UNIVERSITY OF LIVERPOOL

MEng

Mechatronics and Robotic Systems

UCAS code HH76

Entry requirements	Study mode	Duration
A level: ABB	Full-time	4 years

Apply by: **29 January 2025**
Starts on: **22 September 2025**

About this course

Immerse yourself in technologies in the areas of mechanical, control and electrical engineering, electronics, and computing. Mechatronics and Robotic Systems covers everything from driverless cars and automated robots at manufacturing assembly lines, to remotely operated vehicles on Mars.

Introduction

You'll receive a thorough grounding in a range of electrical and computer control systems. This MEng (Hons) degree programme has more depth and breadth than the BEng (Hons) programme in Mechatronics and Robotic Systems, studying core subjects, such as advanced system modelling and control, in more detail and a greater range of subjects.

We work closely with industry leaders to develop all of our programmes. Building on the core principles of electrical/electronic engineering, you will develop advanced skills in and experience with industry standard tools, technologies and working methods.

This programme also has a year abroad option, an incredible opportunity to spend an academic year at one of our partner universities. On the 4-year integrated masters

programme, you can go abroad either between Year 2 and 3 (apply in Year 2) OR Year 3 and 4 (apply in Year 3).

What you'll learn

- Working as part of a team to undertake major projects
- The numerous real-world applications of mechatronics and robotic systems
- Advanced skills in design and implementation
- Be prepared for the global workplace
- Different systems, technologies and cultures within the global industry.

Accreditation

Accredited by the Institution of Engineering and Technology on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Accreditation in detail

IET

IET are one of the world's leading professional societies for engineers and technicians and their accreditation covers a whole range of subjects including electrical, electronic, manufacturing, mechanical, systems and software engineering, as well as bioengineering, nanotechnology and renewable energy. It's recognised globally as an indicator of quality through the Washington and Sydney accords, which are governed by the International Engineering Alliance (IEA).

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Course content

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

Year one

The programme detail and modules listed are illustrative only and subject to change.

Modules

Compulsory modules	Credits
DIGITAL & INTEGRATED ELECTRONICS DESIGN (ELEC143)	15
ELECTRICAL CIRCUITS & SYSTEMS (ELEC142)	15
ELECTRONIC CIRCUITS (ELEC104)	15
EXPERIMENTAL SKILLS (ELEC172)	7.5
INTRODUCTION TO MECHATRONICS (ELEC123)	7.5
INTRODUCTION TO PROGRAMMING IN C (ELEC129)	15
SOLIDS AND STRUCTURES 1 (ENGG110)	15
MATHEMATICS A FOR ELECTRICAL ENGINEERS (ELEC191)	15
MATHEMATICS B FOR ELECTRICAL ENGINEERS (ELEC192)	15

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

Year two

The programme detail and modules listed are illustrative only and subject to change.

Modules

Compulsory modules	Credits
DIGITAL ELECTRONICS & MICROPROCESSOR SYSTEMS (ELEC211)	15
DYNAMIC SYSTEMS (MECH215)	15
ELECTRICAL CIRCUITS & POWER SYSTEMS (ELEC209)	15
FIELD THEORY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH283)	7.5
INSTRUMENTATION & CONTROL (ELEC207)	15
PROJECT, PROBLEM SOLVING & INDUSTRIAL AWARENESS (ELEC222)	7.5
SIGNALS AND SYSTEMS (ELEC270)	15
ROBOTIC SYSTEMS (ELEC230)	15
AMPLIFIER CIRCUITS - DESIGN AND APPLICATIONS (ELEC219)	15

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

Year three

You study both compulsory modules and options chosen from a list of advanced topics. In addition, an extended individual project is undertaken, linked to the needs of an industrial partner.

Modules

Compulsory modules	Credits
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15
DRIVES (ELEC331)	7.5
LOW POWER COMPUTER ARCHITECTURE (ELEC370)	15
ENGINEERING MANAGEMENT & ENTREPRENEURIAL SKILLS (ELEC352)	7.5
MENG PROJECT (ELEC440)	30
ROBOTIC SYSTEMS II (ELEC330)	15
IMAGE PROCESSING (ELEC319)	7.5
NEURAL NETWORKS (ELEC320)	7.5

Optional modules	Credits
ADVANCED MODERN MANAGEMENT (MNGT352)	7.5
APPLICATION DEVELOPMENT WITH C++ (ELEC362)	15
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
TRANSISTOR AMPLIFIERS AND DIFFERENTIAL CIRCUITS: THEORY AND DESIGN (ELEC371)	15

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

Year four

During this year, students continue compulsory modules, choose further options and undertake an extended group project. A recent project involved controlling a robot to navigate through a maze – each project with an advanced technical element is linked to a research group programme that is also supported by industry.

Modules

Compulsory modules	Credits
DIGITAL SYSTEM DESIGN (ELEC473)	15
MANAGEMENT OF DESIGN (MNGT413)	7.5
MENG GROUP PROJECT (EEE) (ELEC450)	30
MICROPROCESSOR SYSTEMS (ELEC422)	15
ADVANCED SYSTEMS MODELLING & CONTROL (ELEC476)	15
INDUSTRIAL ROBOTICS AND AUTOMATED ASSEMBLY (MNFG409)	15

Optional modules	Credits
ADVANCED SIGNAL PROCESSING (ELEC474)	15
COMMUNICATIONS NETWORKS (ELEC461)	15
RENEWABLE ENERGY & SMART GRID (ELEC435)	15
HIGH VOLTAGE ENGINEERING (ELEC407)	15

Optional modules	Credits
INFORMATION THEORY AND CODING (ELEC415)	7.5
MEASUREMENT, MONITORING AND SENSORS (ELEC421)	15
RADIO PROPAGATION FOR WIRELESS SYSTEMS (ELEC411)	7.5
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15

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

Teaching and assessment

How you'll learn

All programmes are taught over two semesters with examinations at the end of each semester. Modules vary from those which are assessed by examination only to others which are continuous assessment only. All programmes incorporate a substantial practical component, with an increasing emphasis on project work as you progress through to the final year. You can select your final year individual project in consultation with members of staff.

How you're assessed

Assessment is carried out through a mixture of exams, coursework and projects.

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

There is a high demand for engineers with experience in mechatronics and robotic systems in a number of industries. For example, there are numerous automotive applications, with modern high-performance cars having more than 100 computers hidden within their systems.

Some of our graduates go on to work in the industrial sector, in government and in education, whilst others enter non-technical professions such as banking, accountancy, management and law.

Recent employers include companies from the following industries:

- Technology/electronics: ARM Holdings Ltd, Ericsson Ltd, Marconi, Deva Electronic Controls, Siemens UK, Logica CMG
- Energy/utilities: Energetix Group PLC, Scottish Power, United Utilities PLC
- Research/science: Daresbury Laboratory, Science and Technology Facilities Council, Ministry of Defence, Royal Liverpool University Hospital (Clinical Engineering)
- Engineering and manufacturing: Heap and Partners Ltd, Siemens UK, The Highways Agency, British Nuclear Group.

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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 - £9,535
Year in industry fee - £1,905
Year abroad fee - £1,430 (applies to year in China)

International fees

Full-time place, per year - £29,100
Year in industry fee - £1,905
Year abroad fee - £14,550 (applies to year in China)

The tuition fees shown are correct for 2025/26 entry. Please note that the year abroad fee also applies to the year in China.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support. 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 may include a laptop, books, or stationery. All safety equipment, other than boots, is provided free of charge by the department.

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.

A levels

ABB

Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is **BBB** with **A** in the EPQ.

You may automatically qualify for reduced entry requirements through our contextual offers scheme. Based on your personal circumstances, you may automatically qualify for up to a two-grade reduction in the entry requirements needed for this course. When you apply, we consider a range of factors – such as where you live – to assess if you're eligible for a grade reduction. You don't have to make an application for a grade reduction – we'll do all the work.

Find out more about how we make reduced grade offers.

T levels

T levels are not currently accepted.

GCSE

4/C in English and 4/C in Mathematics

Subject requirements

For applicants from England: For science A Levels that include the separately graded practical endorsement, a Pass is required.

BTEC Level 3 National Extended Certificate

Distinction* in BTEC (any subject) plus AB in A Levels.

A Levels must include Mathematics and a science subject (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

BTEC Level 3 Diploma

D*D* in a relevant BTEC considered alongside grade B in A Level Mathematics.

BTEC Level 3 National Extended Diploma

D*D*D* and grade B in A Level Mathematics.

International Baccalaureate

35 overall, including 5 in Higher Level Mathematics and 5 in a Higher Level science subject.

Irish Leaving Certificate

H1, H1, H2, H2, H2, H3 including H2 or above in Mathematics and a science subject (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

Scottish Higher/Advanced Higher

AAB in Advanced Highers including Mathematics and a science subject (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

Welsh Baccalaureate Advanced

Accepted at grade B alongside A Level grades AA in Mathematics and a science subject (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

Cambridge Pre-U Diploma

D3 in Cambridge Pre U Principal Subject is accepted as equivalent to A-Level grade A M2 in Cambridge Pre U Principal Subject is accepted as equivalent to A-Level grade B Global Perspectives and Short Courses are not accepted.

Access

Considered if taking a relevant subject. 42 Level 3 credits at Distinction, including 15 Level 3 credits in Mathematics is required. GCSE English and Mathematics grade C/4 or above also required. Students will be required to take an online Mathematics assessment, please contact the University for further information.

International qualifications

Select your country or region to view specific entry requirements.

If you hold a bachelor's degree or equivalent, but don't meet our entry requirements, you could be eligible for a Pre-Master's course. This is offered on campus at the University of Liverpool International College, in partnership with Kaplan International Pathways. It's a specialist preparation course for postgraduate study, and when you pass the Pre-Master's at the required level with good attendance, you're guaranteed entry to a University of Liverpool master's degree.

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.

IELTS

6.0 overall, with no component below 5.5

TOEFL iBT

78 overall, with minimum scores of listening 17, writing 17, reading 17 and speaking 19. TOEFL Home Edition not accepted.

TOEFL Paper

Grade 6 at Standard Level or grade 5 at Higher Level

Duolingo English Test

115 overall, with speaking, reading and writing not less than 105, and listening not below 100

Pearson PTE Academic

59 overall, with no component below 59

LanguageCert Academic

65 overall, with no skill below 60

Cambridge IGCSE First Language English 0500

Grade C overall, with a minimum of grade 2 in speaking and listening. Speaking and listening must be separately endorsed on the certificate.

Cambridge IGCSE First Language English 0990

Grade 4 overall, with Merit in speaking and listening

Cambridge IGCSE Second Language English 0510/0511

0510: Grade C overall, with a minimum of grade 2 in speaking. Speaking must be separately endorsed on the certificate. 0511: Grade C overall.

Cambridge IGCSE Second Language English 0993/0991

0993: Grade 5 overall, with a minimum of grade 2 in speaking. Speaking must be separately endorsed on the certificate. 0991: Grade 5 overall.

Cambridge ESOL Level 2/3 Advanced

169 overall, with no paper below 162

LanguageCert

Grade 4 at Standard Level or grade 4 at Higher 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.

Pre-sessional English in detail

If you don't meet our English language requirements, we can use your most recent IELTS score, or the equivalent score in selected other English language tests, to determine the length of Pre-sessional English course you require.

Use the table below to check the course length you're likely to require for your current English language ability and see whether the course is available on campus or online.

Your most recent IELTS score	Pre-sessional English course length	On campus or online
5.5 overall, with no component below 5.5	6 weeks	On campus
5.5 overall, with no component below 5.0	10 weeks	On campus and online options available
5.0 overall, with no component below 5.0	12 weeks	On campus and online options available
5.0 overall, with no component below 4.5	20 weeks	On campus
4.5 overall, with no component below 4.5	30 weeks	On campus
4.0 overall, with no component below 4.0	40 weeks	On campus

If you've completed an alternative English language test to IELTS, we may be able to use this to assess your English language ability and determine the Pre-sessional English course length you require.

Please see our guide to Pre-sessional English entry requirements for IELTS 6.0 overall, with no component below 5.5, for further details.

Alternative entry requirements

- If your qualification isn't listed here, or you're taking a combination of qualifications, contact us for advice
- Applications from mature students are welcome.

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