Requirements for Second Major in Data Analytics

Applicable to cohorts AY2019/2020 and AY2020/2021

Levels	Major Requirements	Cumulative Major Units

Level 1000 (10-12 Units)	Pass
	- One of the following courses:
	  + CS1010/-E/J/S/X Programming Methodology
	  + IT1007 Introduction to Programming with Python and C
	  + DSA1101 Introduction to Data Science
	- One of the following courses:
	  + MA1101R/MA2001 Linear Algebra I
	  + MA1311 Matrix Algebra
	  + MA1508E Linear Algebra for Engineering˜
	  + MA1513 Linear Algebra with Differential Equations (2 Units)^˜
	- One of the following courses:
	  + MA1102R/MA2002 Calculus
	  + MA1312 Calculus with Applications
	  + MA1505 Mathematics I˜
	  + MA1507 Advanced Calculus
	  + MA1511 Engineering Calculus (2 Units)˜
	    and MA1512 Differential Equations for Engineering (2 Units)˜
	  + MA1521 Calculus for Computing
		10-12

Level 2000 (16 Units)	- CS2040 Data Structures and Algorithms
	- ST2131/MA2216/MA2116 Probability
	- ST2132 Mathematical Statistics
	- One of the following courses:
	  + DSA2101 Essential Data Analytics Tools: Data Visualisation
	  + DSA2102 Essential Data Analytics Tools: Numerical Computation
		26-28

Levels 3000 and 4000 (12-16 Units)	Pass
	- One of the following courses:
	  + DSA3102 Essential Data Analytics Tools: Convex Optimisation*
	  + DBA3701 Introduction to Optimisation*
	  + MA3236 Nonlinear Programming*
	  + MA3252 Linear and Network Optimisation*
	- Two (or three^) of the following courses:
	  + CS3244 Machine Learning
	  + DSA4211 High-Dimensional Statistical Analysis ⼐
	  + DSA4212 Optimisation for Large-Scale Data-Driven Inference*
	  + ST3131 Regression Analysis ⼐
	  + ST3240/ST4250 Multivariate Statistical Analysis ⼐
	  + ST3247 Simulation
	  + ST3248 Statistical Learning I
	  + ST4248 Statistical Learning II ⼐
		40-42

^ Applicable only to students who use MA1513 Linear Algebra with Different Equations (2 Units) to fulfil the second major requirements.

* Students may need to read additional courses outside the second major requirements to satisfy the pre-requisites of this course.

⼐ Students who have passed EC3003 Econometrics I are precluded from reading ST13131. For courses in this second major that require ST3131 as a pre-requisite, i.e., DSA4211, ST3240/ST4250 and ST4248, the pre-requisite may not be fulfilled by EC3303.

˜ MA1505, MA1508E, MA1511, MA1512 and MA1513 are offered only to FoE students.

This second major is <u>not</u> offered with a primary major in Business Analytics or Data Science and Analytics or Data Science and Economics, and a minor in Data Analytics.