UNIVERSITY OF LIVERPOOL

BEng (Hons)

Mechatronics and Robotic Systems

UCAS code HH67

Entry requirements	Study mode	Duration
A level: ABB	Full-time	3 years

Apply by: **14 January 2026**
Starts on: **28 September 2026**

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, and technologies in mechanical engineering, electronics, electrical engineering, control engineering and computing.

Whilst many products are essentially mechanical in nature, most could not function without electrical and computer control systems. There are also numerous automotive applications; modern high-performance cars have more than 100 computers hidden in the engine management system, anti-lock brakes, active suspension control and elsewhere. Engineers with experience in mechatronics and robotic systems are therefore in high demand.

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.

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 (IET) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly 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

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

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 will study both compulsory mechatronics and robotic systems modules, plus optional modules chosen from a wide-ranging list of advanced topics. You will also undertake an extended individual project.

Modules

Compulsory modules	Credits
DRIVES (ELEC331)	7.5

Compulsory modules	Credits
LOW POWER COMPUTER ARCHITECTURE (ELEC370)	15
BENG PROJECT (ELEC340)	30
ROBOTIC SYSTEMS II (ELEC330)	15
ENGINEERING MANAGEMENT & ENTREPRENEURIAL SKILLS (ELEC352)	7.5
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15
INDUSTRIAL ROBOTICS & AUTOMATED ASSEMBLY (MNFG309)	15

Optional modules	Credits
APPLICATION DEVELOPMENT WITH C++ (ELEC362)	15
DIGITAL SYSTEM DESIGN (ELEC373)	15
IMAGE PROCESSING (ELEC319)	7.5
NEURAL NETWORKS (ELEC320)	7.5
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
ADVANCED MODERN MANAGEMENT (MNGT352)	7.5

Optional modules	Credits
TRANSISTOR AMPLIFIERS AND DIFFERENTIAL CIRCUITS: THEORY AND DESIGN (ELEC371)	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, how to pay, 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 - £1,850
Year abroad fee - £1,385 (applies to year in China)

International fees

Full-time place, per year - £29,100
Year in industry fee - £1,850
Year abroad fee - £14,550 (applies to year in China)

Fees are for academic year 2025/26.

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

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
Mathematics and a second science.

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.

If you don't meet the entry requirements, you may be able to complete a foundation year which would allow you to progress to this course.

Available foundation years:

- Engineering Foundation (4 year route including a Foundation Year at Carmel College) BEng (Hons)

T levels

T levels are not currently accepted.

GCSE

4/C in English and 4/C in Mathematics

Subject requirements

Applied ICT, Biology (and Human Biology), Chemistry, Computer Science; Economics, Electronics, Environmental Science, Further Mathematics, Geography, Geology, ICT, Life and Health Sciences, Mathematics, Psychology, Physics; Statistics.

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 in a relevant Diploma, including Distinction in 'Further Mathematics for Engineering Technicians' unit. Students will also be required to take an online Mathematics assessment, please contact the University for further information.

International Baccalaureate

32 points overall and no score less than 4 and including 5 in HL Mathematics and 5 in a second HL science subject, or pass the IB Diploma with 6,5,5 in three Higher Level subjects, including HL Mathematics and a second HL science subject.

Irish Leaving Certificate

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

Scottish Higher/Advanced Higher

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

Welsh Baccalaureate Advanced

B in the Welsh Baccalaureate, plus AB at A level, including Mathematics and a second science subject.

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

Pass Access to HE Diploma in a relevant subject with 45 Level 3 credits, with 33 at Distinction (including 15 Mathematics credits) and 12 at Merit. Applicants will be required to take a maths test.

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.

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

International Baccalaureate English A: Literature or Language & Literature

Grade 4 at Standard Level or grade 4 at Higher Level

International Baccalaureate English B

Grade 6 at Standard Level or grade 5 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

Your most recent IELTS score	Pre-sessional English course length	On campus or online
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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