MEDICAL SCIENCES AND ENGINEERING BSc / UCAS CODE: AH11 2020 ENTRY

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

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 2020

Location
London, Bloomsbury

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 from a range of optional modules. You will be encouraged to design your degree programme along themes which include engineering and medical sciences. You will also complete 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.

Students will develop skills in information evaluation, integration, and its application to healthcare. They will be able to carry out medical science and/or engineering research project in their final year.

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).

// You will personalise your degree along a medical science or engineering stream in the third year, by choosing optional modules. 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.

// Graduates could establish careers in a variety of exciting developing and emerging fields, delivering world-class healthcare solutions that sustain human health and longevity and tackle the important global health challenges of the future.

YEAR ONE

Core or 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

Core or compulsory module(s)

- The Functional Nervous System and Brain
- Medical Instrumentation 2
- Mathematical Modelling and Analysis
- Musculoskeletal Biology
- Manufacturing Regenerative Medicines
- Fundamentals of Biomechanics
- Professional Medical Practice
- Infection, Inflammation and Repair

Optional modules

// All second year modules are compulsory.

YEAR THREE

Core or 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 themes including medical sciences and engineering.
Your learning
Taught modules will be supported by specially-tailored group tutorials. Working in small teams, students will apply their knowledge within a supported environment, supervised by academics. Formal learning will include 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, and unseen examinations (designed to test knowledge and understanding of both medical sciences and engineering).

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 have an A level in Biology and Mathematics, plus one additional STEM subject (e.g. Chemistry, Physics, Further Mathematics).

We will use your predicted or achieved academic qualifications, your personal statement and your reference to decide whether to offer you a place.
Entry requirements

A LEVELS

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

**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 2019/20 academic year. The UK/EU 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 2019/20 entrants for each year of study on the programme, unless otherwise indicated below.

- UK & EU: £9,250 (2019/20)
- Overseas: £24,760 (2019/20)

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 textbooks 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.

**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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**Brexit**

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

**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