School of Computational & Integrative Sciences
Course Structure

Master of Science (M. Sc.)
Computational and Integrative Sciences

Semester-I	Course Title	Credits	
		CB	CS
IT401	Mathematics-I	3	
IT402	Introduction to Probability and Statistics	3	
IT403N	Programming Fundamentals and Data Structure	3	
IT601N	Programming in R and Python	3	
	Elective 1*	3	
	Elective 2*	3	
IT427#	Laboratory-I	6	
	Total Credits	**24**	

Students shall opt elective courses in consultation with the course coordinator ensuring exclusion of the subject taught in his/her preceding academic degree.
#*IT427 will include components from IT403N (3 credits) and IT601N (3 credits)*

Elective Courses (Any 2)
- IT404N Fundamentals of Physical Sciences
- IT405N Fundamentals of Biological Sciences
- IT524　Fundamentals of Bioinformatics
- IT466　Chemical Foundation for Bioinformatics

Semester-II	Course title	Credits	
		CB	CS
IT411	Mathematics-II	3	
IT412	Topics in statistics and Linear Algebra	3	
IT415	Graphs, Networks and Concepts of system Sciences	3	
IT421	Numerical Techniques and Programming	3	
IT762	Chemoinformatics in drug designing	3	
IT451N	Computational Structural Biology	3	
IT453N	Biological Sequence Analysis	3	
IT413	Advanced topics in Physical Sciences		3
IT465	Stochastic Process: Theory and Applications		3
IT419	Network Theory for Complex Systems		3
IT428*	Laboratory-II	3	
	Total Credits	**24**	

IT428 will have components from IT421 (2 credits) and IT762/IT419 (1 credit)

Semester-III	Course title	Credits	
		CB	CS
IT422	Research Methodology	3	
IT515	Data Mining and Modeling	3	
IT768	Omics Sciences	3	
IT461	Systems Biology	3	
IT516	Biomolecular simulation theory and application	3	
IT454N	Statistical Mechanics of Complex Systems		3
IT462	Multi Agent Modeling in Complex Systems		3
IT456N	Non-Linear Dynamics		3
IT417	Mini Project	6	
IT418*	Laboratory-III	4	
	Total Credits	**25**	

IT418 will include components from IT515, IT461 and IT516 for CB (equal weightage from three courses) and from IT454N, IT462 and IT456N for CS (equal weightage from three courses)

Semester-IV	Course title	Credits	
		CB	CS
	Elective 3*	3	
	Elective 4*	3	
IT420	Seminar	1	
IT425	Term paper	1	
IT426	Dissertation	15	
	Total Credits	**23**	

List of elective courses offered will be provided for the ongoing semester