PHYSICS AND ENGINEERING IN MEDICINE BY DISTANCE LEARNING MSc / 2019/20 ENTRY

www.ucl.ac.uk/graduate/
This programme pathway is identical to the campus-delivered radiation physics stream but is designed for students unable to travel to London because of their work duties or international location. Teaching is delivered via video lectures, top-up online tutorials and additional e-learning resources, with coursework and supervised examinations arranged across the world by the British Council.

### Degree summary

Students study in detail the physics theory and practice that underpins modern medicine, and learn to apply their knowledge to established and emerging technologies in medical science. The programme covers the applications of both ionising and non-ionising radiation to the diagnosis and treatment of human disease and disorder, and includes a research project and the development of computational skills needed to apply this theory into practice.

The spectrum of medical physics activities undertaken in UCL Medical Physics & Biomedical Engineering is probably the broadest of any in the United Kingdom. The department is an internationally leading centre of excellence and students receive comprehensive training in the latest methodologies and technologies from leading experts in the field.

The department operates alongside the NHS department which provides the medical physics and clinical engineering services for the University College London Hospitals NHS Foundation Trust, as well as undertaking industrial contract research and technology transfer. The department is also a collaborator in the nearby London Proton Therapy Centre at UCLH, which is due to open in 2020.

Students have access to an exceptionally wide range of expertise, laboratory, teaching and clinical facilities in the department and associated hospitals. A large range of scientific equipment is available for research involving nuclear magnetic resonance, optics, acoustics, X-rays physics, radiation dosimetry, and implant and interventional device development.

The programme is delivered through a combination of lectures, demonstrations, tutorials, assignments and a research project. Lecturers are drawn from UCL and from London teaching hospitals including UCLH, St. Bartholomew’s, and the Royal Free Hospital. Assessment is through supervised examination, coursework and assignments, a research dissertation and an oral examination.

### Degree structure

**Mode:** Flexible: up to 5 years  
**Location:** London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of eight core modules (120 credits) and the research dissertation (60 credits).

A Postgraduate Diploma, eight core modules (120 credits), is offered. A Postgraduate Certificate, four core modules (60 credits), is offered.

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

- Ionising Radiation Physics: Interactions and Dosimetry
- Imaging with Ionising Radiation
- MRI and Biomedical Optics
- Ultrasound in Medicine
- Treatment with Ionising Radiation
- Clinical Practice
- Computing in Medicine
- MSc Research Project

#### OPTIONAL MODULES

There are no optional modules for this programme.

#### DISSERTATION/REPORT

- All students undertake an independent research project which culminates in a research report of up to 10,000 words, a poster and an oral presentation.
Your career

A large percentage of graduates from the online Master’s programme commence or continue training or employment within the healthcare sector, mostly in UK and overseas hospitals. Online learning offers the ability to upskill or reskill in physics disciplines applied to medicine while also training or practising in the field.

Employability

Postgraduate study within the department offers the chance to develop important skills and acquire new knowledge through involvement with a team of world-leading scientists and engineers. As well as developing key science and engineering knowledge, graduates learn project management, communication and team working skills which they are then able to apply to solving problems at the forefront of human endeavour. The department has a recognised track record for producing excellent graduates who go on to hold leading roles in universities, companies and hospitals around the world.
Entry requirements

A minimum of an upper-second class UK Bachelor’s degree from a UK university or an overseas qualification of an equivalent standard in physics, engineering, computer science, mathematics, or other closely related discipline. Workplace knowledge and expertise are also considered. Applicants with a lower than upper-second class degree may be invited for a short online interview with programme tutors as part of their application process.

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 Physics and Engineering in Medicine at graduate level
// why you want to study this UCL programme by distance learning
// whether you have relevant industrial, clinical or workplace experience
// how your academic and professional background meets the demands of this challenging programme
// where you would like to go professionally after your degree

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.

There is an application processing fee for this programme of £75 for online applications and £100 for paper applications. Further information can be found at:
www.ucl.ac.uk/prospective-students/graduate/taught/application.