

Dual Degree in B. Sc. -M.Sc. Data Science
School of Advanced Sciences

Credit Summary	B.Sc.	B.Sc. Hons.	B.Sc.-M.Sc. Dual Degree
University Core	34	42	56
Programme Core	41	60	64
Programme Electives	39	49	60
University Electives	6	9	12
Total Credits	120	160	192

University Core		T	P	C
				56
Course Code	Course Title	T	P	C
	Internship/CO-OP/Design Project/Entrepreneurship	0	0	8
	Ethics and Values	P/F		0
	Design and Analysis of Algorithms	2	2	3
MAT1109	Introduction to Computational Biology	3	2	4
	Java Programming	3	2	4
MAT1105	Modern Algebra	4	0	4
CHY1001	Environmental Studies	P/F		0
ENG1003	Business Communication	2	2	3
ENG2002	Written Analysis and Communication	2	2	3
	Clubs & Chapters (Co/ Extra-Curricular Activities)	P/F		0
ENG5001	Technical and Research Writing	1	2	2
CSE0505	Data Visualization and Exploration	3	2	4
	Internship/CO-OP/Design Project/Entrepreneurship	0	0	8
SET5001	Conference Paper Presentation	0	0	2
	Capstone			
STSXXXX	Soft Skills - I	0	2	1
STSXXXX	Soft Skills - II	0	2	1
STSXXXX	Soft Skills - III	0	2	1
STSXXXX	Soft Skills - IV	0	2	1
STSXXXX	Soft Skills - V	0	2	1
STSXXXX	Soft Skills - VI	0	2	1
STSXXXX	Soft Skills - VII	0	2	1
Programme Core				64
MAT1103	Excel and R for Data Analysis	2	2	3
MAT1106	Linear Algebra for Data Science	4	0	4
MAT1102	Probability and Distribution Theory	3	0	3
MAT1107	Statistics for Data Science	2	2	3
CSE0106	Python Programming	3	2	4
	Data Structures using Python	3	2	4
MAT1101	Calculus for Data Science	3	2	4
MAT2103	Optimization Methods in Data Science	3	2	4

CSE0208	Introduction to Data Warehousing and Data Mining	3	2	4
MAT1104	Discrete Mathematics and Its Applications	4	0	4
MATXXX X	Fundamentals of Machine Learning	3	2	4
	Artificial Intelligence	2	2	3
MAT4103	Statistical Inference	3	2	4
CSE0502	Database Essentials for Data Science	3	2	4
	Applied Machine Learning	3	2	4
	Advanced Data Structures and Algorithms	3	2	4
	Multivariate Data Analysis	3	2	4
Programme Electives				60
MAT2101	Stochastic Processes	4	0	4
	Bio Statistics	3	2	4
	Clinical Trails: Design and Analysis	3	2	4
	Network Optimization	3	2	4
	Differential Equations	4	0	4
MAT1110	Introduction to Regression Analysis	3	2	4
MAT1108	Numerical Methods for Data Science	3	2	4
MAT4200	Regression Analysis and Predictive Models	2	2	3
MAT4201	Time series analysis and Forecasting	2	2	3
MAT4202	Statistical Quality Control	3	2	4
	Actuarial statistics	3	0	3
	Computer Organization and Architecture	3	0	3
	Fundamentals of Natural Language Processing	3	2	4
	Mobile application development	0	4	2
CSE0209	Data Communication Networks	3	2	4
	Introduction to Cloud Computing	3	0	3
	Web Technologies	0	4	2
	Software Engineering	3	2	4
CSE0207	Fundamentals of Database Systems	3	2	4
	Web Applications and Security	3	2	4
CSE0505	Data Visualization and Exploration	3	2	4
CSE0303	Information Retrieval Techniques	3	2	4
	Artificial Intelligence	3	2	4
	Deep Learning and its Applications	3	2	4
	Reinforcement Learning	3	2	4

CSE0601	Big Data Analytics using NoSQL	3	2	4
	Healthcare Analytics	3	2	4
	Data Privacy and Security	2	2	3
	Social Network Data Analytics	2	2	3
	Industry Certification	0	4	2
University Electives				12
Any Course after fulfilling Programme Core & University Core requirements and without duplicity can be taken as University Elective apart from any specific basket requirements given below				
ECE0103	Digital Design	2	2	3
MGTXXXX	Fundamentals of Business Analytics	2	2	3
CSEXXXX	Web Development	2	2	3
	Neural Networks and Fuzzy systems	2	2	3
	Image Processing	2	2	3

	Computer Organization and Architecture	3	0	3
	Blockchain Technology	3	0	3
ECE0401	Signal Processing	2	2	3
	Fundamentals of Economics	2	0	2
	Fundamentals of Marketing	3	0	3
	Accounting and Finance	2	0	2
	Fundamentals of Supply Chain Analytics	2	0	2
ECE0103	Fundamentals of Business Analytics	2	2	3
Engineering Sciences Humanities Social Sciences Liberal arts Economics Finance Management				
Honours Degree (40 credits) - Students can opt for an Honours Degree" in the same discipline by earning 40 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Honours options.				