These programme regulations should be read in conjunction with the University's core regulations for undergraduate programmes, and the marking and classification conventions for undergraduate programmes.

MMath Mathematics and Statistics (G114)

MMath Mathematics and Statistics with Year Abroad (G115)

MMath Mathematics and Statistics with Placement (G116)

1. This programme is available at Durham City, in a full-time mode of study.

Level 1 (Certificate)

2. Candidates shall study and be assessed in the following modules:

		Credit value
Analysis I #	MATH1051	20
Calculus I (Maths Hons) #	MATH1081	20
Linear Algebra I (Maths Hons) #	MATH1091	20
Dynamics and Relativity I	MATH1627	10
Probability I #	MATH1597	10
Programming I	MATH1587	10
Statistics I #	MATH1617	10

3. Candidates shall also study and be assessed in EITHER the module

		Credit value
Discrete Mathematics	MATH1031	20

OR module(s) to the value of 20 credits offered by any other Boards of Studies (including up to 20 credits of appropriate language modules offered by the University's Centre for Foreign Language Study).

Level 2 (Diploma)

4. Candidates shall study and be assessed in the following modules:

		Credit value
Mathematical Methods II	MATH2811	20
Statistical Inference II	MATH2761	20
Data Science and Statistical Modelling II	MATH2801	20

5. Candidates shall also study and be assessed in modules to the value of 20 credits from List 2A and 40 credits from List 2B:

List 2A:		Credit value
Algebra II	MATH2781	20
Computational Mathematics II	MATH2731	20
List 2B:		
Complex Analysis II	MATH2791	20
Methods of Mathematical Physics II	MATH2741	20
Probability II	MATH2751	20

Open module(s) to the value of 20 credits offered by another Board of Studies (including a language module offered by the University's Centre for Foreign Language Study) may be substituted for one module in either List 2A or List 2B.

Year Abroad (Year 3)

6. This programme is only available to students admitted initially to the MMath Mathematics and Statistics (G114) programme (or equivalent). Candidates wishing to transfer to MMath Mathematics and Statistics with year abroad (G115) must:

a. successfully complete Level 1 of the MMath Mathematics and Statistics (G114) programme (or equivalent) with an average mark of 55%, and be eligible to progress to Level 2 of the programme;

b. during Level 2 study, have applied to the Board of Studies in Mathematical Sciences to be admitted to the MMath Mathematics and Statistics with year abroad (G115) and have had their application approved by that Board;

c. secure an exchange opportunity with an approved international partner institution of the University;

d. successfully complete Level 2 of their existing programme (G114 or equivalent) so as to be eligible to progress to Level 3;

e. where tuition at the Overseas Partner Institution is in a foreign language, candidates must have taken at least 20 credits in an appropriate language module at level 1.

Placement (Year 3)

7. This programme is only available to students admitted initially to the MMath Mathematics and Statistics (G114) programme (or equivalent). Candidates wishing to transfer to MMath Mathematics and Statistics with Placement (G116) must:

   a. successfully complete Level 1 of the MMath Mathematics and Statistics (G114) programme (or equivalent) with an average mark of 55%, and be eligible to progress to Level 2 of the programme;

   b. during Level 2 study, have applied to the Board of Studies in Mathematical Sciences to be admitted to the MMath Mathematics and Statistics with Placement (G116) and have had their application approved by that Board;

   c. secure a Placement Year opportunity or opportunities comprising at least 40 weeks of professional-level work experience, agreed with the Departmental Placement Year Convenor and Faculty Placement Manager;

   d. successfully complete Level 2 of their existing programme (G114 or equivalent) so as to be eligible to progress to Level 3..

8. During the third year candidates shall undertake an approved placement in industry, or in an institution or organisation undertaking research, for 40 weeks.

Level 3 (Degree)

9. Candidates shall study and be assessed in modules to the value of at least 60 credits from Lists 3AS and 3BS, where at least 20 credits are taken from list 3AS:

List 3AS:		**Credit value**
Advanced Statistical Modelling	MATH3411	20
Bayesian Computation and Modelling	MATH3421	20
List 3BS:		
Decision Theory	MATH3071	20
Machine Learning and Neural Networks	MATH3431	20
Mathematical Finance	MATH3301	20
Stochastic Processes	MATH3251	20

10. Candidates shall also study and be assessed in modules to the value of at most 60 credits **EITHER** from List 3C, which is guaranteed to be timetable compatible with lists 3AS and 3BS:

List 3C:		**Credit value**
Analysis III	MATH3011	20
Cryptography and Codes III	MATH3401	20
Mathematical Biology III	MATH3171	20
Mathematics into Schools	MATH3481	20
Number Theory III	MATH3031	20
Partial Differential Equations III	MATH3291	20
Operations Research III	MATH3141	20
Fluid Mechanics III	MATH3101	20

OR, subject to timetable compatibility, may choose from any modules offered at Level 3 by the Department of Mathematical Sciences, and up to 20 credits of open modules from those offered by any other Board of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).

Level 4 (Degree)

11. Candidates shall study and be assessed in one of the following modules:

		Credit value
Project IV	MATH4072	40
Internship Project IV	MATH4352	40

12. Candidates shall also study and be assessed in modules to the value of at least 40 credits from List 4AS:

List 4AS:		**Credit value**
Spatio-Temporal Statistics	MATH4341	20
Clinical Trials	MATH4407	10
Deep Learning and Artificial Intelligence	MATH4267	10
High-Dimensional Data Analysis	MATH4287	10
Non-Parametric Statistics	MATH4391	20
Uncertainty Quantification	MATH4337	10
Advanced Probability IV	MATH4431	20
Stochastic Analysis IV	MATH4261	20

13. Candidates shall also study and be assessed in modules to the value of at most 40 credits **EITHER** from List 4B, which is guaranteed to be timetable compatible with list 4AS:

List 4B:		**Credit value**
Functional Analysis and Applications IV	MATH4371	20
Advanced Mathematical Biology IV	MATH4411	20
Topics in Combinatorics IV	MATH4281	20
Topics in Algebra and Geometry IV	MATH4151	20
General Relativity IV	MATH4051	20
Ergodic Theory IV	MATH4361	20

OR, subject to timetable compatibility, may choose from any modules offered at Level 4 by the Department of Mathematical Sciences, and up to 20 credits of Level 4 modules chosen from those offered by any other Board of Studies

Year Abroad

14. Students admitted to the MMath Mathematics and Statistics (G114) are able to apply to transfer to the MMath Mathematics and Statistics with Year Abroad programme (G115). Students undertaking the MMath Mathematics and Statistics with Year Abroad programme (G115) will undertake an approved year abroad chosen in consultation with the programme director and the host.

15. Students who the Board of Examiners for Mathematics deem to have made satisfactory progress on the placement year will continue to Level 3 of the MMath Mathematics and Statistics with Year Abroad (G115). Students who have not made satisfactory progress on the year abroad will not be permitted to continue on the MMath Mathematics and Statistics with Year Abroad (G115) programme, but must instead proceed to Level 3 of the MMath Mathematics and Statistics (G114) programme.

Placement

16. Students admitted to the MMath Mathematics and Statistics (G114) are able to apply to transfer to the MMath Mathematics and Statistics with Placement programme (G116). Students undertaking the MMath Mathematics and Statistics with Placement programme (G116) will undertake an approved placement chosen in consultation with the programme director and the host.

17. Students who the Board of Examiners for Mathematics deem to have made satisfactory progress on the placement year will continue to Level 3 of the MMath Mathematics and Statistics with Placement (G116). Students who have not made satisfactory progress on the placement will not be

permitted to continue on the MMath Mathematics and Statistics with Placement (G116) programme, but must instead proceed to Level 3 of the MMath Mathematics and Statistics (G114) programme.

Assessment, progression and award

18. Modules marked with the # symbol must be passed at 40% or above in order to progress to the next level of study.
19. Students who fail to achieve the standard required under the Core Regulations for progression to Level 3 of the MMath but who achieve the standard required for progression to Level 3 of a Bachelors programme may progress to Level 3 of the BSc in Mathematics in accordance with the Core Regulations.
20. A student who is qualified to progress from Level 2 to Level 3 of the MMath but wishes to transfer to Level 3 of the BSc Mathematics shall be permitted to do so.
21. Students whose achievement at the end of Level 3 does not qualify them to proceed to Level 4 may be awarded the degree of BSc in Mathematical Sciences at either Honours or Ordinary level in accordance with the Core Regulations for the award of a Bachelors degree.
22. Students whose achievement at the end of Level 4 does not qualify them to be awarded the degree of MMath may be awarded the degree of BSc in Mathematical Sciences with Honours in accordance with the Core Regulations for the award of a Bachelors degree.