Mathematics and Statistics (4 Years) [MMath]

Year 4 Programme Structure

The 4th year of this programme consists of 30 credits of compulsory Project work (listed below as a mandatory requirement) and must include 90 credits of Level 4 MATH course units which can be taken with Level 3 MATH course units over the final two years*, totalling 240 credits. Up to 20 credits can be taken from the approved level 3 non MATH course units with permission.

*Note:

- The choice of optional course units over the final two years **MUST** include **at least 80 credits** of Level 3 or 4 Probability and Statistics course units (these course units begin with the codes MATH37, MATH38, MATH47 and MATH48).
- Students should consider taking up to two Level 4 MATH course unit options in the Third Year as this will increase choice and give flexibility in the Fourth Year.
- The Fourth Year project **MUST** be in Probability or Statistics.
- Students who take MATH37001 cannot take MATH47201, and vice versa.
- Please check the timetables before selecting course units.

Course descriptions on each course unit includes information on assessment criteria's, lecturer, syllabus, learning outcomes, etc., and they are available from the 'My Course' tab in 'My Manchester' by searching the subject code or you can browse them from the Schools 'Study' website.

Level 4 course units

Description	Semester	Requirement	Credit Rating	Level
MATH40000 - Double Project	1 and 2	Mandatory	30	4
MATH41061 - Differentiable Manifolds	1	Optional	15	4
MATH42041 - Noncommutative Algebra	1	Optional	15	4
MATH42061 - Representation and Characters of Groups	1	Optional	15	4

Description	Semester	Requirement	Credit Rating	Level
MATH42121 - Galois Theory	1	Optional	15	4
MATH43021 - Set Theory	1	Optional	15	4
MATH43051 - Model Theory	1	Optional	15	4
MATH44041 - Applied Dynamical Systems	1	Optional	15	4
MATH45061 - Continuum Mechanics	1	Optional	15	4
MATH46101 - Numerical Linear Algebra	1	Optional	15	4
MATH47101 - Stochastic Calculus	1	Optional	15	4
MATH47201 - Martingales Theory for Finance	1	Optional	15	4
MATH48001 - Statistical Inference	1	Optional	15	4
MATH48011 - Linear Models with Nonparametric Regression	1	Optional	15	4
MATH48061 - Multivariate Statistics	1	Optional	15	4
MATH48091 - Statistical Computing	1	Optional	15	4
MATH48181 - Extreme Values and Financial Risk	1	Optional	15	4
MATH48191 - Statistical Modelling in Finance	1	Optional	15	4
MATH49111 - Scientific Computing	1	Optional	15	4
MATH62061 - Representation and Characters of Groups	1	Optional	15	4
MATH40082 - Computational Finance	2	Optional	15	4

Description	Semester	Requirement	Credit Rating	Level
MATH41012 - Fourier Analysis & Lebesgue Integration	2	Optional	15	4
MATH41022 - Analytic Number Theory	2	Optional	15	4
MATH42112 - Lie Algebras	2	Optional	15	4
MATH42132 - Algebraic Number Theory	2	Optional	15	4
MATH42142 - Analysis, Random Walks and Groups	2	Optional	15	4
MATH43042 - Godel's Theorems	2	Optional	15	4
MATH45122 - Transport Phenomena and Conservation Laws	2	Optional	15	4
MATH45132 - Stability Theory	2	Optional	15	4
MATH46052 - Approximation Theory and Finite Element Analysis	2	Optional	15	4
MATH46132 - Numerical Optimisation & Inverse Problems	2	Optional	15	4
MATH47112 - Brownian Motion	2	Optional	15	4
MATH48032 - Time Series Analysis and Financial Forecasting	2	Optional	15	4
MATH48052 - Generalised Linear Models and Survival Analysis	2	Optional	15	4
MATH48082 - Design and Analysis of Experiments	2	Optional	15	4

Description	Semester	Requirement	Credit Rating	Level
MATH48122 - Markov Chain Monte Carlo	2	Optional	15	4
MATH48132 - Longitudinal Data Analysis	2	Optional	15	4
MATH49102 - Stochastic Modelling in Finance	2	Optional	15	4