

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](#).

## Master of Mathematics (European Studies) (G101)

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 I #	<a href="#">MATH1061</a>	20
Linear Algebra I #	<a href="#">MATH1071</a>	20
Analysis I #	<a href="#">MATH1051</a>	20
Programming I	<a href="#">MATH1587</a>	20
Dynamics I	<a href="#">MATH1607</a>	20
Probability I	<a href="#">MATH1597</a>	20
Statistics I	<a href="#">MATH1617</a>	20

3. Candidates shall also study and be assessed in modules to the value of 20 credits to be chosen from (i) appropriate language modules offered by the University's Centre for Foreign Language Study or (ii) the following list:

		<b>Credit value</b>
Discrete Mathematics	<a href="#">MATH1031</a>	20
Genetics	<a href="#">BIOL1171</a>	20
New Venture Creation	<a href="#">BUSI1151</a>	20
Molecules in Action	<a href="#">CHEM1061</a>	20
Accounting and Finance in Business	<a href="#">ECON1041</a>	20
Learning and Teaching	<a href="#">EDUC1471</a>	20
Planet Under Pressure	<a href="#">GEOG1061</a>	20
Understanding Earth Sciences	<a href="#">GEOL1101</a>	20
Introduction to Astronomy	<a href="#">PHYS1081</a>	20
Introduction to Psychology I	<a href="#">PSYC1071</a>	20

### 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
Monte Carlo II	<a href="#">MATH2667</a>	10
Elementary Number Theory II	<a href="#">MATH2617</a>	10
Geometric Topology II	<a href="#">MATH2627</a>	10
Mathematical Physics II	<a href="#">MATH2071</a>	20
Mathematical Modelling II	<a href="#">MATH2637</a>	10
Numerical Analysis II	<a href="#">MATH2051</a>	20
Probability II	<a href="#">MATH2647</a>	10
Special Relativity and Electromagnetism II	<a href="#">MATH2657</a>	10
Statistical Concepts II	<a href="#">MATH2041</a>	20

### Year Abroad (Level 3, Year 3)

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

		<b>Credit value</b>
MMath (Euro) Level 3 Year Abroad	<a href="#">MATH3986</a>	120

7. This programme is only available to students admitted initially to the MMath Mathematics (G103) programme (or equivalent). Candidates wishing to transfer to MMath with year abroad (G101) must:
- successfully complete Level 1 of the MMath Mathematics (G103) programme (or equivalent) with an average mark of 55%, and be eligible to progress to Level 2 of the honours programme;
  - before the beginning of the first term of Level 2 study, have applied to the Board of Studies in Mathematical Sciences to be admitted to the MMath Mathematics with European Studies (G101) and have had their application provisionally approved by that Board;
  - during the first term of Level 2 study, have their application formally approved by that Board upon successful completion of the Mathematical Sciences preparatory placement course.
  - 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.

#### Level 4 (Degree)

8. 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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9. Candidates shall also study and be assessed in modules to the value of 80 credits from List C:

<b>List B2 (2020-2021):</b>		<b>Credit value</b>
Numerical Differential Equations IV (£)	<a href="#">MATH4221</a>	20
Geometry IV (£)	<a href="#">MATH4141</a>	20
Probability IV (¥)	<a href="#">MATH4131</a>	20
Topics in Statistics IV (¥)	<a href="#">MATH4071</a>	20

<b>List B1 (2021-2022):</b>		<b>Credit value</b>
Bayesian Statistics IV (\$)	<a href="#">MATH4031</a>	20
Stochastic Processes IV (\$)	<a href="#">MATH4091</a>	20

<b>List B3:</b>		<b>Credit value</b>
Advanced Quantum Theory IV	<a href="#">MATH4061</a>	20
Algebraic Topology IV	<a href="#">MATH4161</a>	20
Topics in Algebra and Geometry IV	<a href="#">MATH4151</a>	20
General Relativity IV	<a href="#">MATH4051</a>	20
Mathematical Finance IV (^)	<a href="#">MATH4181</a>	20
Partial Differential Equations IV	<a href="#">MATH4041</a>	20
Representation Theory IV	<a href="#">MATH4241</a>	20
Riemannian Geometry IV	<a href="#">MATH4171</a>	20
Statistical Mechanics IV	<a href="#">MATH4231</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 B1 and B2 will be offered in alternate years. List B3 will run in both years.

#### Assessment, progression and award

- Modules marked with a # must be passed at 40% or above in order to progress to the Ordinary degree at the next Level.
- Modules marked with (£) are available in 2020-2021 only.
- Modules marked with (\$) are available in 2021-2022 only.
- Modules marked with (^) are available thru 2021-2022.
- Modules marked with (¥) are available in 2020-2021 and 2022-2023 only.

15. 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.
16. 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.
17. During the third year students must study and be assessed in a mathematics programme (together, possibly, with other topics) in a European university under the Socrates-ERASMUS programme. The student is also required to write an essay (about 2000 words, i.e. 4 pages) at the end of year 3 in a non-English language approved by the Director of Education. The essay will be assessed independently by two members of the Durham Department of Mathematical Sciences fluent in the language, and the mark will count 10% of the overall mark of the year. The results obtained will count fully towards the award of the MMath(Euro).
18. Students whose achievement at the end of Level 3 does not qualify them to proceed to Level 4 may transfer to BSc Mathematics (with year abroad) in accordance with the Core Regulations for the award of that degree.
19. The choice of modules at Level 4 is subject to the approval of the course director.
20. 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.