

Department of Mathematics

About the department

The Mathematics Department at Royal Holloway is a lively and friendly place with an international reputation for the quality of its teaching and research. Academic staff are active in pioneering research which is making an impressive impact on the world stage. This strong research culture influences our curriculum, helping students to keep in touch with the latest developments in the field.

Mathematics modules at Royal Holloway cover a diverse spectrum from abstract pure mathematics to applications in information security, theoretical physics, finance and statistics.

Entry requirements

The modules listed below are open to all Study Abroad, International and Erasmus students, subject to any required previous knowledge or qualifications, as stated in the module outlines below.

Each module is either 15 or 30 UK credits ($\frac{1}{2}$ or 1 unit) and starts in either the Autumn Term (September) or the Spring Term (January). The information contained in the module outlines on the following pages is correct at the time of publication but may be subject to change as part of our policy of continuous improvement and development.

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royalholloway.ac.uk/Mathematics



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Module options for visiting students

Module code	Module name	15 or 30 UK credits	Start date	Module description/pre-requisites
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Level 1 courses

MT1100	Introduction to Geometry	15 UK credits	September 2020	Pre-requisites: A-level mathematics or equivalent <u>Syllabus information</u>
MT1210	Introduction to Applied Mathematics	15 UK credits	January 2021	Pre-requisites: MT1710 or equivalent <u>Syllabus information</u>
MT1300	Statistical Methods I	15 UK credits	September 2020	Pre-requisites: A-level maths or equivalent <u>Syllabus information</u>
MT1710	Calculus I	15 UK credits	September 2020	Pre-requisites: A-level mathematics or equivalent <u>Syllabus information</u>
MT1720	Calculus II	15 UK credits	January 2021	Pre-requisites: MT1710 or equivalent <u>Syllabus information</u>
MT1810	Introduction to Pure Mathematics	15 UK credits	September 2020	Pre-requisites: A-level mathematics or equivalent <u>Syllabus information</u>
MT1820	Linear Algebra I	15 UK credits	January 2021	Pre-requisites: MT1810 or equivalent <u>Syllabus information</u>
MT1940	Real Analysis I	15 UK credits	January 2021	Pre-requisites: A-level mathematics or equivalent <u>Syllabus information</u>



Module options for visiting students

Level 2 courses

MT2320	<i>Probability Theory</i>	15 UK credits	September 2020	Pre-requisites: MT1720 and MT1810 or equivalent <u>Syllabus information</u>
MT2500	<i>Scientific Programming</i>	15 UK credits	September 2020	Pre-requisites: MT1720 and MT1820 or equivalent <u>Syllabus information</u>
MT2630	<i>Graphs and Optimisation</i>	15 UK credits	September 2020	Pre-requisites: MT1810 and MT1820 or equivalent <u>Syllabus information</u>
MT2720	<i>Ordinary Differential Equations & Fourier Analysis</i>	15 UK credits	September 2020	Pre-requisites: MT1710, MT1720 & MT1820 or equivalent <u>Syllabus information</u>
MT2940	<i>Real Analysis II</i>	15 UK credits	September 2020	Pre-requisites: MT1940 or equivalent <u>Syllabus information</u>
MT2220	<i>Vector Calculus</i>	15 UK credits	January 2021	Pre-requisites: MT1710 and MT1720 or equivalent <u>Syllabus information</u>
MT2300	<i>Statistical Methods II</i>	15 UK credits	January 2021	Pre-requisites: MT1300 or equivalent <u>Syllabus information</u>
MT2710	<i>Systems of Differential Equations</i>	15 UK credits	January 2021	Pre-requisites: MT1820 or equivalent <u>Syllabus information to be confirmed</u>
MT2800	<i>Linear Algebra II</i>	15 UK credits	January 2021	Pre-requisites: MT1820 or equivalent <u>Syllabus information</u>
MT2830	<i>Ring Theory</i>	15 UK credits	January 2021	Pre-requisites: MT 1810 and MT1820 or equivalent <u>Syllabus information</u>
MT2900	<i>Complex Analysis</i>	15 UK credits	January 2021	Pre-requisites: MT1710, MT1720 and MT1810 or equivalent <u>Syllabus information</u>



Module options for visiting students

Level 3 courses

From 2020-21 onwards, certain combinations of year 3 modules can no longer be taken together. Each of the B1-B3 module baskets in the table below consists of 2 or 3 modules that will run in the same set of timeslots and, therefore, are mutually exclusive; that is to say, from each basket you can choose **at most one** module. This is a constraint introduced to simplify and improve the time-tabling.

MT3610	<i>Error Correcting Codes</i>	15 UK credits	September 2020	Pre-requisites: MT1820 or MT2800 or equivalent <u>Syllabus information</u>
MT3470	<i>Financial Mathematics I</i>	15 UK credits	September 2020	Pre-requisites: MT1720 and (MT1300 or MT2320) or equivalent <u>Syllabus information</u>
MT3540	<i>Combinatorics</i>	15 UK credits	September 2020	Pre-requisites: MT2630 or equivalent <u>Syllabus information</u>
MT3620	<i>Cryptography I</i>	15 UK credits	September 2020	Pre-requisites: MT1820 or equivalent and some Probability <u>Syllabus information</u>

B1: One of:

MT3270	<i>Applications of Vector Calculus</i>	15 UK credits	September 2020	Pre-requisites: MT2220 or equivalent <u>Syllabus information</u>
MT3340	<i>Time Series Analysis</i>	15 UK credits	September 2020	Pre-requisites: MT1300 and MT2300) or equivalent <u>Syllabus information</u>
MT3860	<i>Group Theory</i>	15 UK credits	September 2020	Pre-requisites: MT2630 or equivalent <u>Syllabus information</u>



Module options for visiting students

B2: One of:

MT3260	Quantum Theory I	15 UK credits	September 2020	<u>Syllabus information</u>
MT3850	Field Theory	15 UK credits	September 2020	Pre-requisites: MT2800 and MT2830 or equivalent <u>Syllabus information</u>

B3: One of:

MT3360	Markov Chains and Applications	15 UK credits	September 2020	Pre-requisites: MT2320 or equivalent <u>Syllabus information</u>
MT3970	Knot Theory	15 UK credits	September 2020	<u>Syllabus information</u>

