MSc in Operations Research & Analytics

Programme Code: TMORA
Department: Mathematics
For students starting this programme of study in **2025/26**

Guidelines for interpreting programme regulations

Classification scheme for the award of a taught master's degree (four units)
Exam sub-board local rules

Full-year programme. As below, students must take three compulsory courses (Papers 1-3, 1.5 units in all), options to the value of 1.5 units (Papers 4-6), and a project or dissertation (Paper 7, 1 unit).

Please note that places are limited on some optional courses. Admission onto any particular course is not guaranteed and may be subject to timetabling constraints and/or students meeting specific prerequisite requirements and course size capping.

Paper   Course number, title (unit value)

Paper 1   MA423 Optimisation Theory and Modelling (0.5) #

Paper 2   MA424 Stochastic Modelling and Simulation (0.5) #

Paper 3   MA429 Algorithmic Techniques in Machine Learning (0.5) #

Paper 4   Courses to the value of 0.5 unit(s) from the following:

MA402 Mathematical Game Theory (0.5) #

MA407 Algorithms and Computation (0.5) #

MA421 Topics in Algorithms (0.5) #

MA427 Nonlinear Optimisation and Applications (0.5) #

MA428 Combinatorial Optimisation (0.5) #

MA434 Algorithmic Game Theory (0.5) #

MA437 Learning Dynamics in Games (0.5) *new course for 2025/26*

Paper 5   Courses to the value of 0.5 unit(s) from the following:

Another course from those listed under Paper 4.

MA431 Advanced Topics in Operations Research and Applicable Mathematics (0.5)

MA433 Mathematics of Networks (0.5) #

MA436 Mathematics of Cryptocurrencies and the Blockchain (0.5) *new course for 2025/26*

ST418 Advanced Time Series Analysis (0.5) #

ST447 Data Analysis and Statistical Methods (0.5) #

ST449 Artificial Intelligence (0.5) #

ST451 Bayesian Machine Learning (0.5)

ST455 Reinforcement Learning (0.5) #

ST456 Deep Learning (0.5) #

ST457 Graph Data Analytics and Representation Learning (0.5) #

ST463 Stochastic Simulation, Training, and Calibration (0.5) #

Paper 6   Courses to the value of 0.5 unit(s) from the following:

Another course from those listed under Papers 4 & 5.

FM445 Portfolio Management (0.5)

MG422 Thinking Strategically (0.5)

MG455 Decisions, Biases and Nudges (0.5)

ST459 Quantum Computation and Information (0.5)

Any other MSc-level course, with approval of the Programme Director and the teacher responsible for the course.

Paper 7   MA425 Project in Operations Research & Analytics (1.0) # *or*

MA426 Dissertation in Operations Research & Analytics (1.0)

Prerequisite Requirements and Mutually Exclusive Options

means there may be prerequisites for this course. Please view the course guide for more information.

Students may choose at most one of: MA402, MA434, MG422.

Upon supplying satisfactory evidence to the course convenor of relevant previous courses taken, a student may be exempted from a course specified in Paper 1, 2, or 3, at the discretion of the Programme Director. A student shall replace such a course with another module, subject to approval of the Programme Director. Exemption from more than one course is rare.

Please note that not all optional courses are available every year.

Note for prospective students:
For changes to graduate course and programme information for the next academic session, please see the graduate summary page for prospective students. Changes to course and programme information for future academic sessions can be found on the graduate summary page for future students.