

These programme regulations should be read in conjunction with the University's [core regulations for undergraduate programmes](#).

### **Master of Mathematics (G103)**

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:

		<b>Credit value</b>
Calculus and Probability I #	<a href="#">MATH1061</a>	20
Linear Algebra I #	<a href="#">MATH1071</a>	20
Analysis I #	<a href="#">MATH1051</a>	20
Problem Solving and Dynamics I	<a href="#">MATH1041</a>	20

3. Candidates shall also study and be assessed in modules to the value of 40 credits from any Board of Studies (including appropriate credit-bearing 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:

		<b>Credit value</b>
Complex Analysis II	<a href="#">MATH2011</a>	20
Analysis in Many Variables II	<a href="#">MATH2031</a>	20

5. Candidates shall also study and be assessed in modules to the value of 80 credits from List A:

<b>List A:</b>		<b>Credit value</b>
Algebra II	<a href="#">MATH2581</a>	20
Codes and Geometric Topology II	<a href="#">MATH2141</a>	20
Codes and Actuarial Mathematics II	<a href="#">MATH2131</a>	20
Elementary Number Theory and Cryptography II	<a href="#">MATH2591</a>	20
Mathematical Physics II	<a href="#">MATH2071</a>	20
Numerical Analysis II	<a href="#">MATH2051</a>	20
Probability and Actuarial Mathematics II	<a href="#">MATH2161</a>	20
Probability and Geometric Topology II	<a href="#">MATH2151</a>	20
Statistical Concepts II	<a href="#">MATH2041</a>	20

#### **Level 3 (Degree)**

6. Candidates shall study and be assessed in EITHER modules to the value of 120 credits from list B OR modules to the value of 100 credits from list B and one open 20 credit module chosen 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):

<b>List B1 (2013-2014):</b>		<b>Credit value</b>
Algebraic Geometry III	<a href="#">MATH3321</a>	20
Analysis III	<a href="#">MATH3011</a>	20
Bayesian Statistics III	<a href="#">MATH3341</a>	20
Continuum Mechanics III	<a href="#">MATH3101</a>	20
General Relativity III	<a href="#">MATH3331</a>	20
Representation Theory III	<a href="#">MATH3371</a>	20
Stochastic Processes III	<a href="#">MATH3251</a>	20

<b>List B2 (2014-2015):</b>		<b>Credit value</b>
Approximation Theory and Solution to Odes III	<a href="#">MATH3081</a>	20
Elliptic Functions III	<a href="#">MATH3221</a>	20
Geometry III	<a href="#">MATH3201</a>	20
Number Theory III	<a href="#">MATH3031</a>	20

Probability III	<a href="#">MATH3211</a>	20
Solitons III	<a href="#">MATH3231</a>	20
Statistical Mechanics III	<a href="#">MATH3351</a>	20
Topics in Statistics III	<a href="#">MATH3161</a>	20
<b>List B3:</b>		<b>Credit value</b>
Decision Theory III	<a href="#">MATH3071</a>	20
Differential Geometry III	<a href="#">MATH3021</a>	20
Dynamical Systems III	<a href="#">MATH3091</a>	20
Electromagnetism III	<a href="#">MATH3181</a>	20
Galois Theory III	<a href="#">MATH3041</a>	20
Mathematical Biology III	<a href="#">MATH3171</a>	20
Mathematical Finance III	<a href="#">MATH3301</a>	20
Mathematics Teaching III	<a href="#">MATH3121</a>	20
Operations Research III	<a href="#">MATH3141</a>	20
Partial Differential Equations III	<a href="#">MATH3291</a>	20
Quantum Mechanics III	<a href="#">MATH3111</a>	20
Statistical Methods III	<a href="#">MATH3051</a>	20
Topology III	<a href="#">MATH3281</a>	20

Lists B1 and B2 will be offered in alternate years. List B3 will run in both years.

#### Level 4 (Degree)

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

Mathematical Project IV	<a href="#">MATH4072</a>	<b>Credit value</b> 40
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8. Candidates shall also study and be assessed in modules to the value of 80 credits from List C:

<b>List C1 (2013-2014):</b>		<b>Credit value</b>
Algebraic Geometry IV	<a href="#">MATH4011</a>	20
Analysis IV	<a href="#">MATH4201</a>	20
Bayesian Statistics IV	<a href="#">MATH4031</a>	20
Continuum Mechanics IV	<a href="#">MATH4081</a>	20
General Relativity IV	<a href="#">MATH4051</a>	20
Representation Theory IV	<a href="#">MATH4241</a>	20
Stochastic Processes IV	<a href="#">MATH4091</a>	20

<b>List C2 (2014-2015):</b>		<b>Credit value</b>
Approximation Theory and Solutions to ODEs IV	<a href="#">MATH4221</a>	20
Elliptic Functions IV	<a href="#">MATH4151</a>	20
Geometry IV	<a href="#">MATH4141</a>	20
Number Theory IV	<a href="#">MATH4211</a>	20
Operations Research IV (2012-2013 only)	<a href="#">MATH4251</a>	20
Probability IV	<a href="#">MATH4131</a>	20
Solitons IV	<a href="#">MATH4121</a>	20
Statistical Mechanics IV	<a href="#">MATH4231</a>	20
Topics in Statistics IV	<a href="#">MATH4071</a>	20

<b>List C3:</b>		<b>Credit value</b>
Advanced Quantum Theory IV	<a href="#">MATH4061</a>	20
Algebraic Topology IV	<a href="#">MATH4161</a>	20
Mathematical Finance IV	<a href="#">MATH4181</a>	20
Partial Differential Equations IV	<a href="#">MATH4041</a>	20
Riemannian Geometry IV	<a href="#">MATH4171</a>	20
Modules up to the value of 20 credits from another board of studies, subject to the agreement of the Mathematics Board of Studies		20

Lists C1 and C2 will be offered in alternate years. List C3 will run in both years.

#### Assessment, progression and award

9. Modules marked with a # must be passed at 40% or above in order to progress to the Ordinary degree at the next Level.
10. 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 at either Honours or Ordinary level in accordance with the Core Regulations.
11. 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.
12. Students whose achievement at the end of Level 3 does not qualify them to proceed to Level 3 may be awarded the degree of BSc Mathematics at either Honours or Ordinary level in accordance with the Core Regulations for the award of a Bachelors degree.
13. 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 Mathematics with Honours in accordance with the Core Regulations for the award of a Bachelors degree.