

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI
REVISED COURSE STRUCTURE - To be effective from academic session 2022-23
Based on CBCS & OBE Model Recommended scheme of study for M.Tech Biotechnology

SEMESTER / Session of Study (Recommended)	Course Level	Category of Course	Course Code	Courses	Mode of delivery & credits <i>L-Lecture; T-Tutorial;P-Practicals</i>			Total Credits <i>C- Credits</i>
					L <i>(Periods/week)</i>	T <i>(Periods/week)</i>	P <i>(Periods/week)</i>	C
				THEORY				
FIRST / Monsoon		Programme Core (PC)	BE501	Advanced Bioprocess Engineering	3	0	0	3
			BE502	r-DNA Tech. & Genetic Engineering	3	0	0	3
			BE503	Advanced Reaction Engineering	3	0	0	3
		Programme Elective (PE)		PE I	3	0	0	3
				PE II	3	0	0	3
		LABORATORIES						
	Fifth	Programme Core (PC)	BE504	Bioprocess Engineering Lab	0	0	4	2
			BE505	r-DNA Technology Lab	0	0	4	2
			MT132	Communication Skills I	0	0	3	1.5
		TOTAL						
SECOND/ Spring	Fifth	Programme Core (PC)	BE506	Bioprocess Plant Design	3	0	0	3
			BE507	Advanced Bioseparation Engineering	3	0	0	3
			BE508	Biophysics	3	0	0	3
			BE601	IPR, Biosafety & Bioethics	3	0	0	3
		Programme Elective (PE)		PE III	3	0	0	3
		LABORATORIES						
	Fifth	Programme Core (PC)	BE509	Bioprocess Plant Design Lab	0	0	4	2
			BE510	Bioseparation Engineering Lab	0	0	4	2
			MT133	Communication Skills II	0	0	3	1.5
		TOTAL						
THIRD / Monsoon	Sixth	Programme Core (PC)		Thesis (Part I)				8
		Open Elective (OE)		OE I / MOOC				3
				OE II / MOOC				3
		TOTAL						
FOURTH/ Spring	Sixth	Programme Core (PC)		Thesis (Part II)				16
		TOTAL						
GRAND TOTAL FOR M.TECH PROGRAMME (41 + 30)								71

** Programme Core and Programme Elective brought to 1st and 2nd semester for restructuring may be interchanged, if required.*

ELECTIVE	CODE	SUBJECT
PE 1	BE 511	Environmental Biotechnology
	BE 512	Modern Methods of Instrumentation
	BE 513	Animal Cell Culture
PE 2	BE 515	Process Biotechnology
	BE 516	Stem Cells & Tissue Engineering
	BE 517	Protein Engineering
PE 3	BE 602	Advances in Nanobiotechnology
	BE 603	Metabolic Engineering
	BE 604	Biosimulation and Modelling

OE 1	BE 518	Biomedical Instrumentation
OE 2	BE 602	Advances in Nanobiotechnology