UNIVERSITY OF LIVERPOOL

MEng

Electrical and Electronic Engineering with a Year in Industry

UCAS code H607

Entry requirements	Study mode	Duration
A level: ABB	Full-time	5 years

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

About this course

Studying Electrical and Electronic Engineering allows you to specialise in subjects as diverse as power generation and transmission, and antennas and digital systems design, preparing you for an exciting career within the world of modern electronics.

Introduction

Electrical engineering is not simply about the production and transmission of electrical energy, but also about how it is used. In both its transmission and usage there are significant and increasing challenges facing electrical engineers, many related to sustainability and the environment.

This programme is designed for students with an interest in communications engineering and associated electronics, covering a wide range of topics in electronic and communications engineering.

You will learn through the practical application of concepts and theory, always with awareness of their relevance to the real world.

The MEng is an enhanced BEng programme, which means that you have an extra year to study advanced topics and undertake a group project based on the needs

of industry.

This programme includes a placement year, during which you will spend time working in an engineering company. This is an excellent opportunity to gain practical engineering experience.

Electrical and Electronic Engineering students graduate with skills sought after by a wide range of employers who are actively seeking engineers.

What you'll learn

- Practical problem-solving skills
- Advanced skills in hardware and/or software design and implementation
- Use of industry standard tools, technologies and working methods
- How to take projects from conception through to design, implementation and operation
- Solid training in both software and hardware information technology
- How to put learning into practice through your Year in Industry

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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

In your first year, module subjects covered range from digital electronics and electronics circuits, through to electromagnetism and electromechanics.

Modules

Compulsory modules	Credits
DIGITAL & INTEGRATED ELECTRONICS DESIGN (ELEC143)	15
ELECTRICAL CIRCUITS & SYSTEMS (ELEC142)	15
ELECTROMAGNETISM & ELECTROMECHANICS (ELEC120)	15
ELECTRONIC CIRCUITS (ELEC104)	15
ENGINEERING SKILLS (ELEC171)	15
INTRODUCTION TO PROGRAMMING IN C (ELEC129)	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

In your second year, a range of module subjects similar to those in your first year is covered.

Modules

Compulsory modules	Credits
CMOS INTEGRATED CIRCUITS (ELEC212)	7.5
COMMUNICATION SYSTEMS (ELEC202)	7.5
DIGITAL ELECTRONICS & MICROPROCESSOR SYSTEMS (ELEC211)	15
ELECTRICAL CIRCUITS & POWER SYSTEMS (ELEC209)	15
ELECTROMAGNETICS (ELEC210)	7.5
INSTRUMENTATION & CONTROL (ELEC207)	15
FIELD THEORY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH283)	7.5
SIGNALS AND SYSTEMS (ELEC270)	15
APPLIED DESIGN & INDUSTRIAL AWARENESS (ELEC273)	15
AMPLIFIER CIRCUITS - DESIGN AND APPLICATIONS (ELEC219)	15

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

Year three

This is the placement year, during which you will spend time working in an engineering company. Preparation for the placement is provided by the University's Careers and Employability Service, who will assist in finding a placement, creating a professional-looking CV, and preparing you for interview. Placements can be near or far in the UK, Europe and China.

Modules

Compulsory modules	Credits
UG PLACEMENT IN YEAR3 (ELEC299)	120

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

Year four

In your fourth year, you will undertake an extended individual project. In addition, you study both compulsory modules and a range of optional modules.

Modules

Compulsory modules	Credits
ENGINEERING MANAGEMENT & ENTREPRENEURIAL SKILLS (ELEC352)	7.5
MENG PROJECT (ELEC440)	30

Optional modules	Credits
ADVANCED MODERN MANAGEMENT (MNGT352)	7.5
ANTENNAS (ELEC312)	7.5
APPLICATION DEVELOPMENT WITH C++ (ELEC362)	15
DIGITAL AND WIRELESS COMMUNICATIONS (ELEC377)	15
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15

Optional modules	Credits
DIGITAL SYSTEM DESIGN (ELEC373)	15
DRIVES (ELEC331)	7.5
ELECTROMAGNETIC COMPATIBILITY (ELEC382)	7.5
LOW POWER COMPUTER ARCHITECTURE (ELEC370)	15
IMAGE PROCESSING (ELEC319)	7.5
NEURAL NETWORKS (ELEC320)	7.5
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15
RF ENGINEERING AND APPLIED ELECTROMAGNETICS (ELEC311)	7.5
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
INTEGRATED CIRCUITS - CONCEPTS AND DESIGN (ELEC372)	15
TRANSISTOR AMPLIFIERS AND DIFFERENTIAL CIRCUITS: THEORY AND DESIGN (ELEC371)	15

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

Year five

During this year, students will have further options for compulsory modules and will undertake an extended group project. Each project has an advanced technical

element, linked to a research group programme that is also supported by industry.

Modules

Compulsory modules	Credits
MANAGEMENT OF DESIGN (MNGT413)	7.5
MENG GROUP PROJECT (EEE) (ELEC450)	30

Optional modules	Credits
ADVANCED LOW POWER COMPUTER ARCHITECTURE (ELEC470)	15
ADVANCED GUIDANCE SYSTEMS (AERO430)	7.5
ADVANCED SIGNAL PROCESSING (ELEC474)	15
COMMUNICATIONS NETWORKS (ELEC461)	15
COMPUTATIONAL INTELLIGENCE (COMP575)	15
DIGITAL AND WIRELESS COMMUNICATIONS (ELEC477)	15
ELECTROMAGNETIC COMPATIBILITY (ELEC382)	7.5
RENEWABLE ENERGY & SMART GRID (ELEC435)	15
HIGH VOLTAGE ENGINEERING (ELEC407)	15
INFORMATION THEORY AND CODING (ELEC415)	7.5
INTEGRATED CIRCUITS - CONCEPTS AND DESIGN (ELEC472)	15

Optional modules	Credits
MEASUREMENT, MONITORING AND SENSORS (ELEC421)	15
MICROPROCESSOR SYSTEMS (ELEC422)	15
RADIO PROPAGATION FOR WIRELESS SYSTEMS (ELEC411)	7.5
ENGINEERING PROGRAMMING (ELEC431)	15
ADVANCED SYSTEMS MODELLING & CONTROL (ELEC476)	15
THE INTERNET OF THINGS: ARCHITECTURE AND APPLICATIONS (ELEC423)	15
POWER SYSTEMS ANALYSIS & DYNAMICS (ELEC402)	15
DIGITAL SYSTEM DESIGN (ELEC473)	15
MOBILE COMMUNICATIONS AND SECURITY (ELEC463)	15
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
RF ENGINEERING AND APPLIED ELECTROMAGNETICS (ELEC311)	7.5
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15
IMAGE PROCESSING (ELEC319)	7.5
DRIVES (ELEC331)	7.5
APPLICATION DEVELOPMENT WITH C++ (ELEC362)	15
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
ADVANCED MODERN MANAGEMENT (MNGT352)	7.5

Optional modules	Credits
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
ANTENNAS (ELEC312)	7.5
ELECTRONICS FOR INSTRUMENTATION & COMMUNICATIONS (ELEC317)	15
NEURAL NETWORKS (ELEC320)	7.5

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 for this course is undertaken through a range 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

Graduates of this degree programme go on to a wide range of careers: you may be responsible for planning the electricity distribution network, or you may be designing the electronics of the next ‘must have’ item.

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.

Specific career paths are many and varied, and have previously included:

- Design Engineer
- Systems Engineer
- Medical Physicist
- Postdoctoral Research Scientist
- Radio Frequency Scientist.

Many graduates have moved on to have careers with employers in the following industries:

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

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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 - £1,905

International fees

Full-time place, per year - £29,100
Year in industry fee - £1,905

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, assessment, 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 including Mathematics and a science subject (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

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 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

33 overall, including 5 in Higher Level Mathematics and 5 in a Higher Level 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

Accepted at grade B alongside A Level grades AB 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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