

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

Department of Biological Science & Engineering

M. Tech in Biotechnology

SCHEME OF STUDY (w.e.f July 2024)

First Semester

Course No.	Subject	Scheme of Studies Periods			Total Credits
		Per week			
		L	T	P	
BIO - 511	Biostatistics & Bioinformatics	3	-	-	3
BIO- 512	Molecular Biology	3	-	-	3
BIO-513	Protein Engineering & Enzyme Technology	3	-	-	3
BIO XXX	Department Elective -1	3	-	-	3
BIO XXX	Department Elective -2	3	-	-	3
BIO-515	Lab 1- Molecular Biology and Genetic Engineering	-	-	2	1
BIO-516	Lab 2- Protein Engineering	-	-	2	1
BIO-517	Seminar-I	-	-	2	1
BIO-518	Minor Project-1 (Self Learning)				2
HUM xxx	*Communication Skills	-	-	-	-
Total Hours : 23			Total Semester		20
Total Credits : 20			Credits		

* Non-Credit course/Audit course.

Second Semester

Course No.	Subject	Scheme of Studies Periods			Total Credits
		Per week			
		L	T	P	
BIO-521	Instrumentation in Biotechnology	3	-	-	3
BIO- 522	Biochemistry & Physiology	3	-	-	3
BIO XXX	Department Elective -3	3	-	-	3
BIO XXX	Department Elective -4	3	-	-	3
XXX XXX	Open Elective	3	-	-	3
BIO-523	Lab 3- Cheminformatics and Drug Designing	-	-	2	1
BIO-524	Lab 4- Cell and Tissue Engineering	-	-	2	1
BIO-525	Seminar-II	-	-	2	1
BIO-526	Minor Project-2 (Self Learning)				2
Total Hours : 23			Total Semester Credits		20
Total Credits : 40					

Third Semester

Course No.	Subject	Scheme of Studies Periods Per week			Total Credits
		L	T	P	
BIO-531	Dissertation Phase-I	-	-	40	20
Total Hours : 40 Total Credits : 60		Total Semester Credits 20			

Fourth Semester

Course No.	Subject	Scheme of Studies Periods Per week			Total Credits
		L	T	P	
BIO- 532	Dissertation Phase-II	-	-	40	20
Total Hours : 40 Total Credits : 80		Total Semester Credits 20			

List of Program Electives A		List of Open Electives C	
BIO 551	Bio safety and Bio security Regulations	ARP-581	Introduction to Urban Planning
BIO 552	Genetic Engineering	CHE-581	Analytical Techniques
BIO 553	Genomics & Transcriptomics	CHE-582	Green Technology & Processes
BIO 554	Industrial Biotechnology	CE-581	Solid Waste Management
BIO 555	Biochemical Engineering	CE-582	Basic Concept of GIS
BIO 556	System Biology	CE-583	Road Safety
BIO 557	Molecular & Cellular Diagnosis	CSE-581	Machine Learning
BIO 558	Environmental Biotechnology	CSE-582	Advanced data Structures and Algorithms
BIO 559	Cheminformatics & Drug Designing	PHY-581	Nanotechnology and Nanoscience
BIO 560	Cell Biology	EE-581	Electric Machines & Applications
BIO 561	Microbiology & Immunology	EE-582	Control and Instrumentation
BIO 562	Bioenergy Engineering	ECE-581	Introduction to Fuzzy Logic
BIO 563	Computational Advancements in Biotechnology	ECE-582	Neural Networks and its Applications
BIO 564	Biodiversity and Bioprospecting	EC-581	Energy Resource Technologies
BIO 565	Molecular Biotyping	HUM-581	Intellectual Property Rights for Engineers
BIO 566	Cell & Tissue Culture Engineering	HUM-582	Applied Psychology : Human Centred Design and Engineering
BIO 567	Research Methodology	MTH-581	Advanced Operations Research
BIO 568	Bionanotechnology	MTH-582	Computing Technologies
		ME-581	Value Engineering

BIO 569	Bio-Entrepreneurship	ME-582	Design Thinking
BIO 570	Pharmaceutical Biotechnology	ME-583	Mechatronics and NDT in Engineering
		MME-581	Advanced Instrumentation Methods for Material Analysis
		MME-582	Smart Materials and their Application
		MBA-581	Engineering Start up Management