

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](#).

BSc Mathematics (G100), BSc Mathematics with Placement (G108), BSc Mathematics with Year Abroad (G109)

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 |
|--------------------|--------------------------|---------------------|
| Calculus I # | MATH1061 | 20 |
| Linear Algebra I # | MATH1071 | 20 |
| Analysis I # | MATH1051 | 20 |
| Programming I | MATH1587 | 10 |
| Dynamics I | MATH1607 | 10 |
| Probability I | MATH1597 | 10 |
| Statistics I | MATH1617 | 10 |

3. Candidates shall also study and be assessed in modules to the value of 20 credits offered by any 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 |
|-------------------------------|--------------------------|---------------------|
| Complex Analysis II | MATH2011 | 20 |
| Analysis in Many Variables II | MATH2031 | 20 |

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

| List A: | | Credit value |
|--|--------------------------|---------------------|
| Algebra II | MATH2581 | 20 |
| Data Science and Statistical Computing II | MATH2687 | 10 |
| Elementary Number Theory II | MATH2617 | 10 |
| Geometric Topology II | MATH2627 | 10 |
| Markov Chains II | MATH2707 | 10 |
| Mathematical Physics II | MATH2071 | 20 |
| Mathematical Modelling II | MATH2637 | 10 |
| Numerical Analysis II | MATH2051 | 20 |
| Probability II | MATH2647 | 10 |
| Special Relativity and Electromagnetism II | MATH2657 | 10 |
| Statistical Inference II | MATH2711 | 20 |
| Statistical Modelling II | MATH2697 | 10 |

Year 3 (Placement Year)

6. During the third year candidates shall undertake an approved placement in industry, or in an institution or organisation undertaking research, for 40 weeks.
7. This programme is only available to students admitted initially to the BSc Mathematics (G100) programme (or equivalent). Candidates wishing to transfer to BSc Mathematics with placement (G108) must:
 - a. successfully complete Level 1 of the BSc Mathematics (G100) programme (or equivalent) with an average mark of 55%, and be eligible to progress to Level 2 of the honours programme;

- b. 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 BSc Mathematics with placement (G108) and have had their application provisionally approved by that Board.

Year Abroad (Year 3)

8. This programme is only available to students admitted initially to the BSc Mathematics (G100) programme (or equivalent). Candidates wishing to transfer to BSc Mathematics with year abroad (G109) must:
- successfully complete Level 1 of the BSc Mathematics (G100) 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 BSc Mathematics with year abroad (G109) 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 3 (Degree)

9. Candidates shall study and be assessed in the following module to the value of 40 credits:

| | | Credit value |
|-------------|--------------------------|---------------------|
| Project III | MATH3382 | 40 |

10. Candidates shall study and be assessed in **EITHER** modules to the value of 80 credits from List B **OR** modules to the value of 60 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):

List B1 (2021-2022):

| | | Credit value |
|-------------------------|--------------------------|---------------------|
| Bayesian Statistics III | MATH3341 | 20 |
| Statistical Methods III | MATH3051 | 20 |

List B2:

| | | Credit value |
|--|--------------------------|---------------------|
| Analysis III | MATH3011 | 20 |
| Cryptography and Codes III | MATH3401 | 20 |
| Decision Theory III | MATH3071 | 20 |
| Differential Geometry III | MATH3021 | 20 |
| Dynamical Systems III | MATH3091 | 20 |
| Fluid Mechanics III | MATH3101 | 20 |
| Galois Theory III | MATH3041 | 20 |
| Geometry III | MATH3201 | 20 |
| Geometry of Mathematical Physics III | MATH3471 | 20 |
| Mathematical Biology III | MATH3171 | 20 |
| Mathematical Finance III | MATH3301 | 20 |
| Number Theory III | MATH3031 | 20 |
| Operations Research III | MATH3141 | 20 |
| Partial Differential Equations III | MATH3291 | 20 |
| Public Engagement in Mathematical Sciences | MATH3461 | 20 |
| Quantum Computing III | MATH3391 | 20 |
| Quantum Mechanics III | MATH3111 | 20 |
| Solitons III | MATH3231 | 20 |
| Stochastic Processes III | MATH3251 | 20 |
| Topology III | MATH3281 | 20 |

List B3 (2022-2023 onwards):

| | | Credit value |
|--------------------------------------|--------------------------|---------------------|
| Advanced Statistical Modelling | MATH3411 | 20 |
| Bayesian Computation and Modelling | MATH3421 | 20 |
| Machine Learning and Neural Networks | MATH3431 | 20 |

List B1 will not be offered again

11. Modules marked with a # must be passed at 40% or above in order to progress to the next Level of the Ordinary degree.

Year Abroad

12. Students admitted to the BSc Mathematics (G100) are able to apply to transfer to the BSc Mathematics (with Year Abroad) programme (G109). Students undertaking the BSc Mathematics (with Year Abroad) programme (G109) will undertake an approved exchange in an overseas university taking a course of study chosen in consultation with the programme director and the host institution.
13. Students who the Board of Examiners for Mathematics deem to have made satisfactory progress on the year abroad will continue to Level 3 of the BSc Mathematics (with Year Abroad) (G109). Students who have not made satisfactory progress on the year abroad will not be permitted to continue on the BSc Mathematics (with Year Abroad) (G109) programme, but must instead proceed to Level 3 of the BSc Mathematics (G100) programme.

Placement

14. During the third year candidates shall undertake an approved placement in industry, or in an institution or organisation undertaking research, for 40 weeks.
15. Students who the Board of Examiners for Mathematical Sciences deem to have made satisfactory progress on the placement year will continue to Level 3 of the BSc Mathematics (with Placement) (G108). Students who have not made satisfactory progress on the placement will not be permitted to continue on the BSc Mathematics (with Placement) (G108) programme, but must instead proceed to Level 3 of the BSc Mathematics (G100) programme.