Robotics and autonomous systems (RAS) are set to shape innovation in the 21st century, underpinning research in a wide range of challenging areas: the ageing population, efficient health care, safer transport, and secure energy. The UCL edge in scientific excellence, industrial collaboration and cross-sector activities make it ideally placed to deliver this MRes, which uniquely covers the whole spectrum of potential RAS areas and application.

**Degree summary**

The programme teaches students the essentials of robotic and computational tools for robotics and autonomous systems. The key aim of the principal project thesis is to cultivate a deep understanding of robotics research, with a particular focus on a specific research topic in robotics and autonomous systems.

- UCL scored highest among UK universities for the quality of research in Computer Science and Informatics in the Research Excellence Framework (REF2014).
- With the external project involvement anticipated, students on this programme will have the opportunity to interact and collaborate with key companies in the industry - Airbus, Shadow Hand, OC Robotics and Intuitive Surgical - and work on real-world problems through industry-supported projects.
- Recent investment across UCL in the Faculty of Engineering and The Bartlett Faculty of the Built Environment has created the infrastructure for an exciting robotics programme, which will be interdisciplinary and unique within the UK and Europe.

Teaching is delivered by lectures, tutorials, practical sessions, projects and seminars. Assessment is through examination, individual and group projects and presentations, and design exercises.

**Degree structure**

Mode: Full-time: 1 year
Location: London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of one core module (15 credits), two to four optional modules (30 to 60 credits), up to two elective modules (30 credits), and a dissertation/report (105 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**

- Robotic Systems Engineering (15 credits)

**OPTIONAL MODULES**

- Students must choose a minimum of 30 and a maximum of 60 credits from Optional modules. Students must also choose a minimum of 0 and a maximum of 30 credits from Electives.

- Acquisition and Processing of 3D Geometry (15 credits)
- Image Processing (15 credits)
- Inverse Problems in Imaging (15 credits)
- Mathematical Methods, Algorithmics and Implementations (15 credits)
- Numerical Optimisation (15 credits)
- Research Methods and Reading (15 credits)
- Robotic Control Theory and Systems (15 credits)
- Robotic Sensing, Manipulation and Interaction (15 credits)
- Robotic Vision and Navigation (15 credits)
- Sensors and Location (15 credits)

Please note: the availability and delivery of modules may vary, based on your selected options. A list of acceptable elective modules is available on the Departmental page.

**DISSERTATION/REPORT**

- All students undertake an independent research project which culminates in a dissertation of 30,000 words.
**Your career**

Robotics is a growing field encompassing many technologies with tremendous opportunities for research and development both in industry and in academia, and with diverse applications across different industrial sectors spanning manufacturing, security, mining, design, transport, exploration and healthcare. Graduates from our MRes programme will have project-focused experience and knowledge in robotics and the underpinning computational and analytical fundamentals. These skills will position graduates to be well placed to undertake PhD studies or industrial research and development in robotics and computational research specific to robotics but translational across different analytical disciplines, or applied fields that will be influenced by new robotic technologies and capabilities.

**Employability**

The MRes will develop skills widely relevant to a career in engineering industries and analytical problem-solving occupations. Graduates with skills to develop new robotics solutions and solve computational challenges in automation are likely to be in high demand globally.
Entry requirements

A minimum of an upper second-class Bachelor’s degree from a UK university or an overseas qualification of an equivalent standard in a highly quantitative subject such as computer science, mathematics, electrical engineering, or the physical sciences. Students should also have some experience with a programming language such as C/C++, Java, Python or Matlab. Appropriate industrial experience may also be considered.

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: Good. 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 access your application we would like to learn:

- why you want to study Robotics at graduate level
- why you want to study Robotics at UCL
- what particularly attracts you to the chosen programme
- how your academic and professional background meets the demands of this challenging programme
- where you would like to go professionally with 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 2019/20 ENTRY

// UK: £13,340 (FT)
// EU: £13,340 (FT)
// Overseas: £28,410 (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.

All full-time students are required to pay a fee deposit of £2,000 for this programme. All part-time students are required to pay a fee deposit of £1,000.

Full details of funding opportunities can be found on the UCL Scholarships website: www.ucl.ac.uk/scholarships

APPLICATION DEADLINE

All applicants: 14 June 2019

Details on how to apply are available on the website at: www.ucl.ac.uk/graduate/apply

CONTACT

Mrs Caroline Horslen, Programme Administrator

Email: advancedmsc-admissions@cs.ucl.ac.uk

Telephone: +44 (0)20 3108 6568

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