

**APPENDIX 5**

First Year - Semester I												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	MBT42MML501	Molecular Cell Biology	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML502	Biostatistics and data analysis	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML503	Biochemistry and Enzymology	Lecture	2	2	-	30	20	50		8	20
MM	MBT42MML504	Microbiology and Immunotechnologies	Lecture	3	3	-	60	40	100		16	40
ME	MBT42MEP501 MBT42MEP502	Bioindustry Lab (Practical) Fermentation Lab	Practical	2	-	4	30	20	50		8	20
ME	MBT42MEP503 MBT42MEP504	Bios kill Lab (Practical) Biochemistry Lab	Practical	2	-	4	30	20	50		8	20
MM	MBT42MMJ501	Mini Project	Project	2	-	4	30	20	50		8	20
RM	MBT42RML501	Research Methodology	Lecture	4	4	-	60	40	100		16	40
Total				21	15	12	360	240	600		96	240

First Year - Semester II												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	MBT42MML505	Cell Culture Technology	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML506	Editing life: genetic engineering and synthetic biology	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML507	Industrial Biotechnology: Enzymes, Biochemical's and Biomaterials	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML508	Bioinformatics and computational Biology	Lecture	3	3	-	60	40	100		16	40
ME	MBT42MEP505 MBT42MEP506	1. Exploration Biotechnology (Practical) Cell Culture Lab	Practical	2	-	4	30	20	50		8	20
ME	MBT42MEP507 MBT42MEP508	1. Biofactory Laboratory (Practical) Bioinformatics Lab	Practical	2	-	4	30	20	50		8	20
MM	MBT42MMJ502	Micro Project	Project	2	-	4	30	20	50		8	20
FP	MBT42FPJ501	Field Project	Project	4	-	8	100		100	40		40
Total				22	12	20	430	220	650	40	88	260

**Second Year - Semester III**

Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			
					L	P	Internal	External	Total	Internal	External	Total	
MM	MBT42MML601	Protein Engineering for Industrial Biotechnology	Lecture	3	3	-	60	40	100		16	40	
MM	MBT42MML602	Cell Culture Engineering: Recombinant Protein Production	Lecture	3	3	-	60	40	100		16	40	
MM	MBT42MML603	Genomics, Proteomics and Metabolomics	Lecture	3	3	-	60	40	100		16	40	
MM	MBT42MMP601	Bioinnovation Lab (Practical)	Practical	3	-	6	60	40	100		16	40	
MM	MBT42MMP602	Genomics and Proteomics lab	Practical	2	-	4	60	40	100		16	40	
ME		Major Elective Course (Basket)	Lecture	4	4		60	40	100		16	40	
RP	MBT42RPJ601	Research Project	Project	4	-	8	60	40	100		16	40	
Total					22	13	18	420	280	700		112	280

Second Year- Semester IV												
Course Category	Course Code	Course Title	Nature of Course	No. of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
MM	MBT42MML604	Environmental Biotechnology	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML605	Laboratories Accreditations and Auditing's	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MML606	Ethics/ Biosafety/ IPR	Lecture	3	3	-	60	40	100		16	40
MM	MBT42MMP602	Environmental Lab	Practical	3	-	6	60	40	100		16	40
ME		Major Elective Course (Basket)	Lecture	4	4	-	60	40	100		16	40
RP	MBT42RPJ602	Research Project	Project	6	-	12	120	80	200		32	80
<b>Total</b>				22	13	18	420	280	700		112	280

**Major Elective course (III semester)**

<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>
1	MBT42MEL601	Zoonotic Diseases: Interaction with Human, Plant, and Animals
2	MBT42MEL602	Human, Plant, and Bacterial Viruses
3	MBT42MEL603	Industrial Technology (Microbiology and Biotechnology)
4	MBT42MEL604	Nanotechnology in Life Sciences

**Major Elective Course (IV semester)**

<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>
1	MBT42MEL605	Evolutionary analysis and metagenomics
2	MBT42MEL606	Biostatistics and Big Data Analysis
3	MBT42MEL607	Basics of Breeding Technology
4	MBT42MEL608	Pharmaceutical microbiology and biotechnology