

Mathematics (3 Years) [BSc]

Year 3 Programme Structure

The third year of this degree programme consists of 120 credits of optional course units. At least 80 credits must be level 3 MATH course unit options in Mathematics, which you must choose from the list below. (This allows you to do some non-MATH course units if you want – see below.) You can access all course descriptions* via your 'My Manchester' student portal, and you are advised to check the timetables for all course units before selection.

It is also necessary that overall at least 100 credits must be level 3 (or level 4). There are level 4 MATH course units available which are 15-credit options so (for instance) you could choose to replace three level 3 course units (30 credits) by two at level 4 (30 credits); however, students are advised to think carefully before taking on material that may be more intellectually demanding and may require more pre-requisites, therefore required only for students with a previous year overall average of a 2(i) and above. For this reason it is often advisable to discuss taking a higher level course with the lecturer, and School approval will be required.

Students in year 3 can also take 10 or 20 credits at level 2 (for which approval is required – please complete the online course unit permission form) which offers you the opportunity to take a course unit you were not able to do in the second year (or to take a level 2 non-MATH course). You therefore have the flexibility to take some non-MATH course units ('outside' course units), in place of Mathematics course units, with permission. A list of recommended outside course units is available, but students can choose courses which are not on this list. (Usually students in year 3 will take level 2 outside courses which follow on from level 1 outside courses taken in year 2 and University College Course units – 2018/19 list available here.) The only constraints are that the course or courses must fit into your timetable without clashing with other courses you have chosen, and you must have the necessary pre-requisites, which are usually equivalent to A-level.) Students will need the permission of the Year Tutor and the appropriate 'course unit permission form' must be completed.

For all issues to do with course selection you are strongly advised to consult with your Academic Advisor.

*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 3 course units

Description	Semester	Requirement	Credit Rating	Level
MATH20201 - Algebraic Structures 1	1	Optional	10	2
MATH20701 - Probability 2	1	Optional	10	2
MATH30011 - Project (Semester One)	1	Optional	10	3
MATH31001 - Linear Analysis	1	Optional	10	3
MATH32001 - Group Theory	1	Optional	10	3
MATH32011 - Commutative Algebra	1	Optional	10	3
MATH32071 - Number Theory	1	Optional	10	3
MATH32091 - Combinatorics and Graph Theory	1	Optional	10	3
MATH33011 - Mathematical Logic	1	Optional	10	3
MATH34001 - Applied Complex Analysis	1	Optional	10	3
MATH34011 - Asymptotic Expansions & Perturbation Methods	1	Optional	10	3
MATH35001 - Viscous Fluid Flow	1	Optional	10	3
MATH35021 - Elasticity	1	Optional	10	3
MATH36001 - Matrix Analysis	1	Optional	10	3
MATH36041 - Essential Partial Differential Equations	1	Optional	10	3
MATH36061 - Convex Optimization	1	Optional	10	3

Description	Semester	Requirement	Credit Rating	Level
MATH37001 - Martingales with Applications to Finance	1	Optional	10	3
MATH38001 - Statistical Inference	1	Optional	10	3
MATH38141 - Regression Analysis	1	Optional	10	3
MATH38161 - Multivariate Statistics and Machine Learning	1	Optional	10	3
MATH38181 - Extreme Values and Financial Risk	1	Optional	10	3
MATH30002 - Mathematics Education	2	Optional	10	3
MATH30022 - Project (Semester 2)	2	Optional	10	3
MATH31042 - Fractal Geometry	2	Optional	10	3
MATH31052 - Topology	2	Optional	10	3
MATH31082 - Riemannian Geometry	2	Optional	10	3
MATH32032 - Coding Theory	2	Optional	10	3
MATH32052 - Hyperbolic Geometry	2	Optional	10	3
MATH32062 - Algebraic Geometry	2	Optional	10	3
MATH34032 - Green's Functions, Integral Equations and Applications	2	Optional	10	3
MATH35012 - Wave Motion	2	Optional	10	3
MATH35032 - Mathematical Biology	2	Optional	10	3
MATH35082 - Symmetry in Geometry and Nature	2	Optional	10	3

Description	Semester	Requirement	Credit Rating	Level
MATH36022 - Numerical Analysis II	2	Optional	10	3
MATH36032 - Problem Solving by Computer	2	Optional	10	3
MATH37012 - Markov Processes	2	Optional	10	3
MATH38032 - Time Series Analysis	2	Optional	10	3
MATH38052 - Generalised Linear Models	2	Optional	10	3
MATH38072 - Medical Statistics	2	Optional	10	3
MATH39032 - Mathematical Modelling in Finance	2	Optional	10	3
MATH30000 - Double Project	1 and 2	Optional	20	3