This MSc provides an ideal foundation for students wishing to advance their mathematical modelling skills. The programme teaches students the basic concepts which arise in a broad range of technical and scientific problems and illustrates how these may be applied in a research context to provide powerful solutions.

### Degree summary

Students develop an understanding of the processes undertaken to arrive at a suitable mathematical model and are taught the fundamental analytical techniques and computational methods used to develop insight into system behaviour. The programme introduces a range of problems - industrial, biological and environmental - and associated conceptual models and solutions.

- **UCL Mathematics** is internationally renowned for its excellent individual and group research that involves applying modelling techniques to problems in industrial, biological and environmental areas.
- The department hosts a stream of distinguished international visitors. In recent years four staff members have been elected fellows of the Royal Society, and the department publishes the highly regarded research journal Mathematika.
- This MSc enables students to consolidate their mathematical knowledge and formulate basic concepts of modelling before moving on to case studies in which models have been developed for issues motivated by industrial, biological or environmental considerations.

The programme is delivered through seminar-style lectures and problem and computer-based classes. Student performance is assessed through a combination of unseen examination and coursework. For the majority of courses, the examination makes up between 90–100% of the assessment. The project is assessed through the dissertation and an oral presentation.

### Degree structure

**Mode:** Full-time: 1 year; Part-time: 2 years  
**Location:** London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of five core modules (75 credits), three optional modules (45 credits), and a research dissertation (60 credits).

The part-time option normally spans two years. The eight taught modules are spread over the two years. The research dissertation is taken in the summer of the second year.

#### CORE MODULES
- Advanced Modelling Mathematical Techniques
- Nonlinear Systems
- Operational Research
- Computational and Simulation Methods
- Frontiers in Mathematical Modelling and its Applications

#### OPTIONAL MODULES
- Asymptotic Methods & Boundary Layer Theory
- Biomathematics
- Cosmology
- Evolutionary Game Theory and Population Genetics
- Geophysical Fluid Dynamics
- Mathematical Ecology
- Quantitative and Computational Finance
- Theory of Traffic Flow
- Waves and Wave Scattering

#### DISSERTATION/REPORT
- All MSc students undertake an independent research project, which culminates in a dissertation of approximately 15,000-words and a project presentation.
Your career

Our graduates have found employment in a wide variety of organisations such as Hillier-Parker, IBM, Swissbank, Commerzbank Global Equities, British Gas, Harrow Public School, Building Research Establishment and the European Centre for Medium-Range Weather-Forecasting.

Recent career destinations* include:

- Actuarial Analyst, KPMG
- Data Scientist, Echobox
- Graduate Technical Professional, AVEVA
- PhD in Biochemical Engineering, UCL
- Engineer, Erds (EDF)

Employability

Finance, actuarial and accountancy professionals are constantly in demand for their high-level mathematical skills and recent graduates have taken positions in leading finance-related companies such as UBS, Royal Bank of Scotland, Societe Generale, PricewaterhouseCoopers, Deloitte, and KPMG.

In the engineering sector, one recent graduate has progressed to a mathematical modelling role at a leading transportation planning consultancy; another became a graduate trainee at a business segment of Schlumberger that provides reservoir imaging, monitoring, and development services.

In addition, a number of graduates have remained in education either progressing to a PhD or entering the teaching profession.

* Careers data is taken from the ‘Destinations of Leavers from Higher Education’ survey undertaken by HESA looking at the destinations of UK and EU students in the 2013-2015 graduating cohorts six months after graduation.
Entry requirements

A minimum of an upper second-class Bachelor’s degree in a relevant discipline from a UK university or an overseas qualification of an equivalent standard.

English language proficiency level

If your education has not been conducted in the English language, you will be expected to demonstrate evidence of an adequate level of English proficiency.

The level of English language proficiency for this programme is: Standard.

Information about the evidence required, acceptable qualifications and test providers is provided at: www.ucl.ac.uk/graduate/english-requirements

Your application

Students are advised to apply as early as possible due to competition for places. Those applying for scholarship funding (particularly overseas applicants) should take note of application deadlines.

When we assess your application we would like to learn:

// why you want to study Mathematical Modelling at graduate level
// why you want to study Mathematical Modelling at UCL
// what particularly attracts you to this programme
// how your academic background meets the demands of a challenging programme
// where you would like to go professionally with your degree

Together with essential academic requirements, the personal statement is your opportunity to illustrate whether your reasons for applying to this programme match what the programme will deliver.

Application fee: There is an application processing fee for this programme of £75 for online applications and £100 for paper applications. More details about the application fee can be found at www.ucl.ac.uk/prospective-students/graduate/taught/application.

FEES AND FUNDING 2018/19 ENTRY

// UK: £10,140 (FT), £5,120 (PT)
// EU: £10,140 (FT), £5,120 (PT)
// Overseas: £19,970 (FT), £10,140 (PT)

The tuition fees shown are for the year indicated above. Fees for subsequent years may increase or otherwise vary. Further information on fee status, fee increases and the fee schedule can be viewed on the UCL Current Students website.

Full details of funding opportunities can be found on the UCL Scholarships website: www.ucl.ac.uk/scholarships

APPLICATION DEADLINE

All applicants: 27 July 2018

Details on how to apply are available on the website at: www.ucl.ac.uk/graduate/apply

CONTACT

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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