APPENDIX 7

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	MBM42MML501	MySQL, data warehousing, Cloud computing with AWS	**L**	3	3	-	60	40	100		16	40
MM	MBM42MML502	Bioinformatics and Biological Database	**L**	4	4	-	60	40	100		16	40
MM	MBM42MML503	Molecular Cell Biology	**L**	3	3	-	60	40	100		16	40
MM	MBM42MML504	Programming for Bioinformatics (R, Python & Julia)	**L**	2	2	-	30	20	50		8	20
RM	MBM42RML501	Research Methodology	**L**	4	4	-	60	40	100		16	40
ME	MBM42MEP501	1.Bio Lab (Practical)	**P**	2	-	4	30	20	50		8	20
ME	MBM42MEP502	2.Molecular lab	**P**									
ME	MBM42MEP503	1.Bioinformatics Lab (Practical)	**P**	2	-	4	30	20	50		8	20
ME	MBM42MEP504	2.Biodata Mining lab	**P**									
MM	MBM42MMJ501	Mini Project	**J**	2		4	30	20	50		8	20
Total				**22**	**16**	**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	MBM42MML505	Statistical Methods in Bioinformatics	**L**	3	3	-	60	40	100		16	40
MM	MBM42MML506	Sequence Analysis, Transcriptomics and Gene Expression Analysis	**L**	3	3	-	60	40	100		16	40
MM	MBM42MML507	Structural biology & Bioinformatics	**L**	3	3	-	60	40	100		16	40
MM	MBM42MML508	R & Python language and Data Science, Introduction to quantum computing	**L**	3	3	-	60	40	100		16	40
MM	MBM42MEP505	1. Computational Bioinformatics lab (Practical)	**P**	2	-	4	60	40	100		16	40
ME	MBM42MEP506	2.RDT Lab	**P**									
ME	MBM42MEP507	1. Algorithm design and analysis with python & Julia (Practical)	**P**	2	-	4	30	20	50		8	20
ME	MBM42MEP508	2.R lab	**P**									
MM	MBM42MMJ502	Micro Project	**J**	2		4	30	20	50		8	20
FP	**MBM42FPJ501**	Field Project	**J**	4		8	100		100	40		40
Total				**22**	**12**	**20**	**460**	**240**	**700**	40	**96**	**280**

Second Year- Semester III												
Course Categoryry	**Course Code**	**Course Title**	**Nature of Course**	**No.of Credits**	**Teachingg (Contact hrs/ week)**		**Evaluation Scheme (Marks)**			**Minimum Passing(Marks)**		
					L	**P**	Internal	External	Total	Internal	External	Total
MM	MBM42MML601	Machine learning, Deep learning and artificial Intelligence for BI	Lecture	3	3	-	60	40	100		16	40
MM	MBM42MML602	System Biology and Network Analysis	Lecture	3	3	-	60	40	100		16	40
MM	MBM42MML603	Data Mining and Machine learning withTensor flow in BI	Lecture	3	3	-	60	40	100		16	40
MM	MBM42MMP601	AI & ML lab	Practical	3		6	60	40	100		16	40
MM	MBM42MMP602	Data Mining	Practical	2		4	60	40	100		16	40
ME		Major Elective course (Basket)	Lecture	4	4		60	40	100		16	40
RP	MBM42RPJ601	Research Project	Project	4	-	8	60	40	100		16	40
Total				22	13	18	420	280	700		112	280

Major Elective course

Sr.No	Course Code	Course Name
1	MBM42MEL601	Computational Systems Biology
2	MBM42MEL602	Human, Plant, and Bacterial Viruses
3	MBM42MEL603	Industrial Technology (Microbiology andBiotechnology)
4	MBM42MEL604	Nanotechnology in Life Sciences

Second Year- Semester IV												
Course Category	**Course Code**	**Course Title**	**Nature of Course**	**No. of Creditts**	**Teaching (Contact hrs/ week)**		**Evaluation Scheme(Marks)**			**Minimum Passing(Marks)**		
					L	**P**	**Internal**	**External**	**Total**	**Internal**	**External**	**Total**
MM	MBM42MML604	Genomics in Cloud	Lecture	3	3	-	60	40	100		16	40
MM	MBM42MML605	Laboratories Accreditations and Auditing	Lecture	3	3	-	60	40	100		16	40
MM	MBM42MML606	Ethics/ Biosafety/ IPR	Lecture	3	3		60	40	100		16	40
MM	MBM42MMP602	Genomics in Cloud Lab	Practical	3		6	60	40	100		16	40
ME		Major Elective course (Basket)	Lecture	4	4		60	40	100		16	40
RP	MBM42RPJ602	Research Project	Project	6	-	12	120	80	200		32	80
Total				22	13	18	420	280	700		112	280

Major Elective course

Sr.No	Course Code	Course Name
1	MBM42MEL605	Biostatistics and Big Data Analysis
2	MBM42MEL606	Evolutionary analysis and metagenomics
3	MBM42MML607	Basics of Breeding Technology
4	MBM42MML608	Pharmaceutical microbiology and biotechnology

APPENDIX 8