CHEMISTRY WITH MATHEMATICS
BSc /
UCAS CODE: F1G1
2018 ENTRY

www.ucl.ac.uk/prospectus/chemistry
Many aspects of chemistry, particularly physical and theoretical chemistry, require a good understanding of advanced mathematical methods. The Chemistry with Mathematics BSc offers the opportunity to gain a fundamental understanding of the origins of chemical behaviour, while exploring exciting developments at the interface of chemistry with the other physical sciences.

### Key information

**Programme starts**
September 2018

**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.
- You will have the opportunity to select optional modules from the wide range available within UCL’s internationally renowned Department of Mathematics.
- 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.

### 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.

94% 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).

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 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 final year you choose from the wide range of Mathematics options on offer.

In the final year you also undertake a compulsory literature project.

#### 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

**Optional modules**

- You will select 0.5 credits 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.

#### FINAL YEAR

**Core or compulsory module(s)**

- Advanced Practical Chemistry
- Advanced Topics in Inorganic Chemistry
- Advanced Topics in Physical Chemistry
- Principles and Methods of Organic Synthesis
- Literature Project

**Optional modules**

- You will select 1.0 credit from a wide range of Mathematics, Chemistry and other approved undergraduate options.
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

Each module will usually involve at least two methods of assessment. These may include coursework (problem sheets, essays or poster presentations), an examination, or laboratory classes. We believe in providing feedback to students, such as face-to-face marking in laboratories. Your third-year project will be assessed through a written report.

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.

First career destinations of recent graduates (2012-2014) of UCL Chemistry programmes include:

- MSc Chemical Research, University College London (UCL)
- MSc Theoretical Chemistry and Computational Mathematics, Universitat de València (University of Valencia)
- PhD Molecular Modelling and Materials Science, University College London (UCL)
- MSc Theoretical Chemistry, University of Oxford

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.

UK-based applicants who demonstrate their potential to meet our academic requirements will be invited to visit UCL for a day. The day will include talks, the opportunity to meet current students and a tour of the department and UCL. You will also attend a university-level lecture.
Entry requirements

**A LEVELS**

**Grades**
AAA-AAB

**Subjects**
Mathematics grade A required, plus Chemistry.

**GCSE**
English Language at grade C plus Mathematics at grade B. For UK-based students, a grade C 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**
36-38 overall.

**Subjects**
A score of 17-18 points in three higher level subjects including Mathematics at grade 6 and Chemistry, 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 2017/18 academic year and are for the first year of the programme at UCL only. Fees for 2018 entry will appear here as soon as they are available.

<table>
<thead>
<tr>
<th>Region</th>
<th>Amount</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>UK &amp; EU</td>
<td>£9,250 (2017/18)</td>
<td>see below</td>
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<tr>
<td>Overseas</td>
<td>£23,710 (2017/18)</td>
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The UK/EU fee quoted above may be subject to increase for the 2018/19 academic year and for each year of study thereafter and UCL reserves the right to increase its fees in line with UK government policy (including on an annual basis for each year of study during a programme). Fees for overseas students may be subject to an annual increase in subsequent years of study by up to 5%.

Please see the full details of UCL’s fees and possible changes on the UCL Current Students website.

**FUNDING**
UCL Chemistry offers a number of scholarships, including the Bader Bursaries, GSK Bursary, UCL Chemistry Entrance Scholarships and the Kathleen Lonsdale Bursary.

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

**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