

M.Sc. Microbiology

First Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
24MIHT11	HT	T	Fundamentals of Microbiology & Bacteriology	3+1	3	40	60	100	4
24MIHT12	HT	T	Microbial physiology & Enzymology	3+1	3	40	60	100	4
24MIHT13	HT	T	Molecular Biology	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
24MIST14	ST	T	IPR, Biosafety and Bioethics	3+1	3	40	60	100	4
24MIST15	ST	T	Microbial Ecology & Biodiversity	3+1	3	40	60		
24MIHP16	HP	P	Microbiology Practical I	4	4	20	30	50	2
24MISP17	SP	P	Microbiology Practical II	4	4	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
24MIHT21	HT	T	Virology & Mycology	3+1	3	40	60	100	4
24MIHT22	HT	T	Industrial Microbiology	3+1	3	40	60	100	4
24MIHT23	HT	T	Food & dairy Microbiology	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
24MIST24	ST	T	Environmental Microbiology	3+1	3	40	60	100	4
24MIST25	ST	T	Techniques in Microbiology	3+1	3	40	60		
24MIHP26	HP	P	Microbiology Practical III	4	4	20	30	50	2
24MISP27	SP	P	Microbiology Practical IV	4	4	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To-tal	
24MIHT31	HT	T	Microbial Genetics	3+1	3	40	60	100	4
24MIHT32	HT	T	Immunology	3+1	3	40	60	100	4
24MIHT33	HT	T	Medical Microbiology	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
24MIST34	ST	T	Agricultural Micro- biology	3+1	3	40	60	100	4
24MIST35	ST	T	Soil Microbiology	3+1	3	40	60		
24MIHP36	HP	P	Microbiology Practical V	4	4	20	30	50	2
24MISP37	SP	P	Microbiology Practical VI	4	4	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/ OT	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
24MIMP41	MP	PR	Major Project			120	180	300	12
24MIOT42	OT	T	Molecular Biotechnology	3+1	3	40	60	100	4
24MIOT43	OT	T	General Microbiology	3+1	3	40	60	100	4
24MIOT44	OT	T	MOOC/Swayam (Complete within 3 semesters)	3+1	3	40	60	100	
Total								500	20

M.Sc. Biotechnology

First Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24BTHT11	HT	T	Biochemistry	3+1	3	40	60	100	4
24BTHT12	HT	T	Enzymology	3+1	3	40	60	100	4
24BTHT13	HT	T	Cell Biology	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subject									
24BTST14	ST	T	IPR, Biosafety and Bioethics	3+1	3	40	60	100	4
24BTST15	ST	T	Plant Tissue Culture	3+1	3	40	60		
24BTHP16	HP	P	Biotechnology Biotechnology Practical I	4	4	20	30	50	2
24BTHP17	SP	P	Biotechnology Practical II	4	4	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24BTHT21	HT	T	Genetic Engineering	3+1	3	40	60	100	4
24BTHT22	HT	T	Molecular Biology	3+1	3	40	60	100	4
24BTHT23	HT	T	Food Biotechnology	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subject									
24BTST24	ST	T	Fermentation Technology and Sericulture Biotechnology	3+1	3	40	60	100	4
24BTST25	ST	T	Principles of Microbiology	3+1	3	40	60		
24BTST26	HP	P	Biotechnology Practical III	4	4	20	30	50	2
24BTHP27	SP	P	Biotechnology Practical IV	4	4	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24BTHT31	HT	T	Genetics	3+1	3	40	60	100	4
24BTHT32	HT	T	Immunology	3+1	3	40	60	100	4
24BTHT33	HT	T	Bioanalytical and Molecular Biology Techniques	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subject									
24BTST34	ST	T	Medical Biotechnology	3+1	3	40	60	100	4
24BTST35	ST	T	Environmental Biotechnology	3+1	3	40	60		
24BTHP36	HP	P	Biotechnology Practical V	4	4	20	30	50	2
24BTHP37	SP	P	Biotechnology Practical VI	4	4	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/OE	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24BTMP41	HC	PR	Major Project	--	--	120	180	300	12
24BTOT42	OE	T	Bioinformatics	3+1	3	40	60	100	4
24BTOT43	OE	T	Industrial Applications: QC, QA, R&D, and Data Management	3+1	3	40	60	100	4
24BTOT44	OE	T	MOOC/Swayam						
Total								500	20

M.Sc. Biochemistry

First Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teaching hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	Total	
24BCHT11	HT	T	Biomolecules	3+1	3	40	60	100	4
24BCHT12	HT	T	Enzymology	3+1	3	40	60	100	4
24BCHT13	HT	T	Cell Biology	3+1	3	40	60	100	4
Choose one among two soft-core theory subjects									
24BCST14	ST	T	Bio-organic and Bio- inorganic Chemistry	3+1	3	40	60	100	4
24BCST15	ST	T	Nutritional Biochemistry	3+1	3	40	60	100	4
24BCHP16	HP	P	Biochemistry Practical I	4	4	20	30	50	2
24BCSP17	SP	P	Biochemistry Practical II	4	4	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ring hours/ week	Exam hours	Marks			credit s
						IA	Exam	To- tal	
24BCHT21	HT	T	Metabolism	3+1	3	40	60	100	4
24BCHT22	HT	T	Molecular Biology	3+1	3	40	60	100	4
24BCHT23	HT	T	Membrane Biochemistry and Endocrinology	3+1	3	40	60	100	4
Choose one among two soft-core theory subjects									
24BCST24	ST	T	Human Physiology	3+1	3	40	60	100	4
24BCST25	ST	T	Plant Biochemistry	3+1	3	40	60	100	4
24BCHP26	HP	P	Biochemistry Practical III	4	4	20	30	50	2
24BCSP27	SP	P	Biochemistry Practical IV	4	4	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
24BCCT31	HT	T	Genetics	3+1	3	40	60	100	4
24BCHT32	HT	T	Immunology	3+1	3	40	60	100	4
24BCHT33	HT	T	Biophysical and biochemical techniques	3+1	3	40	60	100	4
Choose one among two soft-core theory subjects									
24BCST34	ST	T	Clinical Biochemistry	3+1	3	40	60	100	4
24BCST35	ST	T	IPR, Biosafety and Bioethics	3+1	3	40	60	100	4
24BCHP36	HP	P	Biochemistry Practical V	4	4	20	30	50	2
24BCSP37	SP	P	Biochemistry Practical VI	4	4	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/ OT	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
24BCMP41	MP	PR	Major Project			120	180	300	12
24BCOT42	OT	T	Research Methodology	3+1	3	40	60	100	4
24BCOT43	OT	T	Industrial Applications: QC, QA, R&D, and Data Management	3+1	3	40	60	100	4

M.Sc. Chemistry

First Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /week	Exam hours	Marks			Credits
						IA	Exam	Total	
24CHHT11	HT	T	Inorganic Chemistry I	3+1	3	40	60	100	4
24CHHT12	HT	T	Organic Chemistry I	3+1	3	40	60	100	4
24CHHT13	HT	T	Physical Chemistry I	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24CHST14	ST	T	Chromatographic Separation Techniques	3+1	3	40	60	100	4
24CHST15	ST	T	Polymer Chemistry	3+1	3	40	60	100	4
24CHHP16	HP	P	Chemistry Practical I	4	6	20	30	50	2
24CHSP17	SP	P	Chemistry Practical II	4	6	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /week	Exam hours	Marks			Credits
						IA	Exam	Total	
24CHHT21	HT	T	Inorganic Chemistry II	3+1	3	40	60	100	4
24CHHT22	HT	T	Organic Chemistry II	3+1	3	40	60	100	4
24CHHT23	HT	T	Physical Chemistry II	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24CHST24	ST	T	Introduction to Nanoscience and Nanotechnology	3+1	3	40	60	100	4
24CHST25	ST	T	Chemistry of Carbohydrates & Biochemistry	3+1	3	40	60	100	4
24CHHP26	HP	P	Chemistry Practical III	4	6	20	30	50	2
24CHSP27	SP	P	Chemistry Practical IV	4	6	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /week	Exam hours	Marks			Credits
						IA	Exam	Total	
24CHHT31	HT	T	Advanced Inorganic Chemistry	3+1	3	40	60	100	4
24CHHT32	HT	T	Advanced Organic Chemistry	3+1	3	40	60	100	4
24CHHT33	HT	T	Advanced Physical Chemistry	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24CHST34	ST	T	Spectroscopic Technique	3+1	3	40	60	100	4
24CHST35	ST	T	Medicinal Chemistry	3+1	3	40	60	100	4
24CHHP36	HP	P	Chemistry Practical V	4	6	20	30	50	2
24CHSP37	SP	P	Chemistry Practical VI	4	6	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/OT	T/P	Title of the Paper	Teaching hours /week	Exam hours	Marks			Credits
						IA	Exam	Total	
24CHMP41	MP	PR	Major Project	12		120	180	300	12
24CHOT42	OT	T	Research Methodology	3+1	3	40	60	100	4
24CHOT43	OT	T	Fundamentals of Chemical Analysis & Chromatography	3+1	3	40	60	100	4
24CHOT44	OT	T	MOOC/Swayam (Complete within 3 semesters)						
Total								500	20

M.Sc. Physics

First Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24PHHT11	HT	T	Mathematical Physics	3+1	3	40	60	100	4
24PHHT12	HT	T	Crystal Physics	3+1	3	40	60	100	4
24PHHT13	HT	T	Classical Mechanics	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24PHST14	ST	T	Crystal Growth and Spectroscopy	3+1	3	40	60	100	4
24PHST15	ST	T	Statistical Physics and Thermodynamics	3+1	3	40	60		
24PHHP16	HP	P	Physics Practical I	4	4	20	30	50	2
24PHSP17	SP	P	Physics Practical II	4	4	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24PHHT21	HT	T	Electromagnetic Theory	3+1	3	40	60	100	4
24PHHT22	HT	T	Chemical Crystallography	3+1	3	40	60	100	4
24PHHT23	HT	T	Biophysics	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24PHST24	ST	T	Solid State Physics	3+1	3	40	60	100	4
24PHST25	ST	T	Numerical Techniques	3+1	3	40	60		
24PHHT26	HP	P	Physics Practical III	4	4	20	30	50	2
24PHSP27	SP	P	Physics Practical IV	4	4	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ST	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24PHHT31	HT	T	Quantum Mechanics	3+1	3	40	60	100	4
24PHHT32	HT	T	Protein Crystallography	3+1	3	40	60	100	4
24PHHT33	HT	T	Physics of Materials	3+1	3	40	60	100	4
Choose one among the two Soft Core theory subjects									
24PHST34	ST	T	Optoelectronics	3+1	3	40	60	100	4
24PHST35	ST	T	Computational Physics	3+1	3	40	60		
24PHHP36	HP	P	Physics Practical V	4	4	20	30	50	2
24PHSP37	SP	P	Physics Practical VI	4	4	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/OT	T/P	Title of the Paper	Teaching hours /Week	Exam hours	Marks			Credits
						IA	Exam	Total	
24PHMP41	MP	PR	Major Project	3+1		120	180	300	12
24PHOT42	OT	T	Electronics	3+1	3	40	60	100	4
24PHOT43	OT	T	Energy Studies	3+1	3	40	60	100	4
24PHOT44	OT	T	MOOC/Swayam (Complete within 3 semesters)	3+1	3	40	60	100	
Total								500	20

M.Sc. Computer science

First Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- ing hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
25CSHT101	HT	T	Data Indexing Techniques	3+1	3	40	60	100	4
25CSHT102	HT	T	Theory of Language	3+1	3	40	60	100	4
25CSHT103	HT	T	Distributed Databases	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
25CSST104	ST	T	Discrete Mathematics	3+1	3	40	60	100	4
25CSST105	ST	T	Object Oriented Programming In C++	3+1	3	40	60		
25CSHP106	HP	P	Computer Science Practical I	4	4	20	30	50	2
25CSSP107	SP	P	Computer Science Practical II	4	4	20	30	50	2
Total								500	20

Second Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- inghours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
25CSHT201	HT	T	Java Programming	3+1	3	40	60	100	4
25CSHT202	HT	T	Advanced Data Structure	3+1	3	40	60	100	4
25CSHT203	HT	T	Artificial Intelligence	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
25CSST204	ST	T	Numerical methods and advanced graph theory	3+1	3	40	60	100	4
25CSST205	ST	T	Design and analysis of Algorithm	3+1	3	40	60		
25CSHP206	HP	P	Computer Science Practical III	4	4	20	30	50	2
25CSSP207	SP	P	Computer Science Practical IV	4	4	20	30	50	2
Total								500	20

Third Semester

Paper Code	HT/ ST	T/P	Title of the Paper	Teach- inghours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
25CSHT301	HT	T	Cloud Computing	3+1	3	40	60	100	4
25CSHT302	HT	T	Machine Learning	3+1	3	40	60	100	4
25CSHT303	HT	T	Web programming	3+1	3	40	60	100	4
Choose one among two Soft Core theory subjects									
25CSST304	ST	T	Software Engineering	3+1	3	40	60	100	2
25CSST305	ST	T	Shell Programming	3+1	3	40	60		2
25CSHP306	HP	P	Computer Science Practical V	4	4	20	30	50	2
25CSSP307	SP	P	Computer Science Practical VI	4	4	20	30	50	2
Total								500	20

Fourth Semester

Paper Code	MP/ OT	T/P	Title of the Paper	Teaching hours/ week	Exam hours	Marks			Cre dits
						IA	Exam	To- tal	
25CSMP401	MP	PR	Major-project			120	180	300	12
25CSOT402	OT	T	Research Methodology	3+1	3	40	60	100	4
25CSOT403	OT	T	Data Science	3+1	3	40	60	100	4
25CSOT404	OT	T	MOOC/Swayam (Complete within 3 semesters)	3+1	3	40	60	100	
Total								500	20