UNIVERSITY OF LIVERPOOL

Courses may close earlier than the advertised application deadline if the course is full.
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BEng (Hons)

Electrical and Electronic Engineering

UCAS code H603

Entry requirements	Study mode	Duration	
A level: ABB	Full-time	3 years	Apply by: **30 June 2026** Starts on: **28 September 2026**

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.

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

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

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
MATHEMATICS A FOR ELECTRICAL ENGINEERS (ELEC191)	15
MATHEMATICS B FOR ELECTRICAL ENGINEERS (ELEC192)	15
ENGINEERING IN PRACTICE (ELEC181)	30

Programme details and modules listed are illustrative only and subject to change. As part of our commitment to continuous improvement, we are currently reviewing all of our programmes. This may include refining study pathways, strengthening links with employers, integrating generative AI, developing students' research skills, and enhancing alignment with our research strengths. The course content currently shown on this page

reflects the programme as it is running in September 2026. This page will be updated for students beginning in September 2027 by 1 September 2026 at the latest.

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
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
COMMUNICATION SYSTEMS (ELEC202)	7.5

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Year three

In your final year, you will undertake a major individual project that is either linked to research work or has some industrial relevance.

Other modules are studied which reflect your personal interest, providing an opportunity either to focus on your preferred specialisation, or keep your options open with a broad range of subjects.

In addition to compulsory modules, you choose two from the indicative list of optional modules.

Modules

Compulsory modules	Credits
ENGINEERING MANAGEMENT & ENTREPRENEURIAL SKILLS (ELEC352)	7.5
BENG PROJECT (ELEC340)	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

Optional modules	Credits
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15
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
RF ENGINEERING AND APPLIED ELECTROMAGNETICS (ELEC311)	7.5
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
POWER SYSTEMS AND POWER ELECTRONICS (ELEC301)	15
INTEGRATED CIRCUITS - CONCEPTS AND DESIGN (ELEC372)	15
TRANSISTOR AMPLIFIERS AND DIFFERENTIAL CIRCUITS: THEORY AND DESIGN (ELEC371)	15

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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 Learning Framework

At Liverpool, we take a distinctive approach to education through the Liverpool Learning Framework. This means teaching that is engaging, inclusive and designed to help you succeed during your studies and beyond.

You'll develop specialist subject knowledge alongside the skills employers value most, including:

- Digital fluency
- Confidence
- Global citizenship

Our curriculum is characterised by the three Liverpool Hallmarks:

- Research-connected teaching - learning informed by the latest ideas and discoveries
- Active learning - taking part, applying knowledge and learning by doing
- Authentic assessment - assessments designed around real-world tasks and challenges

We also embed key priorities across our curriculum, including AI literacy, employability, and sustainability, helping you prepare for the future and make a positive impact in the world.

We're committed to creating a supportive and inclusive learning environment where every student can thrive.

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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 - £9,790
Year in industry fee - £1,955
Year abroad fee - £1,465 (applies to year in China)

International fees

Full-time place, per year - £32,000
Year in industry fee - £1,955
Year abroad fee - £16,000 (applies to year in China)

The fees shown are for the academic year 2026/27. Please be advised that tuition fees may increase each year for both UK and international students. For UK students, this will be subject to the government's regulated fee limits.

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

Your tuition fee covers almost everything. but you may have additional study costs to consider, such as books, specialist equipment or field trips.

All essential 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.

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

Acceptable sciences: 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.

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.

Scottish Higher/Advanced Higher

ABB in Advanced Highers including Mathematics and a science subject.

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.

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.

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

If you took a TOEFL test on or before 20 January 2026, you'll need 78 overall, with minimum scores of listening 17, writing 17, reading 17 and speaking 19. If you took a TOEFL test from 21 January 2026 onwards, when a new scoring system was introduced, you'll need 4 overall, with 4 or above in all components. 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 or online
5.5 overall, with no component below 5.0	10 weeks	On campus or online
5.0 overall, with no component	12 weeks	Online

Your most recent IELTS score	Pre-sessional English course length	On campus or online
below 5.0		
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.

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