G103: Mathematics

Undergraduate MMath 2019

Essentials

UCAS code	G103
Degree	MMath
Mode of study	Full Time
Duration	4 Years
Location	Durham City (www.durham.ac.uk/study/location/durham.city)
A-Level	A*A*A
BTEC	D*D*D
International Baccalaureate	38
Alternative qualifications	• Other UK qualifications (www.dur.ac.uk/resources/undergraduate/UKequivalencies2017-18.pdf) • EU qualifications (www.dur.ac.uk/resources/undergraduate/apply/EUequivalencies2017-18.pdf) • International qualifications (www.dur.ac.uk/international/country.information/)
Contextual Offers	You may be eligible for an offer which is one or two grades lower than our standard entry requirements. Find out more (www.durham.ac.uk/study/ug/apply/contextualoffers/).
More information	Still have questions? (www.durham.ac.uk/study/askus/)
Department(s) Website	www.durham.ac.uk/mathematical.sciences

Course Summary

Description

The MMath is a four-year degree in mathematics. It offers a good basis for a wide range of employment, including a career as a professional mathematician or statistician in industry or if you wish to go on to do research in the higher education sector. You will spend one-third of your final year on project work, and consequently be able to study in depth a topic in which you are particularly interested. Specific module availability may change slightly but currently, the structure is as follows.

Year 1

The first year consists of 100 compulsory Mathematics credits:

- Analysis (20)
- Linear Algebra (20)
- Calculus (10)
- Differential equations and vector calculus (10)
- Programming (10)
- Dynamics (10)
- Probability (10)
- Statistics (10)

Together with a further 20 credits which can be chosen from:

- Discrete Mathematics (20)
- Any other available Sciences, Arts and Social Sciences modules (subject to prerequisites and timetabling).

In the Mathematics modules, topics that may be familiar from A-level (or equivalent) are expanded and developed to help you adjust to university life, provide a sound foundation for your Mathematics degree and enable you to make informed choices when picking modules from second year onwards.

Year 2

In the second year, you will choose six Maths modules.

You will take two compulsory modules:

- Complex Analysis
- Analysis in Many Variables.

Together with modules from a range which includes:

- Numerical Analysis
- Statistical Concepts
- Mathematical Physics
- Algebra
- A combination of two shorter courses on a wide range of mathematical topics – Elementary Number Theory, Probability, Mathematical Modelling, Geometric Topology, Actuarial Mathematics and Special Relativity & Electromagnetism.

At this stage, you can begin to specialise in areas of pure mathematics, applied mathematics, statistics and probability although you can also maintain a wide range of options for the third year.

Year 3

In the third year you choose six from a wide choice of around twenty modules covering a variety of topics in areas such as algebra, geometry, topology, applied mathematics, mathematical physics, statistics and probability, together with options including Mathematical Finance, Mathematical Biology and Mathematics Teaching. Many of these topics are closely linked to and informed by current research.

Year 4

In the fourth year, you take a double module project, giving you the opportunity to investigate a mathematical topic of interest. You will produce a written report and poster and give a short presentation. This develops your research and communication skills which are very important for future employment or postgraduate studies. You also choose four taught modules from a wide variety of topics as in year three. Some but not all of these modules follow on from options in year three, allowing you to both advance and broaden your mathematical expertise approaching research level.

Study Abroad

We are a part of the SOCRATES/ERASMUS programme which encourages students to study for part of their course in a university of another EU country. We have links with universities where courses are taught in French, German, Italian and Spanish – currently in Berlin, Bochum, Bologna, Chambery, Duisberg, Fribourg, Granada, Mons and Strasbourg. Admission to any of our partner universities via the Erasmus programme is contingent upon admittance by the host institution, availability of places, suitable modules in the corresponding academic year, and renewal of requisite exchange agreements.

This opportunity is available in the BSc Mathematics (European Studies) and MMath (European Studies) degrees.

Up-to-date details for each programme are available online
at www.durham.ac.uk/mathematical.sciences/undergraduate/degrees

Placement Year

You may be able to take a work placement. Find out more (www.durham.ac.uk/placements/).

Course Detail

To find out more about the modules available to students studying at Durham University please click here (www.durham.ac.uk/resources/faculty.handbook/degrees/frameworks/g103.pdf).

Please note: Current modules are indicative. Information for future academic years may change, for example, due to developments in the relevant academic field, or in light of student feedback.

Admissions Process

Subject requirements, level and grade

In addition to satisfying the University's general entry requirements, please note our offers consist of:

- Suitable performance on the University's Admission Test (*) in addition to grades A* and A in Mathematics and Further Mathematics at A level or equivalent (A* for either), together with grade A in a third A level or equivalent
- Alternatively, grades A*A* in Mathematics and Further Mathematics at A level or equivalent, together with grade A in a third A level or equivalent
- Alternatively, 1 in any STEP in addition to grades A* and A in Mathematics and Further Mathematics at A level or equivalent (A* for either) together with grade A in a third A level or equivalent
- Alternatively, suitable performance on the University's Admissions Test (*) in addition to grade A* in Mathematics and grade A in Further Mathematics at AS level or equivalent, and to two further A levels at grade A.
- We do not include General Studies or Critical Thinking as part of our offer.
- Typical IB score 38 to include 776 or 766 in higher level subjects. Higher level subject requirements apply, see above
- We strongly encourage applicants to sit the University's Admissions Test (*) if it is available to them, as we give a high weighting in our selection process to evidence of ability in Mathematics
- Please consult the University website for required evidence of English language proficiency
- We welcome applications from those with other qualifications equivalent to our standard entry requirements and from mature students with non-standard qualifications or who may have had a break in their study. Please contact our Admissions Selectors
- If you are an international student who does not meet the requirements for direct entry to this degree, you may be eligible to take an International Foundation Year pathway programme at the Durham University International Study Centre (www.durhamisc.com/?ch=uniweb&cc=signposting&cid=uniweb&utm_source=signposting&utm_medium=signposting&utm_campaign=uni
- We are pleased to consider applications for deferred entry, although we advise you to make sure that you take steps to maintain your level of mathematical expertise.

*(*) The University uses a national Admission Test in Mathematics (TMUA), in conjunction with the Cambridge Assessment Admissions Testing (CAAT). Test results will be sent by the CAAT directly to students at the end of November, and all information concerning the Test (including whether it was taken at all) will be provided to us by the applicants on an entirely voluntarily basis: suitable performance will entitle the applicant to the reduced A*AA offer. Taking part in the TMUA can therefore only increase the chances of receiving an offer. More information can be found on the Mathematics Department website, on the CAAT website and in most schools nationwide. (Schools that currently administer STEP and MAT will be automatically registered).*

Science A levels

Applicants taking Science A levels that include a practical component will be required to take and pass this as a condition of entry. This applies only to applicants sitting A levels with an English examination board.

English Language requirements

Please check requirements for your subject and level of study (www.durham.ac.uk/learningandteaching.handbook/1/3/3/)
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How to apply

www.durham.ac.uk/undergraduate/apply

Information relevant to your country

www.durham.ac.uk/international/country.information/

Fees and Funding

Full Time Fees

EU Student	£9,250.00 per year
Home Student	£9,250.00 per year
Island Student	£9,250.00 per year
International non-EU Student	£20,250.00 per year

The tuition fees shown for **home and EU** students are for one complete academic year of full time study and are set according to the academic year of entry. Fees for subsequent years of your course may rise in line with an inflationary uplift as determined by the government.

The tuition fees shown for **overseas** students are for one complete academic year of full time study, are set according to the academic year of entry, and remain the same throughout the duration of the programme for that cohort **(unless otherwise stated)**.

Please also check costs for colleges and accommodation (www.durham.ac.uk/undergraduate/accommodation/costs/).

Scholarships and funding

www.durham.ac.uk/undergraduate/finance

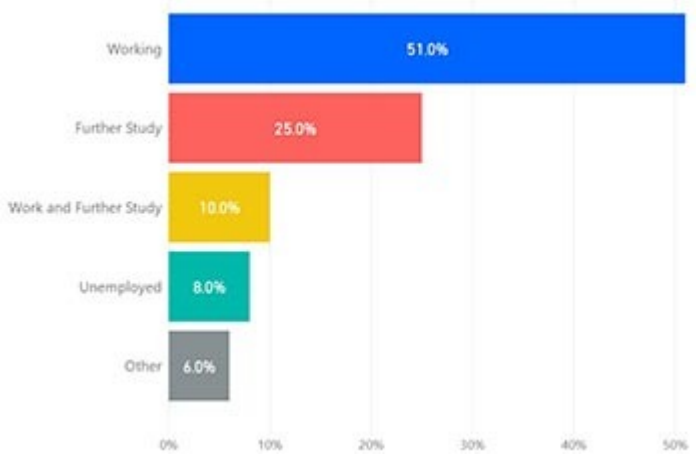
Career Opportunities

Mathematical Sciences

The overall aim of our honours mathematics programmes is to train our students as members of the community of professional mathematicians. Our programmes aim to develop students' capacity for critical thinking, problem-solving and independent learning, which will enable our students to meet a variety of challenges. We seek to develop both the generic and subject-specific skills required to equip our students to pursue a range of careers.

Opportunities for students to develop their understanding of mathematics as a professional practice and to prepare for work are not only provided by the formal degree programme. The department works closely with its students through the undergraduate MathSoc to attract exciting external speakers for its undergraduate colloquium programme.

> “Attributes gained from a Durham University degree include critical thinking, an analytical approach and ability to reason with information; alongside experience in building relationships and leading teams. These skills are put into daily practice in Professional Services and is why, year on year, we return to Durham University to recruit such talented individuals into our Firm.”



Of those students that left in 2017:

- **87%** of Mathematical Sciences leavers secured employment and/or have gone to further study within 6 months of graduating

Of those in employment:

- **93%** are in graduate level employment
- Median salary £28,500

Of those in further study:

- 93% are in graduate level study

(Source: Destinations of Leavers from Higher Education (DLHE) survey of 2016/17 graduates. The DLHE survey asks leavers from higher education what they are doing six months after graduation. Full definitions for the DLHE Record can be found here:www.hesa.ac.uk/support/definitions/destinations)

A significant number of Mathematical Sciences students progress onto higher level study following their degree. Some remain within their academic field of interest and pursue higher level research, notably at Durham but also other prestigious institutions including Bath, Cambridge, Imperial College London, Leeds and Sheffield. Others take a different route and pursue postgraduate programmes in related and non- related areas such as statistics, financial management, I.T software, environment/ conservation and teaching .

> “We have found Durham students to be adaptable, eager to learn and probably most important, able to get on with people very easily”

Employability development opportunities

- **Careers presentations** Presentations are delivered within the Department for the whole range of students, from the first year to penultimate and final year undergraduates.
- **Employability skills workshops** These are delivered by employers on a range of skills related topics to give you the best chance of success in your internship and graduate job applications. More information is available here (www.dur.ac.uk/careers/students/employability/events/).
- **Student led activities** The department encourages and initiates student led careers activities. They include the invitation of external speakers in the undergraduate colloquium as well as relevant workshops (recently on interview and assessment training and presentation skills). There is also a web page on careers created by students.
- **Careers information online** A DUO resource has been created with information for undergraduate and graduate students as well as staff. There are also forums for students to discuss experiences and for the department to publicise vacancies and opportunities.
- **Departmental advisors** As part of their general advice to students, departmental careers advisors encourage students to plan for their future careers, and can help students needing additional support who are encouraged to attend 1:1 Careers interviews (www.dur.ac.uk/careers/students/careerplanning/appointments/).
- **Careers Centre website** This is a very useful resource (www.dur.ac.uk/careers/) which details the full range of services available, along with excellent tips and advice to help you investigate the range of careers available.

Careers

Durham University Mathematical Sciences graduates progress into a diverse range of careers and employment sectors. The public, and private sectors are all represented with graduates entering professions such as Accountancy, Actuarial Consultancy, Tax Adviser, Software Engineering, Teaching , Retail Management, Investment Analyst, Insurance, Operations Research, Statistician, Recruitment Consulting, Armed Services Officer and Public Health Information Analyst.

Examples of high profile recent employers include Ernst & Young, Goldman Sachs, RAF, Mars, NHS, HMRC Lane Clark & Peacock, Co-operative Group, BT, Deloitte.

Open days and visits

Pre-application open day

Pre-application open days are the best way to discover all you need to know about Durham University. With representatives from all relevant academic and support service departments, and opportunities to explore college options, the open days provide our prospective undergraduates with the full experience of Durham University.

Please see the following page for further details and information on how to book a place:
www.durham.ac.uk/opendays

Discover Durham Tours

Discover Durham tours offer a brief introduction to the University. The tour begins at one of our undergraduate colleges, where you will receive an introductory talk from a member of college staff, followed by a tour of the college by current students.

www.durham.ac.uk/undergraduate/live/visit/discoverdurham

Overseas Visit Schedule

www.durham.ac.uk/international/office/meetus

Department Information

Mathematical Sciences

Overview

We offer stimulating, flexible and intellectually satisfying degrees.

Whether you are looking for a Single Honours degree, or wish to combine Mathematics with other subjects, Durham University offers a distinct blend of high-quality teaching and research along with excellent facilities and a stimulating environment for your studies. Whichever degree you choose, you will benefit from research-led education by experts in a wide variety of fields across pure mathematics, applied mathematics, statistics and probability.

With a modern curriculum, you will learn from the most cutting-edge and relevant teaching, enabling you to develop the mathematical knowledge and skills needed for further study or to gain employment in a wide range of sectors.

- Ranked joint 1st in the UK for internationally excellent and world-leading research impact *(REF 2014)*
- 92% of our Mathematical Sciences students found their course intellectually stimulating in the National Student Survey 2017 (sector-wide average 86%)
- 5th in *The Complete University Guide 2018*
- 4th in *The Times and Sunday Times University Guide 2018*.

Staff

For a current list of staff, please see the Mathematical Sciences department web pages (www.dur.ac.uk/mathematical.sciences/staff/).

Facilities

In addition to the large collection of mathematics books in the Bill Bryson Library, the college libraries may also have copies of recommended texts. The Department also provides a great deal of support material online and students are welcome to discuss any mathematical questions with their lecturers and tutors.

Website

www.durham.ac.uk/mathematical.sciences