Credit Framework for the Four-Year Undergraduate Programme in B.Sc. (Hons.) Statistics and Data Science

Department of Statistics, Faculty of Science, St. Xavier's University, Kolkata (July 2026 onwards)

SEM	Major (Discipline specific core courses)	Minor	Multi-Disciplinary / Inter-Disciplinary Courses	Ability Enhancement Courses (AEC)	Skill Enhancement Courses (SEC)	Common Value-Added Courses	Internship / Research Project or Dissertation	Total Credits
I	Descriptive Statistics and Probability- I (4 Credits)	Programming in C/C++ (4 Credits)	Introduction to Economic Theory (3 Credits) Or Cyber Law and IPR (3 Credits)	Communicative English- I (2 Credits)	Personality Development (3 Credits)	Interreligious Studies for global citizenship (2 Credits) and Environmental Education (2 Credits)		20 Credits
II	Descriptive Statistics and Probability-II (4 Credits)	Data Structure and Algorithms using C/C++ (4 Credits)	Development Studies (3 Credits) Or Principles of Management (3 Credits)	Communicative English- II (2 Credits)	Spreadsheet and SPSS in Practice (3 Credits)	Service Learning (2 Credits) and Understanding the Indian Constitution (2 Credits)		20 Credits
III	Sampling Distribution and Statistical Inference-I (4 Credits) and Database Management System (4 Credits)	Mathematics-I (4 Credits)	Financial Technology (3 Credits) Or Basics of Accounting (3 Credits)	Modern Indian Language I (Bengali/Hindi) (2 Credits) Or Business Communication I (2 Credits)	Python (3 Credits)			20 Credits
IV	Statistical Inference-II (4 Credits) and Linear Statistical Models (4 Credits) and Statistical Quality Control and Vital Statistics (4 Credits)	Data Analysis with R (4 Credits)		Modern Indian Language II (Bengali/Hindi) (2 Credits) Or Business Communication II (2 Credits)			Internship (2 Credits)	20 Credits
V	Multivariate Analysis (4 Credits) and Regression Analysis-I (4 Credits) and Nonparametric Inference and Large Sample Theory (4 Credits)	Data Warehouse and Mining (4 Credits)						20 Credits

	and Soft Computing and Artificial Intelligence (4 Credits)							
VI	Bayesian Methods and Psychometry (4 Credits) and Sample Survey-I and Design of experiments-I (4 Credits) and Economic Statistics and Time Series Analysis (4 Credits) and Machine Learning using R/Python (4 Credits)	Mathematics-II (4 Credits)						20 Credits
Students who want to exit after 3 years will be awarded B.Sc. Degree in Statistics and Data Science.								
VII	Stochastic Process (4 Credit) and Discrete Data Analysis and Applied Multivariate Analysis and Neural Networks and Deep Learning	Mathematics-III						20 Credits

VIII	Resampling Techniques and Time Series Analysis [Compulsory] (4 Credits) **(The following three courses shall be offered in lieu of the Dissertation for students opting for Honours in Statistics and Data Science.)** Technical Project (4 Credits) **and** **Any one of the following courses:** Advanced Probability Theory (4 Credits) *Or* Bayesian Inference (4 Credits) *Or* Sample Survey-II and Design of Experiments-II (4 Credits) *Or* Statistical Inference-III (4 Credits) *Or* Actuarial Statistics **and** **Any one of the following courses:** Social Network Analysis (4 Credits) *Or* Business Intelligence (4 Credits) *Or* IoT and Cloud Computing (4 Credits) *Or* Computer Vision (4 Credits) *Or* Information Security (4 Credits)	Big Data Analytics [4 Credits]					Dissertation (12 Credits)	20 Credits

- **At the end of 4th year students will be awarded B.Sc. Degree in Statistics and Data Science (Honours).**
- **Students will be awarded B.Sc. Degree (Honours with Research) if they opt for dissertation (12 credits) in semester VIII.**
- **To opt for dissertation (12 credits), a student must have secured at least 75% marks, with no pending arrear, at the end of the 6th semester.**

Notes:

1. Elective courses shall be offered in accordance with university norms and the discretion of the department.
2. The marks distribution for the CIA and End Semester Examination shall be as per the university norms and the discretion of the Controller of Examinations.