# Electronic & Computer Engineering
## BEng (Hons)

**UCAS Code: S2D5** | **Duration: 3 years** | **Full-time** | **Hope Park** | **2024/2025**

Placement year opportunities available



## Course Overview

Electronic and Computer Engineering is an exciting and rapidly developing area that is increasingly affecting every aspect of our lives. Many everyday objects with which we interact, such as mobile phones, tablets and games consoles, need to be designed and programmed. This degree reflects recent Software and Hardware technological advances and exposes you to new, much sought-after skills and up-to-date areas of research.

You will learn the fundamentals of the subject, including Analogue and Digital Electronics, Programming, Software Development and more specialised topics such as Embedded Systems, Mobile Devices and Robotics. The degree has a good balance of academic theory and practical 'hands-on' project work. You will work in purpose-built laboratories, using the very latest equipment.

The degree includes recent technological advances in areas such as Embedded Systems, Intelligent Systems and Mechatronics. You will experiment and interact with specialist software, hardware interfaces and systems, as well as exotic robots and fabrication facilities. You will be taught by academics whose research is rated as internationally excellent by the latest Research Excellence Framework in areas including Robotics and Intelligent Systems.

## Entry Requirements

This course follows the standard University entry requirements. Please see the website for further information.

## Fees and Additional Costs

The tuition fees for 2024/2025 are £9,250 for full-time undergraduate courses.

As well as your tuition fees, you will need approximately £250 to buy key textbooks, hardware, software, and general computer consumables such as USB flash drives.

You will also need to consider the cost of your accommodation each year whilst you study at university.

Visit our accommodation webpages for further details about our Halls of Residence: **www.hope.ac.uk/halls/**

Applicants will need access to a computer if course delivery is switched to online. The University has a laptop lending service if remote study is necessary.

**LIVERPOOL HOPE UNIVERSITY**
1844

CONTACT

T: +44 (0)151 291 3000
E: enquiry@hope.ac.uk
www.hope.ac.uk

# Electronic & Computer Engineering
## BEng (Hons) Curriculum

## Year One

In the first year, you will develop the theoretical knowledge and practical skills that underpin Electronics and Computer Engineering. Topics studied include:

### Engineering Principles

This provides the fundamental blocks for the curriculum and covers topics such as electromagnetism, circuit theory, engineering practice, mathematics, engineering programming.

### Computing Principles & Professional Development

Professional Development prepares you for learning and study in an engineering discipline and also introduces the fundamental practices, values and expectations of an engineer.

## Year Two

In the second year, you will develop a broader understanding and knowledge of the theoretical and practical aspects of Electronics and Computer Engineering. You study:

### Networks

You study the key components of the internet and the key protocols that modern software solutions use over the internet.

### Object-oriented Programming with C++

You will not only learn the C++ programming language in depth, but use it as a vehicle for the more general skills of object-oriented coding and design.

### Professional Skills

A range of topics are covered in this block, more generally equipping you for working in industry.

### Software Engineering

This course complements the skills you learn for object-oriented coding, but uses the Java programming language.

### Applied electronics

In this block of study you will learn about semiconductor devices and circuit applications, control systems, mechatronics and computer networks.

### Web Development

This provides an overview of website development, including client-side programming with HTML, CSS, and Javascript, as well as server-side programming with PHP and an in-depth look at MySQL.

## Year Three

In your third year, the curriculum focuses on employability and is more influenced by staff expertise and research. Here, you will develop a deeper understanding of the theoretical aspects of Electronic and Computer Engineering.

Topics will include areas such a:

### Immersive technologies (VR/AR and MR)

You will learn using the software commonly used for virtual reality development.

### Internet of Things (IoT)

You will broaden your knowledge to the emerging internet-of-things, whereby physical things in the world are part of the internet.

### Advanced Web Technologies

This part of your course will focus on the Javascript language, which has emerged as one of the world's most popular languages.

### Intelligent Systems

The course focuses on artificial intelligence, with a particular emphasis on machine learning.

### Mobile and Ubiquitous Computing

The main emphasis of this part of the course is on Android application development, using Android Studio and the Java programming language.

## COURSE STRUCTURE

Teaching on this degree is structured into lectures, where all students are taught together, seminars of smaller groups of around 15-20 students, and tutorials which typically have no more than 10 students.

In your first year of study, there are approximately 12 teaching hours each week, which reduces to approximately 10 teaching hours in your second and third years. As well as teaching hours, you are also be expected to spend a number of hours each week studying independently, as well as in groups to prepare for any group assessments you may have.

## ASSESSMENT AND FEEDBACK

During each year you will have a variety of assessments, including written exams and portfolios, and coursework that closely relates to the practical aspects you have studied. In your final year, you complete a research project or a dissertation that is prepared for in the first years of your degree.

You will be given written feedback on your assessments, and you will have the opportunity to discuss this with your tutor in more detail.

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