FACULTY OF SCIENCE

DEPARTMENT OF MATHEMATICS AND STATISTICS

ADVANCED MATHEMATICAL MODELLING

Master of Science in Advanced Mathematical Modelling
Postgraduate Diploma in Advanced Mathematical Modelling
Postgraduate Certificate in Advanced Mathematical Modelling

These regulations are to be read in conjunction with General Academic Regulations - Postgraduate Taught Degree Programme Level.

Admission

1. The General Academic Regulations - Postgraduate Taught Degree Programme Level shall apply subject to the following requirements. Applicants shall possess:

    i. a degree (or in the case of direct entry to the degree of MSc, a first or second class Honours degree) from a United Kingdom university (in Mathematics or a closely related subject); or
    ii. a qualification deemed by the Programme Director acting on behalf of Senate to be equivalent to (i) above.

2. In all cases, applicants whose first language is not English, shall be required to demonstrate an appropriate level of English.

Mode of Study

3. The programmes are available by full-time study only.

Place of study

4. On-campus or “face to face learning in an approved physical location” is the default Mode of Delivery.

Curriculum

5. All students shall undertake an approved curriculum as follows:

    i. for the degree of MSc no fewer than 180 credits including MM966 Research Project.
    ii. for the Postgraduate Diploma no fewer than 120 credits
    iii. for the Postgraduate Certificate no fewer than 60 credits

Module Code	Module Title	Level	Credits
MM502	Modelling and Simulation with Applications to Financial Derivatives	5	20
MM503	Applicable Analysis 3	5	20
MM505	Fluids and Waves	5	20
MM506	Finite Element Methods for Boundary Value Problems and Approximation	5	20
MM554	Applied Mathematics Methods 1	5	20
MM508	Mathematical Biology and Marine Population Modelling	5	20
MM509	Mathematical Introduction to Networks	5	20

MM571	Numerical and Deep Learning Methods for Partial Differential Equations	5	20
MM521	Mathematics of Machine Learning	5	20
MM967	Optimisation: Theory	5	10
MS987	Optimisation for Analytics	5	10
MM909	Medical Statistics	5	20
MM911	Effective Statistical Consultancy	5	10
MM912	Survey Design and Analysis	5	10
MM913	Quantitative Risk Analysis	5	10
MM915	Spatial Statistics	5	10
MM960	Statistical Machine Learning	5	10
MM962	Data Dashboard with RShiny	5	10
MM964	Foundations of Statistics	5	10
MM969	Deep Learning	5	10
MM966	Research Project*	5	60

*For the degree of MSc only

With the approval of the Programme Director, students may substitute other Level 5 modules offered by the University up to a maximum of 40 credits.

Not all modules on this list will be available in each academic year. Please check your programme handbook for confirmation of this modules will run.

Examination, Progress and Final Assessment

6. See General Academic Regulations - Postgraduate Taught Degree Programme Level.

7. The final award will be based on performance in examinations, coursework and the Project where undertaken.

Award

8. **Degree of MSc**: In order to qualify for the award of the degree of MSc in Advanced Mathematical Modelling, a candidate must have accumulated no fewer than 180 credits from the programme curriculum, of which 60 must have been awarded in respect of the Research Project MM966.

9. **Postgraduate Diploma**: In order to qualify for the award of the Postgraduate Diploma in Advanced Mathematical Modelling, a candidate must have accumulated no fewer than 120 credits from the modules of the programme.

10. **Postgraduate Certificate**: In order to qualify for the award of the Postgraduate Certificate in Advanced Mathematical Modelling a candidate must have accumulated no fewer than 60 credits from the modules of the programme.