

Levels	Major Requirements	Cum MCs
Level 1000 (20 MCs)	Pass – CS1010/—S/—X Programming Methodology – CS1020 Data Structures and Algorithms I – DSA1101 Introduction to Data Science – MA1101R Linear Algebra I – MA1102R Calculus	20
Level 2000 (24 MCs)	Pass – CS2010 Data Structures and Algorithms II – DSA2101 Essential Data Analytics Tools: Data Visualisation – DSA2102 Essential Data Analytics Tools: Numerical Computation – MA2311 Techniques in Advanced Calculus Or MA2104 Multivariate Calculus #1 – ST2131/MA2216 Probability – ST2132 Mathematical Statistics	44  #1: MA2104 added as an alternative to MA2311
Levels 3000 and 4000 (56 MCs)	Pass – CS3244 Machine Learning – DSA3101 Data Science in Practice – DSA3102 Essential Data Analytics Tools: Convex Optimisation – ST3131 Regression Analysis Or DSA4199 Honours Project in Data Science Or DSA4299 Applied Project in Data Science – Six additional modules from List A and List B subject to the following restrictions: + There must be at least two modules each from List A and from List B1/List B2 + There must be at least four modules at level 4000	100

 Click on the module codes for module information

Summary of Requirements	MCs
University Requirements	20 MCs
Faculty Requirements *	8 MCs
Major Requirements	100 MCs
Unrestricted Elective Modules	32 MCs
Total	160 MCs

\* Faculty requirements of 16 MCs are partially fulfilled through the reading of CS/MA/ST modules within the major. Students are required to fulfil the remaining 8 MCs of Faculty requirements from any two (2) of the following subject groups: Chemical Sciences, Life Sciences, Physical Sciences and Multidisciplinary & Interdisciplinary Sciences; but not from the following groups: Computing Sciences and Mathematical & Statistical Sciences.

**List A** — DSA modules

- DSA4211 High-Dimensional Statistical Analysis
- DSA4212 Optimisation for Large-Scale Data-Driven Inference

**List B1** — DSA-recognised modules (no hidden pre-requisites)

- MA3236 Nonlinear Programming
  - MA3252 Linear and Network Optimisation
  - ST3232 Design and Analysis of Experiments
  - ST3233 Applied Time Series Analysis
  - ST3239 Survey Methodology
  - ST3240 Multivariate Statistical Analysis
  - ST3247 Simulation
  - ST3248 Statistical Learning I #2
  - ST4231 Computer Intensive Statistical Methods
  - ST4234 Bayesian Statistics
  - ST4248 Statistical Learning II #2
- #2: ST3248 and ST4248 replace ST4240

**List B2** — DSA-recognised modules (with hidden pre-requisites) †

- CS3210 Parallel Computing
- CS3223 Database Systems Implementation
- CS3230 Design and Analysis of Algorithms
- CS4224 Distributed Databases
- CS4225 Massive Data Processing Techniques in Data Science
- CS4231 Parallel and Distributed Algorithms
- CS4234 Optimisation Algorithms
- MA4230 Matrix Computation
- MA4270 Data Modelling and Computation

† Students who wish to read these modules would have to read additional pre-requisite modules and should consult the Faculty/Department for academic advice on their study plans.