B.Tech. Biotechnology (2025-26) onwards (160 Credits)

Semester-III						Semester-IV					
Code	**Course Name**	**L**	**T**	**P**	**C**	**Code**	**Course Name**	**L**	**T**	**P**	**C**
MEE2001	Engineering Economics	3	0	0	3	MAS2001	Statistics & Probability	3	0	0	3
MBB21XX	Management of Technology	3	0	0	3	BIT2201	Genetics and Molecular Biology	3	1	0	4
BIT2101	Cell and Microbiology	3	1	0	4	BIT2202	Bioreaction Engineering and Bioenergetics	3	0	3	4
BIT2102	Biochemistry	3	0	3	4	XXX22XX	Flexi Core 2	3	1	0	4
BIT2103	Transport Processes in Biological Systems	3	1	0	4	BIT22XX	Program Elective 1	3	0	0	3
XXX21XX	Flexi Core 1	3	1	0	4	XXX00XX	Open Elective 1	3	0	0	3
BIT2130/ XXX21XX	Simulation Lab 1 / Data Structures and Algorithms Lab	0	0	2	1	BIT2230/ XXX22XX	Simulation Lab 2/Relational Database Management Systems Lab	0	0	2	1
BIT2131	Cell and Microbiology Lab	0	0	2	1	BIT2231	Genetics and Molecular Biology Lab	0	0	2	1
BIT2170	Project-based Learning 1	0	0	2	1	BIT2270	Project-based Learning 2	0	0	2	1
Total		**18**	**3**	**9**	**25**	**Total**		**18**	**2**	**9**	**24**
Total contact hours		**30**				**Total contact hours**		**29**			
Semester-V						Semester-VI					
Code	**Course Name**	**L**	**T**	**P**	**C**	**Code**	**Course Name**	**L**	**T**	**P**	**C**
BIT3101	Bioinformatics	3	0	2	4	BIT3201	Immunology and Immunotechnology	3	1	0	4
BIT3102	Bio-separation Processes	3	1	0	4	BIT32XX	Program Elective 4	3	0	0	3
XXX31XX	Flexi Core 3	3	1	0	4	BIT32XX	Program Elective 5	3	0	0	3
BIT31XX	Program Elective 2	3	0	0	3	BIT32XX	Program Elective 6	3	0	0	3
BIT31XX	Program Elective 3	3	0	0	3	XXX00XX	Open Elective 3	3	0	0	3
XXX00XX	Open Elective 2	3	0	0	3	BIT3202	Professional Practice	0	0	2	1
BIT3130/ XXX31XX	Simulation Lab 3/Object Oriented Programming Lab	0	0	2	1	BIT3230	Immunology and Immunotechnology Lab	0	0	4	2
BIT3131	Bio-separation Processes Lab	0	0	3	1						
BIT3170	Project-based Learning 3	0	0	2	1	BIT3270	Project-based Learning 4	0	0	6	3
Total		**18**	**2**	**9**	**24**	**Total**		**15**	**1**	**10**	**22**
Total contact hours		**29**				**Total contact hours**		**26**			

Semester-VII		L	T	P	C	Semester-VIII		L	T	P	C
Code	Course Name					Code	Course Name				
BIT41XX	Program Elective 7	3	0	0	3	BIT4270	Major Project	0	0	24	12
BIT41XX	Program Elective 8	3	0	0	3						
XXX00XX	Open Elective 4	3	0	0	3						
XXX00XX	Open Elective 5	3	0	0	3						
BIT4170	Internship (Industry or Research)	0	0	2	1						
Total		12	0	2	13	Total		0	0	24	12
Total contact hours		14				Total contact hours		24			

Program Electives / Discipline Specific Electives			
Semester-III		Semester-IV	
Code	Course Name	Code	Course Name
BIT2240	Analytical Techniques in Biotechnology	BIT3040	Genetic Engineering
BIT2241	Food Biotechnology	BIT3140	Biomaterials
Semester-V		Semester-VI	
Code	Course Name	Code	Course Name
BIT3040	Genetic Engineering	BIT4140	Recombinant DNA Technology
BIT3041	Animal and Plant Biotechnology	BIT4141	Drug Discovery
BIT3240	Nano-Bioengineering	BIT4142	Genomics and Proteomics
BIT3241	Stem Cell Technology	BIT4143	Bioremediation
BIT3242	Tissue Engineering	BIT3280	Pharmaceutical Biotechnology (Honors)
BIT3243	Biotherapeutics		
BIT3180	Research Methodology(Honors)		

Semester-VII		Semester-VIII	
Code	Course Name	Code	Course Name
BIT4180	Pharmacognosy and Metabolic Engineering (Honors)	BIT4280	Honors Project
BIT4181	Legal and Regulatory issues in Biotechnology		

Flexi Cores /Generic Electives			
Semester-III		Semester-IV	
Code	Course Name	Code	Course Name
BIT2120	Process Calculations	BIT2220	Bioprocess Engineering
XXX21XX	Data Structures and Algorithms	XXX22XX	Relational Database Management Systems
Semester-V		Semester-VI	
Code	Course Name	Code	Course Name
BIT3120	Bioprocess Plant Design		
XXX31XX	Object Oriented Programming		