PHYSICS AND ENGINEERING IN MEDICINE: RADIATION PHYSICS MSc / 2017/18 ENTRY

www.ucl.ac.uk/graduate/medphys
This programme pathway is designed for students with a developing interest in radiation physics, both ionising and non-ionising, that underpins many of the imaging and treatment technologies applied in modern medicine. Students gain an understanding of scientific principles and practices that are used in hospitals, industries and research laboratories through lectures, problem-solving sessions, a research project and collaborative work.

**Degree summary**

Students study 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 research project, workplace skills development and 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 widely acknowledged as an internationally leading centre of excellence and students on this programme receive comprehensive training in the latest methodologies and technologies from leaders 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, currently under construction.

Students have access to a wide range of workshop, laboratory, teaching and clinical facilities in the department and associated hospitals. A large range of scientific equipment is also available for research involving nuclear magnetic resonance, optics, acoustics, X-rays, radiation dosimetry, and implant 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.

**Accreditation**

A selected pathway of modules through the Radiation Physics pathway of the MSc programme is accredited by the Institute of Physics and Engineering in Medicine (IPEM, www.ipem.ac.uk). Students can choose to study this selection of modules during the induction week at the start of the academic year.

**Degree structure**

Mode: Full-time: 1 year; Part-time: 2 years
Location: London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of seven core modules (105 credits), one optional module (15 credits), and a research project (60 credits).

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

**CORE MODULES**

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

**OPTIONAL MODULES**

- Students choose one of the following:
  - Computing in Medicine
  - Applications of Biomedical Engineering
  - Programming Foundations for Medical Image Analysis

**DISSERTATION/REPORT**

- All MSc students undertake an independent research project within the broad area of physics and engineering in medicine which culminates in a report up to 10,000 words, a poster and an oral examination.
Your career

A large percentage of graduates from the MSc continue on to PhD study, often in one of the nine research groups within the department, as a result of the skills and knowledge they acquire on the programme. Other graduates commence or resume training or employment within the healthcare sector in hospitals or industry, both within the UK and abroad.

Employability

Postgraduate study within the department offers the chance to develop important skills and acquire new knowledge through involvement with a team of scientists or engineers working in a world-leading research group. Graduates complete their study having gained new scientific or engineering skills applied to solving problems at the forefront of human endeavour. Skills associated with project management, effective communication and teamwork are also refined in this high-quality working environment.
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 Radiation Physics at graduate level
// whether you have relevant industrial 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.

FEES AND FUNDING 2017/18 ENTRY

// UK: £11,800 (FT), £6,010 (PT)
// EU: £11,800 (FT), £6,010 (PT)
// Overseas: £24,140 (FT), £12,570 (PT)

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

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 Graduate Prospectus at www.ucl.ac.uk/graduate