ENGINEERING (BIOCHEMICAL)
BEng /
UCAS CODE: H811
2018 ENTRY

www.ucl.ac.uk/prospectus/biochemeng
The Biochemical Engineering undergraduate programme at UCL fully integrates engineering and biotechnology. Both BEng and MEng routes share a common curriculum of core modules, delivered through innovative teaching and practical courses. Both programmes will equip you with skills to follow a wide range of careers in this emerging sector.

### 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).

The Engineering (Biochemical) BEng and MEng share a common curriculum of core modules. These are designed to introduce you to biochemical engineering through lectures and use of practical training facilities. Scenario-based learning activities will give you hands-on experience in a diverse range of fields, from tackling biopharmaceutical process development to evaluating sustainability of biofuels.

In all years you will supplement compulsory modules by selecting options to match your interests. You may choose to complete your degree at this stage with a BEng qualification. However, we advise you to apply for a four-year MEng programme initially as this gives you the most control over your plans.

This degree is part of the Integrated Engineering Programme (IEP), a teaching framework that engages students in specialist and interdisciplinary engineering activities designed to create well-rounded graduates with a strong grasp of the fundamentals of their discipline and a broad understanding of the complexity and context of engineering problems.

Students register for a core discipline, but also engage in activities that span departments so the development of fundamental technical knowledge takes place alongside specialist and interdisciplinary research-based projects and professional skills. This creates degrees that encourage professional development, with an emphasis on design and challenging students to apply knowledge to complex problems.

### YEAR ONE

#### Compulsory subjects

- Biochemistry and Molecular Biology
- Bioprocess Analysis
- Chemistry for Biologists
- Fluid Flow and Mixing in Bioprocesses
- Introduction to Biochemical Engineering
- Introductory Statistical Methods and Computing

#### Optional modules

- You will select one optional module from a range to the value of 1.0 credit.

### YEAR TWO

#### Core or compulsory module(s)

- Biochemistry of Protein Production
- Bioprocess Recovery and Purification
- Design and Professional Skills II
- Fermentation and Bioreactor Engineering
- Heat and Mass Transfer
- Mathematical Analysis and Modeling II

#### Optional modules

- You will select one optional module from a range to the value of 1.0 credit.
**FINAL YEAR**

**Core or compulsory module(s)**

- Advanced Materials, Devices and Manufacturing Processes for Regenerative Medicine
- Bioprocess Research Project
- Business Planning in Bioprocessing and Life Sciences
- Regenerative Medicine
- Vaccine Bioprocessing

**Optional modules**

- One Minor module

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In addition to academic requirements, we will use your application to assess your motivation for studying biochemical engineering. We are seeking applicants committed to studying at the highest level, who are eager and able to rise to the challenges presented both by the programme and by a career in the discipline.

If we are considering making you an offer, and you live in the UK, you will be invited to an applicant open day. Your visit provides an excellent opportunity to examine the departmental facilities before making a final decision.

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**Your learning**

You will be taught through a combination of lectures, case studies, team-based projects and experiments. Leading industrialists and researchers regularly visit the department to provide guest lectures. Our programmes offer regular opportunities for students to put their learning into practice through the use of scenarios. Case studies are conducted in small teams, with your tutors offering individual support.

**Assessment**

Written examinations, individual and group reports, coursework and oral presentations all contribute towards your assessment.

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**Your career**

The core science, engineering, business and leadership skills that you acquire on the programme will provide you with excellent and diverse career prospects. In addition to your core subject knowledge, the programme will provide you with skills in innovative thinking, team-working and computing.

The excitement of taking biological advances towards new medicines and greener sustainable processes is creating an ever-growing need for biochemical engineering graduates to work in the biotechnology, pharmaceutical, biofuels, chemical, environment and food industries.

First career destinations of recent Biochemical Engineering BEng graduates (2013-2015) include:

- Analyst, BlackRock
- Full-time student, EngD in Biochemical Engineering and Bioprocess Leadership at UCL
- Full-time student, MSc in Management at Imperial College Business School, Imperial College London
- Pharmaceutical Industry Analyst, Visiongain
- Full-time student, MSc in Environmental Engineering at Griffith University

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**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.

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Data 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 LEVELS**
**Grades**
A*/AA-AAA

**Subjects**
Mathematics required, plus one from Biology, Chemistry or Physics.

**GCSE**
English Language and Mathematics at grade C. 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**
38-39 overall.

**Subjects**
A total of 18-19 points in three higher level subjects including Mathematics, plus one from Biology, Chemistry or Physics, 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.

**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.

- UK & EU: £9,250 (2017/18 - see below)
- Overseas: £23,710 (2017/18)

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**
Several major international companies have established a Trust Fund with the department. This fund provides five bursaries, each worth at least £1,500, which are open to all applicants.

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.

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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

**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