

Pure Mathematics and Mathematical Logic (1 Year) [MSc]

Aims of the Programme

The programme aims to: provide you with training in a wide range of modern developments in pure mathematics and mathematical logic; encourage a sophisticated, rigorous and critical approach to mathematics; and to prepare you to follow a career as a professional mathematician in industry and/or research.

Structure of the Programme

Full-time students

During the first two semesters, you will undertake the taught element of the programme. This comprises of a number of taught course units and project work. Each taught course unit, including the project, is worth 15 credits (except for the double project, which is worth 30 credits). You are free to choose which courses you do, subject to the following:

- You must take 90 credits of taught course units (for the MSc and Diploma programmes) and 60 credits (for the Certificate).
- MSc and Diploma students must write a project in either the first or second semester. If you decide to write the project in the first semester, then you may (subject to approval by the project supervisor and the course director) extend it to a double project in the second semester.

It is recommended that you take 45 credits in each semester. You will have the opportunity to discuss which courses you will take when you meet your personal tutor at the beginning of each semester. You will make the final decision as to which courses you will take for credit at exam registration.

Part-time students

Similar arrangements hold if you are a part-time student. The part-time programme lasts 2 years. You will be expected to study 90 credits of taught material (including a compulsory project) during the 4 semesters, subject to the same restrictions as for full-time students listed above. You will also be expected to write a 90-credit dissertation (for MSc students) or a 30-credit report (for Diploma students).

The exact arrangements will vary for each part-time student, depending on which course units you want to take and any of your other commitments. You will have spoken with the programme director either before commencing the course or during the induction week to decide on which course units you will study and when. For example, you may wish to take two course units in the first two semesters, write your project over the summer of your first year, take another course unit in semester 3, and finally write the dissertation during semester 4 and over the summer of the second year.

The Project

You are required to write a project during the taught component of the programme, written under the guidance of your project supervisor. A single project is worth 15 credits. If you write the project during the first semester then, if you and your project supervisor feel that it is going well and you wish to take the subject further, you may extend the project into a 30-credit project, to be written over the two semesters.

Assessment is based primarily on the written project, but a short oral exam will also take place.

More details about the project, such as advice on selecting a topic, the amount of work required, and the method of assessment are given on the project unit's website.

You can also find some informal advice at:

<http://www.maths.manchester.ac.uk/raag/MSc/MSc.php>

Dissertations and Reports

For MSc students the dissertation involves you working closely with a member of staff, normally on a topic of current research interest, and then writing and submitting a dissertation. The dissertation may be expository or may contain original research. Normally, you will write your dissertation on a topic related to your project (in which case your project supervisor will normally become your dissertation supervisor), but it is possible to write your dissertation in another area, provided suitable supervision is available.

You should discuss your choice of dissertation topic with your personal tutor or with the programme director by the end of the second semester at the latest. You will normally commence work on your dissertation immediately after the May/June examination period, although some preliminary reading may be done during the second semester.

For Diploma students, the report involves writing a more limited account on a topic of mathematical interest. Normally you will write your report on a topic related to that in your project, and your project supervisor will normally supervise your report.

Course descriptions on each course unit includes information on assessment criteria's, lecturer, syllabus, learning outcomes, etc., and they are available from the 'My Course' tab in 'My Manchester' by searching the subject code or you can browse them from the Schools 'Study' website.

Level 6 course units

Description	Semester	Requirement	Credit Rating	Level
MATH61061 - Differentiable Manifolds	1	Optional	15	6
MATH61201 - Project Semester One	1	Optional	15	6
MATH62041 - Noncommutative Algebra	1	Optional	15	6
MATH62061 - Representation and Characters of Groups	1	Optional	15	6
MATH62121 - Galois Theory	1	Optional	15	6
MATH63021 - Set Theory	1	Optional	15	6
MATH63051 - Model theory	1	Optional	15	6
MATH61012 - Fourier Analysis and Lebesgue Integration	2	Optional	15	6
MATH61022 - Analytic Number Theory	2	Optional	15	6
MATH61202 - Project Semester Two	2	Optional	15	6
MATH62112 - Lie Algebras	2	Optional	15	6
MATH62132 - Algebraic Number Theory	2	Optional	15	6
MATH62142 - Analysis, Random Walks and Groups	2	Optional	15	6
MATH63042 - Godel's Theorems	2	Optional	15	6
MATH61000 - Double Project	1 and 2	Optional	30	6