BIOCHEMICAL ENGINEERING
MSc / 2017/18 ENTRY
www.ucl.ac.uk/graduate/biochemeng
Have you ever wondered how the latest life science discoveries - such as a novel stem cell therapy - can move from the lab into commercial scale production? Would you like to know whether it is possible to produce bio-polymers (plastics) and biofuels from municipal or agricultural waste? If you are thinking of a career in the pharma or biotech industries, the Biochemical Engineering MSc could be the right programme for you.

**Degree summary**

Our MSc programme focuses on the core biochemical engineering principles that enable the translation of advances in the life sciences into real processes or products. Students will develop advanced engineering skills (such as bioprocess design, bioreactor engineering, downstream processing), state-of-the-art life science techniques (such as molecular biology, vaccine development, microfluidics) and essential business and regulatory knowledge (such as management, quality control, commercialisation). Three distinct pathways are offered tailored for graduate scientists, engineers, or biochemical engineers.

**Accreditation**

Our MSc programme is accredited by the Institute of Chemical Engineering (IChemE). The level of accreditation is dependent on the background of an individual student and the MSc pathway taken.

**Degree structure**

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

Students undertake modules to the value of 180 credits. The programme offers three different pathways (for graduate scientists, engineers, or biochemical engineers) and consists of core taught modules (120 credits) and a research or design project (60 credits).

**CORE MODULES**

- Core modules may include the following (details will vary depending on degree of student). The programme will be tailored to the background of the student according to the three routes in.
  - Advanced Bioreactor Engineering
  - Dissertation on Bioprocess Research
  - Fundamental Biosciences
  - Integrated Downstream Processing
  - Sustainable Industrial Bioprocesses and Biorefineries
  - Please go to www.ucl.ac.uk/biochemeng/prospective-students/msc for a full list of core modules.

**OPTIONAL MODULES**

- Optional modules may include the following (details will vary depending on degree of student).
  - Bioprocess Management – Discovery to Manufacture
  - Bioprocess Microfluidics
  - Bioprocess Systems Engineering
  - Bioprocess Validation and Quality Control
  - Commercialisation and Bioprocess Research
  - Vaccine Bioprocess Development
  - The exact options available will depend on the degree of the student. Please go to www.ucl.ac.uk/biochemeng/prospective-students/msc for a full list of core modules.

- Core Modules for Biochemical Engineering Graduates Sustainable Industrial Bioprocesses and Biorefineries Bioprocess Systems Engineering Cell Therapy Biology, Bioprocessing and Clinical Translation Industrial Synthetic Biology Bioprocess Validation and Quality Control Bioprocess Research Project Students can choose three options.
Your career

The rapid advancements in biology and the life sciences create a need for highly trained, multidisciplinary graduates possessing technical skills and fundamental understanding of both the biological and engineering aspects relevant to modern industrial bioprocesses. Consequently, UCL biochemical engineers are in high demand, due to their breadth of expertise, numerical ability and problem-solving skills. The first destinations of those who graduate from the Master’s programme in biochemical engineering reflect the highly relevant nature of the training delivered.

Approximately three-quarters of our graduates elect either to take up employment in the relevant biotechnology industries or study for a PhD or an EngD, while the remainder follow careers in the management, financial or engineering design sectors.

Employability

The department places great emphasis on its ability to assist its graduates in taking up exciting careers in the sector. UCL alumni, together with the department’s links with industrial groups, provide an excellent source of leads for graduates. Over 1,000 students have graduated from UCL with graduate qualifications in biochemical engineering at Master’s or doctoral levels. Many have gone on to distinguished and senior positions in the international bioindustry. Others have followed independent academic careers in universities around the world.
Entry requirements

Normal entry requirements are at least a second-class Bachelor's degree from a UK university or the equivalent from an approved overseas institution. Candidates offering recent industrial experience are also encouraged to apply. As with any engineering discipline numeracy skills are important for the quantitative description of biological and physical phenomena. Evidence of numerical ability is requested as either an A level in Mathematics (or in exceptional cases, in Physics) or some mathematics studied at university. The department provides mathematics tutoring for Master's students throughout the year adjusted to a candidate's ability.

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 Biochemical Engineering at graduate level
- why you want to study Biochemical Engineering at UCL
- what particularly attracts you to this programme
- how your academic, professional and personal background meets the demands of a challenging programme. We are particularly interested in any individual or group research project that you have undertaken.
- how will the MSc help you in your future career aspirations

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.

FEES AND FUNDING 2017/18 ENTRY

- UK: £11,800 (FT)
- EU: £11,800 (FT)
- Overseas: £24,610 (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 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: 28 July 2017

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