UNIVERSITY OF LIVERPOOL

BEng (Hons)

Computer Science and Electronic Engineering with Year in Industry

UCAS code HG6L

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

Smart devices shape the way we live, both now and in the future. Study Computer Science and Electronic Engineering at Liverpool and ensure you're a part of the rapid technological development taking place globally.

Introduction

This programme combines the core elements of electronic engineering with those of computer science, which is the intellectual discipline underlying all aspects of software development.

Combining elements from these two disciplines will equip you with an added breadth of knowledge and greater specialisation. Our graduates are in demand because of their fluency both in the language of electronic engineers, as well as that of computer scientists, enabling you to bridge the gap between software systems and the real world.

You'll be taught by staff who are actively engaged in research, most with international reputations, ensuring you'll receive the most up-to-date and commercially-relevant education.

Take your university experience even further on a paid year-long industry placement, or spend a year abroad at a partner university or our China campus.

What you'll learn

- A broad educational background in electronics and computing
- Critical thinking
- Teamwork
- The practical application of concepts and theory, always with awareness of their relevance to the real world
- How to take projects from conception, through to design, implementation and operation
- Use of industry standard tools, technologies and working methods
- Practical engineering experience

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

During year one you will be introduced to the fundamentals of electronics as well as the underlying principles and theory of computing. Your lecture modules will cover the core subjects of electronic circuits, digital electronics, Java programming and data structures.

In addition, you will take modules such as mathematics and spend one day a week doing practical work in both the computer and electronics laboratories. This will give you excellent practical and transferable skills vital for subsequent years of the programme and invaluable in your future career.

Modules

Compulsory modules	Credits
ELECTRICAL CIRCUITS & SYSTEMS (ELEC142)	15
DIGITAL & INTEGRATED ELECTRONICS DESIGN (ELEC143)	15
ELECTRONIC CIRCUITS (ELEC104)	15
ENGINEERING SKILLS (ELEC171)	15
OBJECT-ORIENTED PROGRAMMING (COMP122)	15
MATHEMATICS A FOR ELECTRICAL ENGINEERS (ELEC191)	15
MATHEMATICS B FOR ELECTRICAL ENGINEERS (ELEC192)	15

Optional modules	Credits
INTRODUCTION TO PROGRAMMING (COMP101)	15
PROGRAMMING LANGUAGE PARADIGMS (COMP105)	15

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

Year two

The second year builds on the first with core modules in software engineering, database development, digital electronics, and signals and communication systems. More time is spent in the electronics laboratory doing practical work to consolidate the knowledge learnt in lectures and partaking in an extended team project.

Modules

Compulsory modules	Credits
COMMUNICATION SYSTEMS (ELEC202)	7.5
DATABASE DEVELOPMENT (COMP207)	15
DIGITAL ELECTRONICS & MICROPROCESSOR SYSTEMS (ELEC211)	15
INSTRUMENTATION & CONTROL (ELEC207)	15
PROJECT, PROBLEM SOLVING & INDUSTRIAL AWARENESS (ELEC222)	7.5
SIGNALS AND SYSTEMS (ELEC270)	15
SOFTWARE ENGINEERING I (COMP201)	15
DISTRIBUTED SYSTEMS (COMP212)	15

Compulsory modules	Credits
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. The placement is assessed by two reports, a poster and an oral presentation.

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 local, located nationally within the UK, or even take place abroad in the likes of 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

You will undertake an extended individual project during this year. Recent projects have included real-time GPS tracking of a vehicle fleet by mobile phones, and mobile multi-user dungeon (MUD) game using SMS messaging. You can choose lecture-based modules from both Electronic Engineering and Computer Science.

Modules

Compulsory modules	Credits
APPLICATION DEVELOPMENT WITH C++ (ELEC362)	15
LOW POWER COMPUTER ARCHITECTURE (ELEC370)	15
NEURAL NETWORKS (ELEC320)	7.5
ENGINEERING MANAGEMENT & ENTREPRENEURIAL SKILLS (ELEC352)	7.5

Optional modules	Credits
ADVANCED MODERN MANAGEMENT (MNGT352)	7.5
DIGITAL CONTROL AND OPTIMISATION (ELEC303)	15
FORMAL METHODS (COMP313)	15
INTRODUCTION TO COMPUTATIONAL GAME THEORY (COMP323)	15
MULTI-AGENT SYSTEMS (COMP310)	15
PHOTONICS AND OPTICAL INFORMATION SYSTEMS (ELEC313)	15
SIGNAL PROCESSING AND DIGITAL FILTERING (ELEC309)	15
BIOCOMPUTATION (COMP305)	15
PLASMA SYSTEM ENGINEERING (ELEC391)	7.5
DIGITAL SYSTEM DESIGN (ELEC373)	15
HONOURS YEAR COMPUTER SCIENCE PROJECT (COMP390)	30

Optional modules	Credits
BENG PROJECT (ELEC340)	30
SOFTWARE ENGINEERING II (COMP319)	15
CLOUD COMPUTING FOR E-COMMERCE (COMP315)	15

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

Teaching and assessment

How you'll learn

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.

How you're assessed

Assessment on this course will include a mix 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

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 and 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 PLC.
- Healthcare: Royal Liverpool University Hospital
- Government/Research: Daresbury Laboratory, Ministry of Defence, Science and Technology Facilities Council, The Highways Agency
- Engineering/Manufacturing: Deva Electronic Controls, Heap and Partners Ltd
- Royal Liverpool University Hospital (Clinical Engineering)
- Science and Technology Facilities Council
- Scottish Power
- Siemens UK
- The Highways Agency
- United Utilities PLC.

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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

International fees

Full-time place, per year - £29,900
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 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

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 (Chemistry, Computer Science, Further Mathematics, Physics or Electronics).

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

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.

Many countries have a different education system to that of the UK, meaning your qualifications may not meet our direct entry requirements. Although there is no direct Foundation Certificate route to this course, completing a Foundation Certificate, such as that offered by the University of Liverpool International College, can guarantee you a place on a number of similar courses which may interest you.

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	30 weeks	On campus

Your most recent IELTS score	Pre-sessional English course length	On campus or online
component below 4.5		
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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