

Robotics MEng (Hons)

UCAS Code: H673 | Duration: 4 years | Full-time | Hope Park | 2021/2022

Placement year opportunities available



Course Overview

Robotics is on the cusp of an exciting new era as robots become more intelligent and find applications in an ever more diverse range of industries including consumer and healthcare robotics. Our four-year Robotics degree reflects recent software and hardware technological advances and exposes you to new, much sought-after skills and up-to-date areas of research.

Recent technological advances are incorporated into the degree by developing novel cross-disciplinary approaches and subject areas such as Embedded Systems, Intelligent Systems and Mechatronics. You will experiment and interact with specialist software, hardware interfaces and systems, as well as exotic robots and fabrication facilities. You will be taught by academics whose research is rated as internationally excellent by the latest Research Excellence Framework in areas including Robotics, Intelligent Systems and Networks.

According to a recent report, Robotics is the fastest growing industry in the world and is poised to become the largest in the next decade. We are in the midst of an increase in the pace of technological change and the changes in the coming decade will be a magnitude of order greater than anything that has gone before.

Entry Requirements

The standard offer level is 120 UCAS tariff points. In addition, you should have an A Level (or equivalent) in a science or mathematics discipline such as Mathematics, Physics or Electronics, or an appropriate Access Award.

Fees and Additional Costs

The tuition fees for 2021/2022 are £9,250 for full-time undergraduate courses.

You will also need to consider the cost of your accommodation each year whilst you study at university.

Visit our accommodation webpages for further details about our Halls of Residence: www.hope.ac.uk/halls



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Robotics MEng (Hons) Curriculum

Year One

This is a broad introduction to the subject and you develop the theoretical knowledge, problem solving and practical skills that underpin Robotics. Topics studied include:

- Introduction to Robotics
- Programming for Robotics
- Algorithm Design
- Electronic Engineering for Robotics
- Mathematics for Robotics
- Taster of current and new developments

Year Two

Your second year allows you to study specific topics in more depth, focusing on software engineering, sensors and actuators, control and kinematics:

- Sensors and Actuators
- Control Systems
- Robot Navigation and Localization
- Embedded Systems
- Microcontrollers
- Kinematics
- Mechatronics
- Software Engineering for Robotics

Year Three

Your third year helps you develop a deeper understanding of the theoretical aspects of Robotics and be able to critically select appropriate tools and techniques to solve problems. Topics studied include:

- Machine Learning and Artificial Intelligence
- Embedded Systems and Physical Computing
- Robot Design and Prototyping
- Robotics Project
- Image Processing and Computer Vision
- Human Machine Interaction

Year Four

In your final year you will be studying with a great degree of autonomy with a focus on preparation for industry and Chartered Engineer (CEng) registration. The Curriculum will be focused on applications of material that has been covered in prior years in a professional context:

- Kinematics and Trajectory Planning
- Haptics
- Probabilistic Models
- Human-Robot Interaction
- Medical Robotics
- Advances in Robotics
- Group Project

COURSE STRUCTURE

Teaching on this degree is structured into lectures, where all students are taught together, seminars of smaller groups of around 15-20 students, and tutorials which typically have no more than 10 students.

During your first year of study, there are approximately 12 teaching hours each week, which reduces to approximately 10 teaching hours in your second, third and fourth years. On top of teaching hours, you are also expected to spend a number of hours studying independently each week, as well as studying in groups to prepare for any group assessments that you may have.

ASSESSMENT AND FEEDBACK

You will have a number of assessments each year, including exams and coursework.

You will be given written feedback on your assessments, and you will have the opportunity to discuss this with your tutor in more detail.



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