

**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 <sup>#</sup>	Laboratory-I	6	
	<b>Total Credits</b>	<b>24</b>	

*\*Students shall opt elective courses in consultation with the course coordinator ensuring exclusion of the subject taught in his/her preceding academic degree.*

*<sup>#</sup>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-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	
	<b>Total Credits</b>	<b>25</b>	

*\*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)*