

Outcomes Based Education (OBE) Framework
Two Year Full Time Graduate Program
M.Sc. Systems Biology

FIRST YEAR: Semester: 1					
Course Code	Course Title	No. of hours per week			Credits
		Lecture	Tutorial	Practical	
MSB 501	Biomolecules	3	-	-	3
MSB 503	Biostatistics and Mathematics	3	-	-	3
MSB 505	Cell and Molecular Biology	3	-	-	3
MSB 507	Genomics	3	-	-	3
MSB 509	Basics of Biocomputing	-	-	6	3
MSB 511	Molecular Biology	-	-	6	3
MSB 513	Soft Skills (Tutorials/Seminar)	-	3	-	2
	Total	12	3	12	20

FIRST YEAR: Semester: 2					
Course Code	Course Title	No. of hours per week			Credits
		Lecture	Tutorial	Practical	
MSB 502	Structural Bioinformatics	3	-	-	3
MSB 504	Proteomics and Metabolomics	3	-	-	3
MSB 506	Systems Biology Algorithms	3	-	-	3
MSB 508/ MSB 510	Cell and Tissue Engineering/ Cancer Biology	3	-	-	3
MSB 512	Omics Technologies	-	-	6	3
MSB 514	Algorithms and Modelling	-	-	6	3
MSB 516	Soft Skills (Tutorials/ Seminar)	-	3	-	2
	Total	12	3	12	20

SECOND YEAR: Semester: 3					
Course Code	Course Title	No. of hours per week			Credits
		Lecture	Tutorial	Practical	
MSB 601	Machine Learning and Artificial Intelligence	3	-	-	3
MSB 603	Computational Biology	3	-	-	3
MSB 605	Big Data Analysis	3	-	-	3
MSB 607/ MSB 609	Infectious Disease Dynamics/ Research Methodology	3	-	-	3
MSB 611	Systems Biology	-	-	6	2
MSB 613	Mini Project	-	-	3	2
MSB 615	Laboratory Rotation	-	-	3	2
MSB 617	Soft Skills (Tutorials/ Seminar/Review paper writing)	-	3	-	2
	Total	12	3	12	20

SECOND YEAR: Semester: 4					
Course Code	Course Title	No. of hours per week			Credits
		Lecture	Tutorial	Practical	
MSB 602	Seminar/Presentation & Progress	-	-	8	4
MSB 699	Research Project/Submission of dissertation/Submission of manuscript	-	-	32	16
	Total			40	20