Programme Regulations: 2025/26

Programme Titles:
MMath (Hons) Mathematics - UCAS Code: G103
MMath (Hons) Mathematics with Placement Year - Code: 1168U
MMathStat (Hons) Mathematics & Statistics - UCAS Code: GGC3
MMathStat (Hons) Mathematics & Statistics with Placement Year - Code: 1169U

Notes
(i) These programme regulations should be read in conjunction with the University's Taught Programme Regulations.

(ii) All optional modules are offered subject to the constraints of the timetable and to any restrictions on the number of students who may be taught on a particular module. Not all modules may be offered in all years and they are listed subject to availability.

(iii) Unless otherwise stated under 'Type', modules are not core.

(iv) A compulsory module is a module which a student is required to study.

(v) A core module is a module which a student must pass, and in which a fail mark may neither be carried nor compensated; such modules are designated by the Board of studies as essential for progression to a further stage of the programme or for study in a further module.

(vi) All modules are delivered in Linear mode unless stated otherwise.

(vii) Where a module is subject specific, code M refers to modules in Mathematics and code S refers to modules in Statistics.

(viii) To qualify for the degree of Master of Mathematics and Statistics (MMathStat) with Honours, candidates shall study modules with a total credit value of at least 180 with subject code 'S', including the Stage 4 project, in the lists of modules at Stages 2, 3 and 4. To qualify for the degree of Master of Mathematics (MMath) with Honours, candidates shall study modules with a total credit value of at least 180 with subject code 'M', including the Stage 4 project, in the lists of modules at Stages 2, 3 and 4.
(ix) Students are not recruited to 1168U/1169U. Rather a G103/GGC3 candidate may transfer to 1168U/1169U by the end of week 5 of Semester 2 of Stage 2, subject to the agreement of the Degree Programme Director.
(x) If a candidate meets the requirements for one of the three year BSc degrees, Mathematics (G100) or Mathematics & Statistics (GG13), they may transfer to that programme at any time before the start of the Semester 2 examination period in Stage 3.
(xi) Programme transfers for Tier 4 students may be restricted by current Tier 4 rules. Please refer to the Visa Team for advice.

1. Stage 1
All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS1606	Introductory Algebra	20	20	0	4	Core	
MAS1614	Real Analysis	10	0	10	4	Core	
MAS1616	Introduction to Probability and Statistics	20	0	20	4	Core	
MAS1701	Logic, Sets & Counting	10	10	0	4		
MAS1702	Number Systems	10	0	10	4		
MAS1803	Problem Solving with Python	10	10	0	4		
MSP1612	Introductory Calculus and Differential Equations	20	20	0	4	Core	
MSP1613	Multivariable Calculus	10	0	10	4	Core	
MSP1804	Dynamics	10	0	10	4		

2. Stage 2

All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS2701	Linear Algebra	10	10	0	5		M
MAS2702	Complex Analysis	10	10	0	5		M
MAS2703	Groups and Rings	10	0	10	5		M
MAS2901	Statistical Inference	10	10	0	5		S
MAS2909	Probability	10	10	0	5		S
MAS2910	Regression	10	0	10	5		S
MSP2801	Vector Calculus	10	10	0	5		M
MSP2802	Differential Equations, Transforms and Waves	10	10	0	5		M
MSP2803	Fluid Dynamics I	10	0	10	5		M

(b) GGC3 candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS2907	Stochastic Processes	10	0	10	5		S
MAS2908	Data Visualisation	10	0	10	5		S

(c) G103 candidates shall take 30 credits of optional modules and GGC3 candidates shall take 10 credits of optional modules, normally selected from the following lists.

G103 candidates must not select more than 20 credits from each list (i), (ii) and (iii):

(i)

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS2713	Curves and Surfaces	10	0	10	6		M
MAS2714	Coding Theory	10	0	10	6		M

(ii)

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MSP2020	Principles of Quantum Mechanics	10	0	10	5		M
MAS2806	Numerical Methods with Python	10	0	10	5		M
MSP2815	Mathematical Biology	10	0	10	5		M

(iii)

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
DSC2001*	Frontiers in Data Science A	10	0	10	5		S
MAS2907	Stochastic Processes	10	0	10	5		S
MAS2908	Data Visualisation	10	0	10	5		S

(*) Note: There may be limited places on this module and therefore there is no guarantee that students will be accepted.

In order to progress into Stage 3, candidates are required to obtain an average over all modules taken at Stage 2 of at least 60.

3. Stage 3

(a) All candidates shall take the following compulsory module:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS3094	Mathematical and Skills Group Project	20	10	10	6		

(b) GGC3 candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS3927	Mathematical Statistics	10	10	0	6		S
MAS3928	Statistical Modelling	10	10	0	6		S
MAS3929	Bayesian Statistics and Decision Theory	10	10	0	6		S

(c) G103 candidates shall take 100 credits of optional modules and GGC3 candidates shall take 70 credits of optional modules, normally selected from the following list:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
HSC3100	Clinical Trials	10	0	10	6		S
HSC3101	Decision Modelling for Health Data Science	10	0	10	6		S
HSC3102	Topics in Medical Statistics and Health Data Science	10	0	10	6		S
MAS2713	Curves and Surfaces	10	0	10	6		M
MAS2714	Coding Theory	10	0	10	6		M
MAS3701	Group Theory	10	10	0	6		M
MAS3702	Linear Analysis	10	0	10	6		M
MAS3705	Matrix Analysis	10	10	0	6		M
MAS3706	Metric Spaces and Topology	10	10	0	6		M
MAS3707	Number Theory & Cryptography	20	10	10	6		M
MAS3716	Measure Theory	10	10	0	6		M
MAS3904	Stochastic Financial Modelling	10	0	10	6		S
MAS3908	Experimental Design	10	0	10	6		S

MAS3919	Foundations of Machine Learning	10	0	10	6		S
MAS3921	Extreme Value Theory	10	0	10	6		S
MAS3923	Time Series	10	0	10	6		S
MAS3924	Survival Analysis	10	0	10	6		S
MAS3925	Statistical Genetics	10	0	10	6		S
MAS3927	Mathematical Statistics	10	10	0	6		S
MAS3928	Statistical Modelling	10	10	0	6		S
MAS3929	Bayesian Statistics and Decision Theory	10	10	0	6		S
MSP3044	Quantum Information	10	10	0	6		M
MSP3801	Methods for Differential Equations	10	10	0	6		M
MSP3803	Fluid Dynamics II	10	10	0	6		M
MSP3804	Relativity and Fundamental Particles	10	10	0	6		M
MSP3808	Hydrodynamic and Climate Instabilities	10	10	0	6		M
MSP3809	Variational Methods & Lagrangian Dynamics	10	0	10	6		M

Notes

(i) A module in list (c) above cannot be taken if a very similar module was taken at Stage 2. (Module Outline Forms will provide details of overlapping modules.)

(ii) A candidate wanting to specialise in Pure Mathematics in Stage 4, by taking modules in list (b)(i) of Stage 4 and a Pure MMath project, should take MAS3701, MAS3702 and either MAS3706 in Stage 3 or MAS8706 in Stage 4.

(iii) A candidate wanting to specialise in Applied Mathematics in Stage 4, by taking modules in list (b)(ii) of Stage 4 and an Applied MMath project, should take MAS3801, MSP2020 and either MSP3804 in Stage 3 or MAS8804 in Stage 4.

(iv) Optional modules will not necessarily be available in all combinations. In particular, we anticipate that only one module can be chosen from each of the following pairs of modules:

MAS3716& MAS3921;

MAS3702 & MAS3908;

MSP2020 & MAS3925.

(d) Alternative optional modules to those listed above may be selected with a total value of not more than 20 credits. In particular, modules may be selected from the following:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS3092*	Global Education in Mathematics and Statistics	10	0	10	6		
MSP2020	Principles of Quantum Mechanics	10	0	10	5		M
MSP2815	Mathematical Biology	10	0	10	5		M
NCL3007*	Career Development for Final Year Students	20	10	10	6		
PHY3032	Classical Fields	10	0	10	6		

(*) Note: Approval of the Degree Programme Director must be given to select these modules. There are limited places on these modules and therefore there is no guarantee that students will be accepted.

(i) A module in list (d) above cannot be taken if the same module was taken at Stage 2

In order to progress into Stage 4, candidates are required to obtain an average over all modules taken at Stage 3 of at least 60.

1. Year 3 (Placement Year – 1168U/1169U only)
On completion of Stage 3 and before entering Stage 4, candidates may as part of their studies for the degree spend a year in a placement with an approved organisation. Permission to undertake a placement is subject to the approval of the Degree Programme Director. Students who are required to re-sit their Stage 3 assessment must delay the start of their placement until they have done so. Students who fail Stage 3 may not complete a placement year.

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
NCL3000	Careers Service Placement Year Module	120	60	60	6		

2. Stage 4
(a) All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS8091	MMath Project	40	20	20	7		M/S

Note: MAS8091 is subject M for G103 candidates and subject S for GGC3 candidates.

(b) All G103 candidates shall take one optional block of modules selected from the following list:

(i)

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MAS8716	Measure Theory	10	10	0	7		M
MAS8755	Lie Groups and Lie Algebras	20	10	10	7		M
MAS8756	Functional Analysis	10	0	10	7		M

(ii)

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
MSP8810	Geophysical & Astrophysical Fluids	20	20	0	7		M
MSP8811	General Relativity	20	0	20	7		M
MSP8812	Quantum Fluids	20	20	0	7		M

(c) All GGC3 candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
CSC8621	Computing Foundations of Data Science	10	10	0	7	Block	S
CSC8628	Image Processing	10	10	0	7	Block	S
CSC8635	Machine Learning with project	10	10	0	7	Block	S

Note: with the permission of the Degree Programme Director, alternative combinations may be selected.

(d) All candidates shall select the remaining credits of optional modules from the following list:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
HSC8100	Clinical Trials with Advanced Topics	10	0	10	7		S
HSC8101	Decision Modelling for Health Data Science with Advanced Topics	10	0	10	7		S
HSC8102	Advanced Topics in Medical Statistics and Health Data Science	10	0	10	7		S
MAS8701	Group Theory	10	10	0	7		M
MAS8702	Linear Analysis	10	0	10	7		M
MAS8705	Matrix Analysis	10	10	0	7		M
MAS8706	Metric Spaces and Topology	10	10	0	7		M
MAS8716	Measure Theory	10	10	0	7		M
MAS8755	Lie Group and Lie Algebras	20	10	10	7		M
MAS8756	Functional Analysis	10	0	10	7		M
MAS8804	Relativity and Fundamental Particles	10	10	0	7		M
MAS8808	Hydrodynamic and Climate Instabilities	10	10	0	7		M
MAS8809	Variational Methods & Lagrangian Dynamics	10	0	10	7		M
MSP8810	Geophysical & Astrophysical Fluids	20	20	0	7		M
MSP8811	General Relativity	20	0	20	7		M
MSP8812	Quantum Fluids	20	20	0	7		M
MAS8607	Foundations of Machine Learning with Advanced Topics	10	0	10	7		S
MAS8608	Experimental Design with Advanced Topics	10	0	10	7		S
MAS8610	Extreme Value Theory with Advanced Topics	10	0	10	7		S
MAS8612	Survival Analysis with Advanced Topics	10	0	10	7		S
MAS8613	Time Series with Advanced Topics	10	0	10	7		S
MAS8614	Stochastic Financial Modelling with Advanced Topics	10	0	10	7		S

MAS8615	Statistical Genetics with Advanced Topics	10	0	10	7		S

Notes

(ii)A module in list (d) above cannot be taken if a very similar module was taken at Stage 3. (Module Outline Forms will provide details of overlapping modules.)

(iii)Optional modules will not necessarily be available in all combinations. In particular, we anticipate that only one module can be chosen from each of the following pairs of modules:

MAS8716 & MAS8610;

MAS8702 & MAS8608.

3. Assessment methods

Details of the assessment pattern for each module are explained in the module outline.

4. Degree classification

Candidates will be assessed for degree classification on the basis of all the modules taken at Stages 2, 3 and 4 with the weighting of the Stages being 1:2:3 for Stage 2, Stage 3 and Stage 4 respectively. The Placement Year will not be used in the classification of 1168U/1169U candidates.