MEDICAL SCIENCES AND ENGINEERING MSci / UCAS CODE: HA11 2021 ENTRY

www.ucl.ac.uk/prospectus
Medical Sciences and Engineering MSci

This unique, cross-faculty degree will give you knowledge of human physiology and disease, with engineering and problem-solving skills. By learning how to combine innovation and technology with translation towards patient care, you will graduate with multi-disciplinary skills. You will be equipped to work in the biomedical and healthcare industries in areas such as pharmaceuticals, designing artificial and regenerative tissues, robotic surgeries and improved prosthetics.

Key information

Programme starts
September 2021

Location
London, Bloomsbury

Degree benefits

// You will benefit from innovative teaching methods underpinned by world-leading research activity in medical science and engineering across UCL. UCL is the top UK university for research strength (REF2014) and a top 10 Faculty for Medical Sciences in the world (QS).

// In the third year you will choose from either medical sciences or engineering stream options, taking modules within these themes. You will engage with scientists, clinicians and engineers across UCL’s Bloomsbury, Royal Free and Stanmore campuses and their associated hospitals in world-class facilities.

// You will develop entrepreneurial skills and learn how research can be translated into clinical practice. You will also learn about commercialisation within the medical technology industry.

// By completing an additional MSci year, you will further specialise by selecting a theme for your optional modules and carrying out an additional larger research project.

Degree structure

In each year of your degree you will take a number of individual modules, normally valued at 15 or 30 credits, adding up to a total of 120 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 30-credit module is considered equivalent to 15 credits in the European Credit Transfer System (ECTS).

This degree is split equally between engineering and medical science and is composed of eight compulsory modules in year one and eight in year two.

In year three students are able to choose to direct their degree along either a medical sciences or engineering stream. There will be two compulsory modules: Research Project and Professional Clinical Practice.

You will have the opportunity to experience UCL’s cutting-edge research laboratories, as well as state-of-the-art hospital facilities.

MSci students will be able to carry out a research project in medical sciences and/or engineering in their third year, as well as a larger research project in their final year, alongside further optional modules.

You can read detailed reviews of each module from current students here.

Upon successful completion of 480 credits, you will be awarded a MSci (Hons) in Medical Sciences and Engineering.

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.

YEAR ONE

Compulsory module(s)

// Introduction to Engineering and Biology for Medicine
// Cardiovascular and Respiratory Function in Health and Disease
// Mathematics and Modelling
// Medical Instrumentation
// The Gut, Liver and Drug Metabolism
// Kidneys, Hormonal Control of Human Physiology, Fluid Balance and Nutrition
// Materials and Mechanics
// Design and Professional Skills 1

Optional modules

// All first year modules are compulsory.

YEAR TWO

Compulsory module(s)

// The Functional Nervous System and Brain
// Medical Instrumentation II
// Mathematical Modelling and Analysis
// Musculoskeletal Systems in Health and Disease
// Manufacturing Regenerative Medicines
// Fundamentals of Biomechanics
// Infection, Inflammation and Repair
// Professional Medical Practice

Optional modules

// All second year modules are compulsory.
YEAR THREE

Compulsory module(s)

- Professional Clinical Practice
- Research Project

Optional modules

- A variety of optional modules will be available, allowing students to personalise their degree along a theme including engineering or medical sciences.

FINAL YEAR

Compulsory module(s)

- A Research Project will be a compulsory component of the 4th year. Students will be able to continue with their selected stream from the 3rd year by taking taught modules within the medical sciences or engineering themes.

Optional modules

- Students will be able to select modules from a range, allowing them to personalise their degree along an engineering or medical sciences theme.

Your learning

Formal learning will include lectures and tutorials, practical laboratory classes, case-based discussions, workshops and research projects (group and individual).

Assessment

A range of methods of assessment will be used across the programme, including: written coursework, project reports, laboratory reports, presentations (both individual and group) and unseen examinations (designed to test knowledge and understanding of both medical sciences and engineering).

Accessibility

Details of the accessibility of UCL buildings can be obtained from AccessAble. Further information can also be obtained from the UCL Student Support & Wellbeing team.

Your career

Graduates will be equipped to deliver world-class biomedical engineering and regenerative medicine solutions in clinical, commercial, regulatory and research environments. They will have the skills to move into the expanding global medical technologies and regenerative medicine sectors as product specialists, researchers, designers and regulatory advisors. Graduates may also enter NHS Clinical Scientist and Clinical Engineer training programmes.

Recent government and industry reports have identified skills shortages in the healthcare and pharmaceutical sectors. These shortages need to be met by multidisciplinary graduates who can think broadly to create new solutions to global challenges.

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.

We will be looking for evidence of your motivation, commitment and enthusiasm to pursue this degree. This could be demonstrated through relevant work or other experiences (e.g. attendance at a scientific exhibition). This programme will suit students who want to make a difference in the world, who are innovative and inventive, and who are prepared to be challenged. Due to the programme content, we require applicants to have an A level in Biology and Mathematics, plus one additional STEM subject (e.g. Chemistry, Physics, Further Mathematics).
### Entry requirements

**A LEVELS**

**Standard Offer:** AAB. Mathematics, Biology at grade AA and either Physics or Chemistry at grade B required.

**GCSE:** English Language and Mathematics at grade B or 6. For UK-based students, a grade C or 5 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.

**Contextual Offer:** ABB. Mathematics at grade A and Biology at grade B. Either Physics or Chemistry at grade B also required.

**GCSE:** English Language and Mathematics at grade B or 6. For UK-based students, a grade C or 5 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**

**Standard Offer:** 36 points. A total of 17 points in three higher level subjects, including a score of 6 in both Mathematics and Biology and either Physics or Chemistry with a minimum score of 5.

**Contextual Offer:** 34 points. A total of 16 points in three higher level subjects, including a score of 6 in Mathematics, plus Biology and either Physics or Chemistry, with a minimum score of 5.

**CONTEXTUAL OFFERS – ACCESS UCL SCHEME**

As part of our commitment to increasing participation from underrepresented groups, students may be eligible for a contextual offer as part of the Access UCL scheme. For more information see www.ucl.ac.uk/prospectus.

**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)**

UCL 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 2021/22 academic year. The UK fees shown are for the first year of the programme at UCL only. Fees for future years may be subject to an inflationary increase. The Overseas fees shown are the fees that will be charged to 2021/22 entrants for each year of study on the programme, unless otherwise indicated below.

- **UK & EU:** £9,250 (2021/22)
- **Overseas:** £28,500 (2021/22)

Full details of UCL’s tuition fees, tuition fee policy and potential increases to fees can be found on the UCL Students website.

### ADDITIONAL COSTS

The core textbooks for all modules are available in UCL Libraries (including the Royal Free library), and journal articles in your reading lists are available to download electronically. Some students may wish to purchase their own text books or print course documents and if you would like to do this, then we suggest allowing approximately £200 per year for this. In addition students will be required to pay for their own travel costs to placements or project locations, depending upon the project/placement that they choose.

A guide including rough estimates for these and other living expenses is included on the UCL Fees and funding pages. If you are concerned by potential additional costs for books, equipment, etc., please get in touch with the relevant departmental contact (details given on this page).

### FUNDING

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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**UK withdrawal from the EU**

For up-to-date information relating to specific key questions following the UK's withdrawal from the EU, please refer to: www.ucl.ac.uk/brexit.

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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.

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