

M Tech in Bioinformatics

SCHEME OF STUDY (wef July 2021)

First Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
MTH 516	Numerical Techniques, Statistical & Probabilistic Methods	3	-	-	3
BI 511	Bioinformatics Computing	3	-	-	3
BI 512	Biological Databases and their Management	3	-	-	3
BI 513	Biomathematics	3	-	-	3
HUM 511	Communication Skills	2	-	-	2
	Elective-1 (A)	3	-	-	3
	Elective-2 (B)	3	-	-	3
BI 514	Lab Practice-I	-	-	2	1
BI 515	Seminar-I	-	-	2	1
Total Hours: 24 Total Credits: 22		Total Semester Credits			22

Second Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
BI 521	Data Mining, Data Analytics & Data Warehousing in Bioinformatics	3	-	-	3
BI 522	Bio-Modeling & Simulation	3	-	-	3
BI 523	Optimization Techniques & Graph Theory	3	-	-	3
	Elective-3 (A)	3	-	-	3
	Elective-4 (A)	3	-	-	3
	Elective-5 (C)	3	-	-	3
MTH 524	Research Methodology	1	1	-	2
BI 525	Lab-II	-	-	2	1
BI 526	Seminar-II	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credits			22

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Third Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
BI 611	Dissertation Phase - I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
BI 621	Dissertation Phase - II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

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List of Program Electives A		List of Open Electives C	
BI551	Molecular Biology & Molecular Genetics	ARP - 581	Introduction to Urban Planning
BI552	Data Structure & Algorithms in C	BSE – 581	Bioprocess Engineering
BI553	Genome Informatics & Proteome Informatics	BSE – 582	Biophysics Tools and Techniques
BI554	Metabolome Informatics	CHE – 581	Analytical Techniques
BI555	Bio-Inspired Artificial Intelligence & Soft computing Techniques	CHE – 582	Green Technology & Processes
BI556	Algorithms & DevOps Tools in Bioinformatics	CE – 581	Solid Waste Management
BI557	Data Analysis in Biology & Evolution	CE – 582	Basic Concept of GIS
BI558	Neuroinformatics	CE – 583	Road Safety
BI559	Immuno informatics	CSE – 581	Machine Learning
BI560	Exposome Informatics	CSE – 582	Advanced Data Structures and Algorithms
BI561	Agrobiinformatics	PHY – 581	Nanotechnology and Nanoscience
BI562	Environmental Informatics	EE – 581	Electric Machines & Applications
BI563	Epigenome Informatics	EE – 582	Control and Instrumentation
BI564	Health Informatics	ECE – 581	Introduction to Fuzzy Logic
BI565	Transcriptome and Translatome Informatics	ECE – 582	Neural Networks and its Applications
BI566	Computational Biology & Computational Biochemistry	EC - 581	Energy Resource Technologies
BI567	Artificial Intelligence, Soft Computing & Neural Networks	HUM – 581	Intellectual Property Rights for Engineers
BI568	Fuzzy Sets & Models in Biology	HUM – 582	Applied Psychology: Human Centered Design and Engineering
BI569	Computational Metagenomics	ME – 581	Value Engineering
BI570	Computational Models for Biological Networks & Molecular Pathways	ME – 582	Design Thinking
BI571	Data Security & Data Reliability	ME - 583	Mechatronics and NDT in Engineering
	List of Departmental Electives B	MME – 581	Advanced Instrumentation Methods for Material Analysis
CSB566	Chemo informatics & Drug Design	MME – 582	Smart Materials and their Application
CSB567	Machine Learning Techniques in Bioinformatics	MBA-581	Engineering Startup Management
CSB568	Network Biology		
CSB569	Reactome and Interactome informatics		
CSB570	Biological Data Science		