

These programme regulations should be read in conjunction with the University's [core regulations for postgraduate programmes](#), and the [marking and classification conventions for postgraduate programmes](#).

## MSc Mathematical Sciences (G1K509)

1. Location: Durham City
2. Duration: 12 months (full-time)
3. This programme is suspended until October 2027.

### Programme structure

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

	<b>Credit value</b>
Dissertation ~ <a href="#">MATH51460</a>	60

5. Candidates shall also study and be assessed in modules to the value of 120 credits from either **List A (Pure Mathematics)**, **List B (Probability)**, **List C (Applied Mathematics and Mathematical Physics)**, or **List D (Mathematical Finance)**. Please note excluded combinations under item 6.

	<b>Credit value</b>
<b>List A (Pure Mathematics)</b>	
Algebraic Topology	<a href="#">MATH41120</a> 20
Analysis	<a href="#">MATH41220</a> 20
Ergodic Theory	<a href="#">MATH43320</a> 20
Functional Analysis and Applications	<a href="#">MATH42920</a> 20
Geometry	<a href="#">MATH41920</a> 20
Number Theory	<a href="#">MATH41620</a> 20
Partial Differential Equations	<a href="#">MATH41720</a> 20
Representation Theory	<a href="#">MATH42220</a> 20
Riemannian Geometry	<a href="#">MATH41320</a> 20
Topics in Algebra and Geometry	<a href="#">MATH41520</a> 20
Topics in Combinatorics	<a href="#">MATH43920</a> 20
<b>List B (Probability)</b>	
Advanced Probability	<a href="#">MATH44320</a> 20
Stochastic Processes	<a href="#">MATH43020</a> 20
Stochastic Analysis	<a href="#">MATH43720</a> 20
Topics in Combinatorics	<a href="#">MATH43920</a> 20
Ergodic Theory	<a href="#">MATH43320</a> 20
Partial Differential Equations	<a href="#">MATH41720</a> 20
Analysis	<a href="#">MATH41220</a> 20
Functional Analysis and Applications	<a href="#">MATH42920</a> 20
<b>List C (Applied Mathematics and Mathematical Physics)</b>	
Advanced Quantum Theory	<a href="#">MATH41020</a> 20
Analysis	<a href="#">MATH41220</a> 20
Functional Analysis and Applications	<a href="#">MATH42920</a> 20
General Relativity	<a href="#">MATH40820</a> 20
Partial Differential Equations	<a href="#">MATH41720</a> 20
Riemannian Geometry	<a href="#">MATH41320</a> 20
Solitons	<a href="#">MATH41420</a> 20
Statistical Mechanics	<a href="#">MATH42320</a> 20
Superstrings	<a href="#">MATH43820</a> 20
Advanced Mathematical Biology	<a href="#">MATH44020</a> 20
Geophysical and Astrophysical Fluids	<a href="#">MATH44120</a> 20

#### List D (Financial Mathematics)

Stochastic Analysis	<a href="#">MATH43720</a>	20
Stochastic Processes	<a href="#">MATH43020</a>	20
Mathematical Finance	<a href="#">MATH40920</a>	20
Partial Differential Equations	<a href="#">MATH41720</a>	20
Advanced Probability	<a href="#">MATH44320</a>	20
Analysis	<a href="#">MATH41220</a>	20
Functional Analysis and Applications	<a href="#">MATH42920</a>	20

6. Candidates in the **List A (Pure Mathematics)** pathway may replace up to 20 credits with modules from **List E**. Candidates in the **List B (Probability)** pathway may replace up to 20 credits with modules from **List F**. Candidates in the **List C (Mathematical Physics)** pathway may replace up to 20 credits with modules from **List G**. Candidates in the **List D (Mathematical Finance)** pathway may replace up to 20 credits with modules from **List H**.

**Credit value**

#### List E (Pure Mathematics - Additional Modules)

Cryptography and Codes	<a href="#">MATH30120</a>	20
Differential Geometry	<a href="#">MATH30320</a>	20
Galois Theory	<a href="#">MATH30420</a>	20
Geometric Topology	<a href="#">MATH33020</a>	20

#### List F (Probability - Additional Modules)

Decision Theory	<a href="#">MATH30220</a>	20
Operations Research	<a href="#">MATH30820</a>	20

#### List G (Applied Mathematics and Mathematical Physics - Additional Modules)

Differential Geometry	<a href="#">MATH30320</a>	20
Dynamical Systems	<a href="#">MATH30720</a>	20
Geometry of Mathematical Physics	<a href="#">MATH31220</a>	20
Mathematical Biology	<a href="#">MATH30920</a>	20
Quantum Mechanics	<a href="#">MATH31120</a>	20
Fluid Mechanics	<a href="#">MATH31620</a>	20

#### List H (Financial Mathematics - Additional Modules)

Decision Theory	<a href="#">MATH30220</a>	20
Operations Research	<a href="#">MATH30820</a>	20

7. The following module combinations are excluded in all pathways:
- Analysis MATH 41220 AND Functional Analysis and Applications MATH 42920
  - Analysis MATH 41220 AND Ergodic Theory MATH 43320
  - Geometric Topology MATH 33020 AND Algebraic Topology MATH 41120
  - Differential Geometry MATH 30320 AND Riemannian Geometry MATH 41320
  - Quantum Mechanics MATH 31120 AND Advanced Quantum Theory MATH 41020
  - Geometry of Mathematical Physics MATH 31220 AND Advanced Quantum Theory MATH 41020
  - Geophysical and Astrophysical Fluids MATH 44120 AND Fluid Mechanics MATH 31620
  - Advanced Mathematical Biology MATH 44020 AND Mathematical Biology MATH 30920
8. It may be possible to combine modules from different lists, subject to timetable compatibility (note that modules within each list are guaranteed to be timetable compatible) and approval from the Programme Director.

#### Assessment, Progression and Award

9. Candidates must pass at least 80 credits of MATH modules, as given in lists A – H, before progressing to MATH 51460 (Dissertation). Candidates who have failed 60 credits at the first attempt will therefore not begin work on their Dissertation module until the results of their resit

attempts are known and it can be confirmed by the Board of Examiners that they have satisfied this requirement. Such candidates will automatically be given a 3 month extension on the submission date for their Dissertation.

10. Candidates who, following any resit attempts as allowed under the Core Regulations, have not passed at least 80 credits of MATH modules as given in lists A-H, will be required to withdraw without progressing to the Dissertation, although they may qualify for the exit award of a Postgraduate Certificate.
11. For the award of a Postgraduate Diploma candidates must gain a total of 120 credits.
12. For the award of a Postgraduate Certificate candidates must gain a total of 60 credits.
13. Modules marked with ~ must be passed at 50% or above; a mark of 40-49% cannot be compensated.