MOLECULAR MODELLING
MSc / 2019/20 ENTRY

www.ucl.ac.uk/graduate/
There is a growing need by industry for staff trained in computational molecular sciences. This new multidisciplinary MSc will teach simulation tools used in a wide range of applications, including catalysis and energy materials, nanotechnology and drug design, and will provide transferable skills to other fields, thereby broadening employment prospects.

**Degree summary**

Students will gain detailed knowledge and skills in molecular modelling, focusing on the state-of-the-art simulation techniques employed to research the molecular level properties that determine the macroscopic behaviour of matter. They will also gain key research skills and will learn the basic concepts in business and entrepreneurship as applied to high-tech industries.

- UCL Chemistry has a world-leading position in molecular modelling research.
- Molecular modelling techniques are having increasing impact in the industrial sector, as evidenced by the partnership between UCL’s Industrial Doctorate Centre in Molecular Modelling and Materials Science and a range of national and international industrial sponsors.
- This multidisciplinary programme offers a wide range of options, thereby enabling each student to tailor the programme to their own needs and interests.

The programme is delivered through a combination of lectures, seminars and laboratory classes. Assessment is through unseen examination, coursework, individual and group projects, poster creation, presentation and the research project.

**Degree structure**

Mode: Full-time: 1 year
Location: London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of three core modules (60 credits), two optional/elective modules (30 credits) and a research project (90 credits). Please note that the list of modules given here is indicative. This information is published a long time in advance of enrolment and module content and availability is subject to change.

### COMPULSORY MODULES
- Simulation Methods in Materials Chemistry
- Molecular Modelling and Materials Science Literature Review
- Transferable Skills for Scientists

### OPTIONAL MODULES

Students take 30 credits (2 modules) drawn from the following:
- Mastering Entrepreneurship
- Numerical Methods in Chemistry
- Researcher Professional Development
- Choice of one postgraduate lecture module (worth 15 credits) at UCL
- Advanced Topics in Inorganic Chemistry
- Inorganic Rings, Chains and Clusters
- Biological Chemistry
- Principles of Drug Design
- Advanced Topics in Physical Chemistry
- New Directions in Materials Chemistry
- Advanced Topics in Environmental and Energy Materials
- Advanced Topics in Organic Chemistry
- Simulation Methods in Materials Chemistry
- Organic Photochemistry Radicals and Heterocycles

### DISSERTATION/REPORT

All students undertake a computational research project which culminates in a substantial dissertation of approximately 10,000 to 12,000 words.
Your career

There are increasing career opportunities in the field of molecular modelling in sectors including sustainable energy, catalysis, nanotechnology, biomedical materials and pharmaceuticals. This MSc will train students in the skills necessary for future employment in the industrial and public sector communities, together with specific training in career development and transferable skills.

The majority of students on the programme have moved on to PhD study.

Employability

The training provided by this program will enable the student to enter into a wide range of fields. Students may continue in academia to complete a PhD or pursue teaching as a profession. Students with the skills obtained during this study are highly sought after by the industrial sector, including IT, sustainable energy, catalysis, nanotechnology, biomedical materials and pharmaceuticals. Students are very likely to be welcome in the financial sector.
Entry requirements

A minimum of a second-class Bachelor's degree in a science or engineering 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 Molecular Modelling at graduate level. Please elaborate on the motivational factors that have drawn you to our subject. We anticipate that applicants from many different first-degree backgrounds will participate in the programme and we would like you to explain how your own background leads you to this MSc

// why you want to study Molecular Modelling at UCL. Tell us how UCL can help to improve your career path and give an indication of your willingness to participate in the wider UCL activities in the subject during your time here

// how your academic background meets the demands of a challenging programme. The MSc is a broadening degree which will lead you into areas that lie outside your first-degree subject. How comfortable are you with that?

// what would you like to be able to do following your Master’s?

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.

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

FEES AND FUNDING 2019/20 ENTRY

// UK: £12,900 (FT)
// EU: £12,900 (FT)
// Overseas: £29,220 (FT)

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 Students website.

Students can be self-funded or find sponsorship from funding agencies such as research councils, the European Union, industry or charities.

There are also a number of Graduate School Scholarships and departmental bursaries and prizes available.

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

APPLICATION DEADLINE

All applicants: 26 July 2019

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/brexit