Mathematics BSc

This three-year programme allows you to study varied aspects of mathematics to an advanced level, with core modules in algebra, analysis, applied mathematics and mathematical methods. With this core knowledge you may then build your degree, choosing options from over 30 specialist modules.

Key information

Programme starts
September 2018

Location
London, Bloomsbury

Degree benefits

// Gain transferable skills such as numeracy, problem-solving and logical thinking, which can lead to a large variety of interesting, diverse and well-paid careers.

// Together with specialist mathematics options, you will have the opportunity to take modules from outside the department, such as economics, philosophy, a foreign language, classics or history of art.

// Internationally renowned UCL Mathematics is home to world-leading researchers in a wide range of fields, especially geometry, spectral theory, number theory, fluid dynamics and mathematical modelling.

// Three of the six British winners of the Fields medal (the mathematician’s equivalent of the Nobel Prize) have associations with the department.

Research Excellence Framework (REF) 2014

The Research Excellence Framework, or REF, is the system for assessing the quality of research in UK higher education institutions. The 2014 REF was carried out by the UK’s higher education funding bodies, and the results used to allocate research funding from 2015/16.

// 82% rated 4* (‘world-leading’) or 3* (‘internationally excellent’)

Learn more about the scope of UCL’s research, and browse case studies, on our Research Impact website.

Degree structure

In each year of your degree you will take a number of individual modules, normally valued at 0.5 or 1.0 credits, adding up to a total of 4.0 credits for the year. Modules are assessed in the academic year in which they are taken. The balance of compulsory and optional modules varies from programme to programme and year to year. A 1.0 credit is considered equivalent to 15 credits in the European Credit Transfer System (ECTS).

You will gain a solid grounding in basic advanced mathematics - the core modules in the first year and a half of the programme. From then on you can specialise in your areas of interest. The study of the core modules is the prerequisite for the choice of options in the second half of the second year and the thirty or so options in the third year.

A large variety of interesting subjects can be studied, including geophysical fluid dynamics, mathematics in biological or financial contexts, number theory, probability and statistical applications, and geometry.

This programme is offered as a three-year BSc or a four-year MSci degree. The first two years of the programme are identical, and students are advised to apply for the MSci degree in the first instance, as it is possible to transfer to the BSc during the first three years.

YEAR ONE

Core or compulsory module(s)

// Algebra 1
// Algebra 2
// Analysis 1
// Analysis 2
// Applied Mathematics
// Mathematical Methods 1
// Newtonian Mechanics

Optional modules

// All first year modules are compulsory.

YEAR TWO

Core or compulsory module(s)

// Algebra 3: Further Linear Algebra
// Analysis 3: Complex Analysis
// Fluid Mechanics
// Mathematical Methods 3

Optional modules

// You will select four of the following optional modules, to the value of 2.0 credits:
// Algebra 4: Groups and Rings
// Analysis 4: Real Analysis
// Analytical Dynamics
// Computational Methods
// Electromagnetism
// Geometry and Groups
// Mathematical Methods 4
// Number Theory
// Probability and Statistics
// One of the modules may be replaced by a half-credit option outside the department, subject to approval.

FINAL YEAR

Core or compulsory module(s)

// All final-year modules are optional. Currently available mathematics options are described on the UCL Mathematics website.

Optional modules

// You will select:
// 3.0 credits of third-year mathematics options
// 1.0 credit of third-year mathematics or approved outside options
Your learning

Teaching is mainly carried out through lectures and small-group tutorials. Problem classes allow you to exercise the skills you have learned. In addition, an ‘office hours’ system for each programme allows you to meet with tutors on a one-to-one basis to review parts of the degree you find interesting or that need clarifying. A Student Mentor scheme runs in the department offering support and advice to first-years.

Assessment

Most modules are assessed by two-hour written examinations in the third term, with a small element (10%) of coursework assessment.

Your career

We aim to develop your skills in mathematical reasoning, problem-solving and accurate mathematical manipulation. You will also learn to handle abstract concepts and to think critically, argue logically and express yourself clearly.

A mathematics degree is highly valued by employers due to the skills in logical thinking, analysis, problem-solving and, of course, numeracy, that it develops.

First career destinations of recent graduates (2013-2015) of this programme include:

- Full-time student, PhD in Fluid Dynamics at the University of Cambridge
- Financial Analyst, HSBC
- Trader Analyst, Bank of America
- Aerospace Dynamics, Cranfield University
- Full-time student, MPhil in Finance at the University of Cambridge

Your application

Application for admission should be made through UCAS (the Universities and Colleges Admissions Service). Applicants currently at school or college will be provided with advice on the process; however, applicants who have left school or who are based outside the United Kingdom may obtain information directly from UCAS.

In addition to academic requirements, we expect you to demonstrate an understanding and enjoyment of the subject beyond the examined syllabus, through your reading and involvement in problem-solving activities. Evidence of your curiosity and perseverance in tackling puzzles, and your enjoyment of logical and abstract thinking, should be shown in your application.

If your application is sufficiently strong you will be invited to visit the department for an applicant afternoon. Alternatively, some invitations are for an academic interview. You will also be able to talk to current students and staff and will be given a tour.
**Entry requirements**

**A LEVELS**

**Grades**
A*A*A, or A*AA and a 1 in any STEP paper or distinction in Mathematics AEA

**Subjects**
Mathematics and Further Mathematics required at A*, or Mathematics at A* and Further Mathematics at A if STEP or AEA offered.

**GCSE**
English Language and Mathematics at grade C or 5. For UK-based students, a grade C or 5 or equivalent in a foreign language (other than Ancient Greek, Biblical Hebrew or Latin) is required. UCL provides opportunities to meet the foreign language requirement following enrolment, further details at: www.ucl.ac.uk/ug-reqs

**IB DIPLOMA**

**Points**
39-40 overall.

**Subjects**
A score of 20 points in three higher level subjects including 7 in Mathematics, or 19 points in three higher level subjects including 7 in Mathematics and a 1 in any STEP paper or a distinction in Mathematics AEA, with no score below 5.

**OTHER QUALIFICATIONS**

UCL considers a wide range of UK and international qualifications for entry into its undergraduate programmes. Full details are given at: www.ucl.ac.uk/otherquals

**UNDERGRADUATE PREPARATORY CERTIFICATES (International foundation courses)**
The Undergraduate Preparatory Certificates (UPCs) are intensive one-year foundation courses for international students of high academic potential who are aiming to gain access to undergraduate degree programmes at UCL and other top UK universities.

Typical UPC students will be high achievers in a 12-year school system which does not meet the standard required for direct entry to UCL.

For more information see: www.ucl.ac.uk/upc.

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**TUITION FEES**
The fees indicated are for undergraduate entry in the 2018/19 academic year. The UK/EU fees shown are for the first year of the programme at UCL only. The Overseas fees shown are the fees that will be charged to 2018/19 entrants for each year of study on the programme, unless otherwise indicated below.

- **UK & EU**: £9,250 (2018/19)
- **Overseas**: £22,790 (2018/19)

Full details of UCL’s tuition fees, tuition fee policy and potential increases to fees can be found on the UCL Students website.

**FUNDING**

Various funding options are available, including student loans, scholarships and bursaries. UK students whose household income falls below a certain level may also be eligible for a non-repayable bursary or for certain scholarships. Please see the Fees and funding pages for more details.

**CONTACT**

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Department: Mathematics

**EU referendum**

For up-to-date information relating to specific key questions following the UK’s decision to leave the EU, please refer to: www.ucl.ac.uk/eu-referendum

**Disclaimer**

This information is for guidance only. It should not be construed as advice nor relied upon and does not form part of any contract. For more information on UCL’s degree programmes please see the UCL Undergraduate Prospectus at www.ucl.ac.uk/prospectus