

## Curriculum

Programme : **M.Sc., Computational Statistics and Data Analytics**

Duration : **5 Years - Integrated**

Total Credits : **210**

### Credits Distribution

University Core - UC	63
University Elective - UE	12
Programme Core - PC	72
Programme Elective - PE	63
<b>Total Credits</b>	<b>210</b>

University Core (UC)							
Course Code	Course Title	Type	L	T	P	J	C
MAT1001	Fundamentals of Mathematics	Theory	3	1	0	0	4
MATXXXX	Linear Algebra and Applications	Theory	3	0	0	0	3
MATXXXX	Real Analysis and Applications	Theory	3	0	0	0	3
MATXXXX	Discrete Mathematics	Theory	3	0	0	0	3
CSC1001	Computational Thinking	Theory	2	1	0	0	3
CSE1002	Problem Solving with Object Oriented Programming	Lab	0	0	6	0	3
ENG1001	Basic English	Basket	0	0	4	0	2
ENG1012	Communicative English	Basket	0	0	4	0	2
FRE1001	Francais quotidien	Basket	2	0	0	0	2
FRE2001	Francais progressif	Basket	2	0	2	0	3
GER1001	Grundstufe Deutsch	Basket	2	0	0	0	2
GER2001	Mittelstufe Deutsch	Basket	2	0	2	0	3
RUS1001	Russian for Beginners	Basket	2	0	0	0	2
CHY1003	Environmental Studies	Theory	3	0	0	0	3
HUM1032	Ethics and Values	Theory	2	0	0	0	2
MGT1022	Lean Start-up Management	Embedded-Theory & Project	1	0	0	4	2
STS1021	Introduction to Soft Skills	Basket	3	0	0	0	1
STS1022	Introduction to Personal Skills	Basket	3	0	0	0	1
STS2021	Fundamentals of Aptitude	Basket	3	0	0	0	1
STS2022	Introduction to Business Communication	Basket	3	0	0	0	1
STS3021	Reasoning Skill Enhancement	Basket	3	0	0	0	1
STS3022	Introduction to Etiquette	Basket	3	0	0	0	1
SET4001	Science, Engineering and Technology Project - I	Project	0	0	0	0	2
SET4002	Science, Engineering and Technology Project - II	Project	0	0	0	0	2
MATXXXX	Research Methodology	Embedded-	3	0	0	0	3

		Theory & Project						
MATXXXX	Comprehensive Examination	Project	0	0	0	0	0	2
MATXXXX	Master Thesis	Project	0	0	0	0	0	21
	<b>Total Credits</b>							<b>81</b>

University Elective (UE)							
Course Code	Course Title	Type	L	T	P	J	C
CSE5001	Algorithms: Design and Implementation	Embedded-Theory & Lab	2	0	2	0	3
ITE6013	Big Data Analytics	Embedded-Theory & Project	3	0	0	4	4
CSE5003	Database Systems: Design and Implementation	Embedded-Theory, Lab & Project	2	0	2	4	4
CSE6005	Machine Learning	Embedded-Theory, Lab & Project	2	0	2	4	4
	<b>Total Credits</b>						<b>15</b>

Programme Core (PC)							
Course Code	Course Title	Type	L	T	P	J	C
MATXXXX	Fundamentals of Statistics	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Probability and Random Variables	Theory	3	2	0	0	4
MATXXXX	Basic Statistical Methods	Theory	3	2	0	0	4
MATXXXX	Distribution Theory	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Sampling Techniques	Theory	2	2	0	0	3
MATXXXX	Theory of Estimation	Theory	3	2	0	0	4
MATXXXX	Testing of Hypothesis	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Regression Analysis and Predictive Models	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Design and Analysis of Experiments	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Operation Research	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistical Quality Control	Embedded-	2	2	0	4	4

		Theory & Project					
MATXXXX	Time Series analysis and Forecasting	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Multivariate Data Analysis	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Stochastic Processes and Applications	Theory	3	2	0	0	4
MATXXXX	Reliability Theory and Survival Analysis	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Statistical Methods for Data Mining	Embedded-Theory & Lab	2	0	2	0	3
MATXXXX	Econometric Analysis	Embedded-Theory & Project	3	0	0	4	4
	<b>Total Credits</b>						<b>72</b>

Programme Elective (PE)							
Course Code	Course Title	Type	L	T	P	J	C
MATXXXX	Statistical Computing Lab - I	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Statistical Computing Lab - II	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Statistical Computing Lab – III	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Statistical Computing Lab – IV	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Statistical Computing Lab – V	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Statistical Computing Lab - VI	Embedded-Theory, Lab & Project	2	0	2	4	4
MATXXXX	Queuing Theory and Network Analysis	Theory	3	2	0	0	4
MATXXXX	Non-Parametric statistics	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Bio-statistics	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Advanced Operation Research	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Actuarial Statistics	Embedded-Theory & Project	2	0	0	4	3
MATXXXX	Bayesian Inference	Theory	3	2	0	0	4

MATXXXX	Total Quality Management and Six sigma	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistics for Management sciences	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistics for Financial Modelling	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Inventory Models	Theory	3	2	0	0	4
MATXXXX	Statistical Methods for Bio-informatics	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Demography and Official Statistics	Theory	3	0	0	0	3
MATXXXX	Statistical Process Control	Embedded-Theory & Lab	3	0	2	0	4
MATXXXX	Statistical Consulting	Embedded-Theory & Project	2	0	0	4	3
MATXXXX	Statistics for Biological and Earth Sciences	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistics for Social and Behavioural Sciences	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistics for Research, industry and Community Development	Embedded-Theory & Project	3	0	0	4	4
MATXXXX	Statistics for Forensic Sciences	Embedded-Theory & Lab	3	0	2	0	4
	<b>Total Credits</b>						<b>93</b>