SYNTHETIC BIOLOGY MRes / 2019/20 ENTRY

www.ucl.ac.uk/graduate/
This MRes programme aims to train students in the fast-growing area of synthetic biology, a discipline which takes the knowledge and understanding we now have of the individual parts of biological systems and uses them in a defined way to design and build novel artificial biological systems.

### Degree summary

Students develop an understanding of the areas involved in synthetic biology, including engineering principles, mathematical modelling, advanced molecular biology, microbiology, biochemical engineering and necessary chemistry. Modules also provide the necessary skills for acquisition and critical analysis of the primary scientific literature and transferable research development skills. The programme includes a major research project that will provide in-depth training in synthetic biology research methods.

- UCL is recognised as one of the world’s best research environments within the field of synthetic biology, molecular biology and biochemical engineering as well as biological and biomedical sciences. There is an emphasis on laboratory based work to put into practice in the lab what has been learnt in the taught modules of the course.
- UCL Biochemical Engineering is in a unique position to offer tuition and research opportunities in internationally recognised laboratories that carry out synthetic biology research, and an appreciation of the multidisciplinary nature of synthetic biology research.
- Students on this MRes programme undertake a major research project where topics can be chosen spanning the expertise in six departments across UCL.

The programme is delivered through lectures, seminars and tutorials, combining research-led and skills-based modules. The taught modules are assessed by assignments and coursework. The research project is assessed by an oral presentation, submission of a dissertation and is subject to oral examination.

### Degree structure

**Mode:** Full-time: 1 year  
**Location:** London, Bloomsbury  
Students undertake modules to the value of 180 credits. The programme consists of an extended research project (120 credits) and three core taught modules (60 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

- Synthetic Biology Research Project
- Synthetic Biology
- Research Skills
- Transferable Skills in Bioprocess Research and Development

#### OPTIONAL MODULES

There are no optional modules for this programme.

#### DISSERTATION/REPORT

- All students undertake an independent laboratory-based extended research project which culminates in a dissertation of 15,000–18,000 words.
Your career
The Synthetic Biology MRes will qualify students to go on to work in the growing number of small companies engaged in synthetic biology both here in London and across the UK and the world. There are many large companies that are building their own synthetic biology potential and some of our students are already working with these groups. Our students often go on to do further research in PhDs and EngDs globally. Our graduates have practical experience of generating novel research with our unique facilities that makes them of great value to employers and collaborators. Some of our MRes graduates have set up their own synthetic biology spin-out companies.

Employability
Synthetic biology is a fast growing area of research and will have a major economic and social impact on the global economy in the coming decades. The involvement of molecular biologists, biochemists, engineers, physical scientists, chemists and biologists can create designed cells, enzymes and biological modules that can be combined in a defined manner. These can be used to make complex metabolic pathways for pharmaceuticals, designed and synthetic cells, novel hybrid biosensors or novel routes to biofuels. A future integration of biological devices and hybrid devices as components in the electronics industry might lead to a whole new high value industry for structured biological entities.
Entry requirements

Normally, a minimum of an upper second-class UK Bachelor's degree in biochemistry, biomedical sciences, life sciences, biochemical engineering, chemical biology or any related subject area, or a medical degree (MBBS), or a physical sciences degree, or an overseas qualification of an equivalent standard. Applicants with an appropriate professional qualification and relevant work experience may also apply.

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

FEES AND FUNDING 2019/20 ENTRY

// UK: £15,220 (FT)
// EU: £15,220 (FT)
// Overseas: £27,470 (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.

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