

Full year programme.

You must take papers (courses) to the value of 4.0 units. The unit value of courses is in brackets.

Paper 1 – one course to the value of 0.5 units from:

- MA407: Algorithms and Computation (0.5)
- MA421: Advanced Algorithms (0.5)

Papers 2/3/4 – courses to the value of 1.5 units from:

- MA402: Game Theory I* (0.5)
- MA408: Discrete Mathematics and Graph Theory (0.5)
- MA409: Continuous Time Optimisation (0.5)
- MA410: Information Communication and Cryptography (0.5)
- MA411: Probability and Measure (0.5)
- MA412: Functional Analysis and its Applications (0.5)
- MA413: Games of Incomplete Information (0.5)
- MA414: Stochastic Analysis (0.5)
- MA420: Quantifying Risk and Modelling Alternative Markets (0.5)
- MA421: Advanced Algorithms [only if not taken under Paper 1] (0.5)

Papers 5/6 – courses to the value of 1.0 units from:

- EC484: Econometric Analysis (1.0)
- EC487: Advanced Microeconomics (1.0)
- FM402: Financial Risk Analysis (0.5)
- FM441: Derivatives (0.5)
- FM442: Quantitative Methods in Finance and Risk Analysis** (0.5)
- FM492: Principles of Finance*** (1.0)
- GV4A3: Social Choice Theory and Democracy (0.5)
- MG4A7: Efficient Algorithms for Hard Optimisation Problems (0.5)
- MG4C1: Techniques of Operational Research (0.5)
- MG4C5: Computer Modelling: Applied Statistics and Simulation (0.5)
- MG4C6: Mathematical Programming: Theory and Algorithms (0.5)
- MG4C8: Model Building in Mathematical Programming (0.5)
- MG4E1: Algorithmic Techniques for Data Mining (0.5)
- MG408: Combinatorial Optimisation (0.5)
- ST409: Stochastic Processes (0.5)
- ST418: Non-Linear Dynamics and the Analysis of Real Time Series (0.5)
- ST422: Time Series (0.5)
- Another half-unit from the lists for papers 2/3/4 above, or any other paper with the approval of the Programme Director and the teacher responsible for the course (0.5)

Paper 7:

- MA498 Dissertation in Mathematics (1.0)

Notes:

* This option will not be available to those who have already studied MA300 and MA301 or who have studied this subject as part of an undergraduate degree.

** Students taking this course can apply for a place on FM457 Computational Tools in Finance for MSc Students, a non-assessed computer course.

*** Students must seek permission from the Department of Finance to take this course. They will be required to complete an online form about their background in mathematics, statistics, and economics. The forms will be reviewed and approved or rejected, or a student may be asked to provide more information.

**** Students may not take MA415, MA416 or MA417