UNIVERSITY OF LIVERPOOL

MSc (Eng)

Robotics and the Internet of Things

Study mode	Duration	
Full-time	12 months	Apply by: **11 September 2026** Starts on: **21 September 2026**

About this course

On this brand-new MSc programme, you will develop advanced knowledge and skills in exciting aspects of robotics and the Internet of Things, two fast-growing disciplines leading advancements across a wide range of major global industries.

Introduction

Robotics is leading advancements across a wide range of major global industries, including engineering, transportation, healthcare, technology, and energy.

The Internet of Things is a rapidly expanding sector addressing the challenges arising from the integration of digital and physical processes.

This MSc combines these two disciplines, equipping you with advanced knowledge and skills in the most exciting aspects of robotics and the Internet of Things.

On this programme we build your foundational knowledge through our core topics which include robotics, embedded computer systems, digital system design, microprocessor systems, the Internet of Things and research skills and project management.

We also cover digital design techniques; you will be introduced to materials used in robotics and electronics and develop an understanding of designing advanced embedded computer

systems – along with a module that will help you to develop the practical skills to develop your final project in semester three.

You can develop your specialism through optional modules, where you learn the fundamentals of image processing, the principles of communications networks, the theoretical and practical aspects of parallel programming for multi-core architectures, and an introduction to electrical plasma and how it can be used in electronic systems.

Part-time study is in cooperation with the students' employers. Please contact the Programme Director before applying.

Who is this course for?

This course is aimed at graduates who already have a good general level of knowledge and understanding in electronics or closely related subjects with advanced knowledge (at level M) and capabilities in the specific areas of electronic engineering and robotics.

What you'll learn

- Understanding of the issues in designing complex robotic and digital systems
- Understanding the capabilities of tools used for the design and simulation of these complex systems
- Understanding of digital systems used for robotic and Internet of Things applications
- Understanding of the "Internet of Things", from the basics describing its evolution to its architecture and its application to real-life scenarios
- Awareness of the techniques used for the networking of robotic and digital systems
- Knowledge and skills in Robotic Systems and the Internet of Things
- Transferable skills such as analysis, problem-solving, communication and team-working.

Accreditation

This course is pending accreditation by the Institution of Engineering and Technology on behalf of the Engineering Council as meeting the requirements for Further Learning for registration as

a Chartered Engineer. Candidates must hold a CEng accredited BEng/BSc (Hons) undergraduate first degree to comply with full CEng registration requirements.

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Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

Semester one

In your first semester, you will be introduced to robotic systems and the “Internet of Things.” You will also develop your practical programming and coding skills by creating software for engineering applications.

You’ll be able to develop your specialism through optional modules, where you can learn the fundamentals of image processing, the principles of communications networks, the theoretical and practical aspects of parallel programming for multi-core architectures, and an introduction to electrical plasma and how it can be used in robotics and electronics.

Students must take 15 optional credits. Modules may be selected from this list subject to the requirement that at least 7.5 credits are completed in Semester 2.

Modules

Compulsory modules	Credits
THE INTERNET OF THINGS: ARCHITECTURE AND APPLICATIONS (ELEC423)	15
ENGINEERING PROGRAMMING (ELEC431)	15
ROBOTICS AND AUTONOMOUS SYSTEMS (ELEC430)	15
DIGITAL SYSTEM DESIGN (ELEC473)	15

Optional modules	Credits
MULTI-CORE AND MULTI-PROCESSOR PROGRAMMING (COMP528)	15

Optional modules	Credits
OPTIMISATION (COMP557)	15
IMAGE PROCESSING (ELEC319)	7.5
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
MOBILE COMMUNICATIONS AND SECURITY (ELEC463)	15
ADVANCED SYSTEMS MODELLING & CONTROL (ELEC476)	15

Programme details and modules listed are illustrative only and subject to change.

Semester two

Your second semester will continue your learning of Robotic Systems and introduce Industrial Robotics. We will also introduce you to ARM Cortex M Microprocessors.

You will continue to develop your knowledge of materials, and digital design skills while building the knowledge you'll need for your research project – moving into project planning and literature searching.

You'll also have the choice to learn about the principles of neural networks and their applications; develop an in-depth understanding of EMC, the scope of EMC, standards, typical EMC problems and solutions; and get an extensive overview of information theory and coding.

Modules

Compulsory modules	Credits
MICROPROCESSOR SYSTEMS (ELEC422)	15

Compulsory modules	Credits
RESEARCH SKILLS & PROJECT MANAGEMENT (ELEC483)	15
INDUSTRIAL ROBOTICS AND AUTOMATED ASSEMBLY (MNFG409)	15
ROBOTICS AND AUTONOMOUS SYSTEMS (ELEC430)	15
DIGITAL SYSTEM DESIGN (ELEC473)	15

Optional modules	Credits
NEURAL NETWORKS (ELEC320)	7.5
ELECTROMAGNETIC COMPATIBILITY (ELEC382)	7.5
INFORMATION THEORY AND CODING (ELEC415)	7.5

Programme details and modules listed are illustrative only and subject to change.

Final project

You will undertake your master's project in Semester three.

The primary aims of the project are:

- To provide you with the opportunity to gain an in-depth understanding of a subject and to learn research techniques
- To develop your ability to assemble and analyse data, and to apply engineering principles to the solution of practical problem
- To give you the opportunity of applying capacities (knowledge, initiative, enthusiasm, etc.) to plan, carry out and control an open-ended project in a topic of choice
- To gain simulated experience of working as a professional engineer in an industrial or research organisation.

Modules

Compulsory modules	Credits
MSC PROJECT (ELEC460)	60

Programme details and modules listed are illustrative only and subject to change.

Teaching and assessment

How you'll learn

You will learn by attending lectures, laboratory sessions, tutorials and doing your own research on a specific topic. You are expected to complete all the set coursework and exercises as it is an important part of your learning.

How you're assessed

You will be assessed through various methods including final exams, quizzes, exercises, laboratory reports, presentations, oral examinations and a dissertation.

Liverpool Hallmarks

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

The Liverpool Curriculum framework sets out our distinctive approach to education. Our teaching staff support our students to develop academic knowledge, skills, and understanding alongside our **graduate attributes**:

- Digital fluency
- Confidence
- Global citizenship

Our curriculum is characterised by the three **Liverpool Hallmarks**:

- Research-connected teaching
- Active learning

- Authentic assessment

All this is underpinned by our core value of **inclusivity** and commitment to providing a curriculum that is accessible to all students.

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Careers and employability

This MSc degree programme is the basis for a career in a profession that offers an extremely wide choice of employment opportunities in engineering, robotics, research and development, project management, finance and many more.

The University of Liverpool is one of the most targeted universities by top employers, according to The Graduate Market 2024, High Fliers Research. This means our graduates are in demand for employment and sought after by top employers worldwide.

Qualifying with a Robotics and the Internet of Things MSc degree from Liverpool will equip you with the knowledge, skills and confidence to explore a vast range of opportunities across the globe, in leading companies at the forefront of technology.

The graduates of this programme will be qualified across a broad range of subjects related to the robotics, electrical engineering and electronic engineering profession. They take up postgraduate training positions in design, development, research, manufacturing and consultancy with leading engineering companies, in order to pursue professional qualifications.

Others join smaller engineering companies to pursue professional qualifications while establishing themselves in engineering positions. Some graduates move into non-engineering positions where their analytical, communications and IT skills as well as technical background are much sought-after.

The main career opportunities for graduates from this programme are:

- Companies related to Robotic systems
- Companies related to robotic and electronic systems
- Companies utilising the latest technology to deal with problems requiring robotic and electronics solutions at high technical levels
- Companies and government agencies using and managing robotic and digital systems aspects
- Universities for further education, such as studying for a PhD degree.

Career support from day one to graduation and beyond

Career planning

From education to employment

Networking events

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Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

Tuition fees

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)

Full-time place, per year - £14,000

International fees

Full-time place, per year - £34,000

Tuition fees are for the academic year 2026/27.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support.

- You can pay your tuition fees in instalments.
- All or part of your tuition fees can be funded by external sponsorship.
- International applicants who accept an offer of a place will need to pay a tuition fee deposit.

If you're a UK national, or have settled status in the UK, you may be eligible to apply for a Postgraduate Loan worth up to £12,167 to help with course fees and living costs. **Learn more about paying for your studies**.

Additional costs

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This could include buying a laptop, books, or stationery.

Find out more about the additional study costs that may apply to this course.

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Entry requirements

The qualifications and exam results you'll need to apply for this course.

Postgraduate entry requirements

We accept a 2:2 honours degree from a UK university, or an equivalent academic qualification from a similar non-UK institution. This degree should be in a relevant subject, for example Mathematics, Engineering or Physical Sciences.

International qualifications

Select your country or region to view specific entry requirements.

Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College, means you're guaranteed a place on your chosen course.

English language requirements

You'll need to demonstrate competence in the use of English language, unless you're from a majority English speaking country.

We accept a variety of international language tests and country-specific qualifications.

International applicants who do not meet the minimum required standard of English language can complete one of our Pre-Sessional English courses to achieve the required level.

Pre-sessional English

Do you need to complete a Pre-sessional English course to meet the English language requirements for this course?

The length of Pre-sessional English course you'll need to take depends on your current level of English language ability.

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