CHEMISTRY WITH MATHEMATICS
MSci / UCAS CODE: F1GC
2020 ENTRY

www.ucl.ac.uk/prospectus
This four-year programme offers an extra year on top of the Chemistry with Mathematics BSc in which to undertake an original chemical research project and study chemistry and its relationship with other disciplines in greater depth.

**Key information**

**Programme starts**
September 2020

**Location**
London, Bloomsbury

**Degree benefits**

- Consistently regarded as one of the best chemistry departments in the UK, we offer you an excellent education with high standards of teaching.
- You will benefit from our outstanding research profile as you are taught by lecturers who are experts in a wide range of chemistry-related fields.
- The MSci allows you to study more advanced topics and to work on an extended research project within one of our internationally renowned research groups.
- We offer access to state-of-the-art facilities, enhanced by our strong affiliation to other centres of excellence such as the London Centre for Nanotechnology.

**Accreditation**
The Royal Society of Chemistry accreditation is a peer review process founded on the judgement of professional chemists. It provides a structured mechanism to assess, evaluate, and enhance the quality of degree programmes and demonstrates a commitment to continuous improvement.

**Degree structure**

In each year of your degree you will take a number of individual modules, normally valued at 15 or 30 credits, adding up to a total of 120 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 30-credit module is considered equivalent to 15 credits in the European Credit Transfer System (ECTS).

This programme is offered either as a three-year BSc or as a four-year MSci. The first two years of study are identical, so you can defer which to opt for until the end of your second year. We advise you to select the four-year MSci initially as this keeps more options open.

The chemistry content directly follows that of the single-subject Chemistry programme. You will cover the full range of chemistry core components, together with relevant optional modules in chemistry such as in quantum mechanics, computational chemistry and numerical methods.

The mathematics component takes up around 25% of the programme. In the first two years there are a number of compulsory mathematics modules including modules in pure mathematics, advanced calculus and geometry, group theory and linear algebra, while in the third year you choose from a wide range of mathematics modules.

In the final year you will undertake a chemical research project and optional modules, allowing you to specialise in the field of chemistry of your choice. You will also have the opportunity to select advanced mathematics modules.

**YEAR ONE**

**Core or compulsory module(s)**

- Basic Inorganic Chemistry
- Basic Organic Chemistry
- Basic Physical Chemistry
- Introduction to Chemical Principles
- Mathematics for Science 1
- Mathematics for Science 2
- Chemical Skills

**Optional modules**

- You will select one module from a wide range of optional modules.

**YEAR TWO**

**Core or compulsory module(s)**

- Algebra
  - Mathematical Methods In Chemistry
  - Principles of Inorganic Chemistry
  - Principles of Organic Chemistry
  - Principles of Physical Chemistry

**Optional modules**

- All second year modules are compulsory.
YEAR THREE

Core or compulsory module(s)

- Advanced Topics in Inorganic Chemistry
- Advanced Topics in Physical Chemistry
- An Introduction to Research Methods
- Literature Project
- Principles and Methods of Organic Synthesis

Optional modules

- Either:
  - Concepts in Computational and Experimental Chemistry
  Or:
  - Numerical Methods in Chemistry
- Plus one module of advanced chemistry or advanced mathematics options. Chemistry options may include:
  - Biological Chemistry/Biological Macromolecules
  - Concepts in Computational and Experimental Chemistry
  - Inorganic Rings, Chains and Clusters
  - New Directions in Materials Chemistry
  - Numerical and Analytical Methods
  - Organometallic Chemistry
  - Pathways, Intermediates and Function in Organic Chemistry
  - Principles of Drug Design
  - Structural Methods in Modern Chemistry

FINAL YEAR

Core or compulsory module(s)

- Advanced Chemical Research Project

Optional modules

- Either:
  - Numerical Methods in Chemistry
  Or:
  - Topics in Quantum Mechanics
- Plus three modules from a wide range of advanced mathematics and advanced chemistry options. Chemistry options may include:
  - Biological Chemistry/Biological Macromolecules
  - Concepts in Computational and Experimental Chemistry
  - Inorganic Rings, Chains and Clusters
  - Organometallic Chemistry
  - Pathways, Intermediates and Function in Organic Chemistry
  - Principles of Drug Design
  - New Directions in Materials Chemistry
  - Numerical and Analytical Methods
  - Structural Methods in Modern Chemistry

Your learning

Your learning will combine lectures, practical classes and group workshops. In addition you will attend tutorials in groups of four to six students which provide specialised support for the core modules.

Assessment

Modules usually involve at least two methods of assessment; coursework (problem sheets, essays or poster presentations), an examination, or lab classes. Feedback, such as face-to-face marking in laboratories, is always provided. Your final-year project will be assessed through a written report, a presentation and an oral examination.

Your career

As a UCL Chemistry graduate you will have developed both discipline-based and highly sought after analytical skills, for example in logical thought and numeracy.

On completion of your degree you will have the obvious option of pursuing a career within the chemical industry. This is recognised as one of the most exciting and successful contributors to the UK economy, for example in the pharmaceutical, biotechnology and nanotechnology sectors.

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.

Together with essential academic requirements, we are looking for strong evidence in your personal statement of your interest in the subject and your understanding of it. These requirements may be evidenced by examples of project work, relevant work experience or, perhaps, through your knowledge of current events involving chemistry. We also look for your ability to communicate clearly in English.
Entry requirements

**A LEVELS**

**Standard Offer:** AAA. Mathematics and Chemistry required.

**Contextual Offer:** AAB. AA in Chemistry and Mathematics required.

**GCSE**

English Language at grade C or 5, plus Mathematics at grade B or 6. 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](http://www.ucl.ac.uk/ug-reqs)

**IB DIPLOMA**

**Standard Offer:** 38 points. A score of 18 points in three higher level subjects including 6 in Chemistry and Mathematics, with no score below 5.

**Contextual Offer:** 36 points. A score of 17 points in three higher level subjects including 6 in Chemistry and Mathematics, with no score below 5.

**CONTEXTUAL OFFERS – ACCESS UCL SCHEME**

As part of our commitment to increasing participation from underrepresented groups, students may be eligible for a contextual offer as part of the Access UCL scheme. For more information see [www.ucl.ac.uk/prospectus](http://www.ucl.ac.uk/prospectus)

**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](http://www.ucl.ac.uk/otherquals)

**UNDERGRADUATE PREPARATORY CERTIFICATES (International foundation courses)**

UCL 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](http://www.ucl.ac.uk/upc).

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### TUITION FEES

The fees indicated are for undergraduate entry in the 2020/21 academic year. The UK/EU fees shown are for the first year of the programme at UCL only. Fees for future years may be subject to an inflationary increase. The Overseas fees shown are the fees that will be charged to 2020/21 entrants for each year of study on the programme, unless otherwise indicated below.

- **UK & EU:** £9,250 (2020/21)
- **Overseas:** £28,610 (2020/21)

Full details of UCL’s tuition fees, tuition fee policy and potential increases to fees can be found on the [UCL Students website](http://www.ucl.ac.uk).

### ADDITIONAL COSTS

If you are concerned by potential additional costs for books, equipment, etc. on this programme, please get in touch with the relevant departmental contact (details given on this page).

### FUNDING

UCL Chemistry offers a number of scholarships which will be advertised on the departmental website as appropriate.

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:** Chemistry

### Brexit

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/brexit](http://www.ucl.ac.uk/brexit)

### 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](http://www.ucl.ac.uk/prospectus)