK01	Herbal Medicines
15BK02	Biospectroscopy I
15BK03	Biospectroscopy II
15BK04	Biocatalysis and Biotransformation
15BK05	Sensory attributes of food
15BK06	Microarray and next generation sequence analysis
15BK07	Directed Evolution for Enzyme Engineering

SCIENCE ELECTIVES

15ID01	Micro Electro Mechanical Systems (MEMS)
15ID02	Sensors for Engineering Applications
15ID03	Laser Processing of Materials
15ID04	Plasma Technology
15ID05	Nanosensor and its Applications
15ID06	Nano Magnetism and Spintronics
15ID07	Corrosion Science and Engineering
15ID08	Instrumental Methods of Chemical Analysis
15ID09	Polymer Science and Technology
15ID10	Nanomaterials and Nanotechnology
15ID11	Thin Film Technology

HUMANITIES AND LANGUAGES ONE CREDIT COURSES

15OK01	Research Writing in Engineering Sciences
15OK02	Indian Ethos and Human Values
15OK03	Personality Development
15OK04	Financial Accounting and Cost Accounting