

Electronic & Computer Engineering BEng (Hons)

UCAS Code: S2D5 | Duration: 3 years | Full-time | Hope Park | 2026/2027

Placement year opportunities available



Course Overview

Electronic and Computer Engineering is a fast-developing field that impacts almost every aspect of daily life. From mobile phones and tablets to games consoles, modern technology depends on skilled engineers to design, build, and program innovative systems. This Electronic and Computer Engineering degree reflects the latest software and hardware developments, equipping you with valuable skills and exposure to cutting-edge research.

Through this Electronic and Computer Engineering course, you will study the fundamentals of the subject, including Analogue and Digital Electronics, Programming, and Software Development, alongside specialist areas such as Embedded Systems, Mobile Devices, and Robotics. The degree balances academic theory with practical, hands-on project work, allowing you to apply your knowledge in purpose-built laboratories using the latest equipment.

The Electronic and Computer Engineering degree also covers advanced topics such as Embedded Systems, Intelligent Systems, and Mechatronics. You will gain experience with specialist software, hardware interfaces, and robotic systems, while benefiting from expert teaching by academics whose research in areas such as Robotics and Intelligent Systems is recognised as internationally excellent.

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 2026/2027 are £9,535 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.



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Electronic & Computer Engineering

BEng (Hons) Curriculum

Year One

This is a broad introduction to the subject and you develop the theoretical knowledge, problem solving and practical skills that underpin Electronic and Computer Engineering:

Introduction to Programming

This module explores the foundational concepts of programming and data structures, focusing on Java and Python, and examines how skills in structured coding, object-oriented programming, and core algorithms support the design of efficient, maintainable solutions to computational problems.

Introduction to Engineering

Students will study the key underpinning principles for their programme including analogue and digital electronics and engineering mathematics.

Data Fundamentals

This module introduces the concept of data and its collection, processing, analysis, and interpretation, while exploring storage systems such as relational databases and the end-to-end lifecycle of data in real-world contexts.

Fundamentals of Computational Science

This module introduces the foundations of computer science by weaving together mathematics, C programming, cryptography and scientific computing.

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:

Applied electronics

In this block of study you will learn about application circuits, sensors and signal conversion and sequential logic.

Networks

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

Control theory

Dive into the world of computer network infrastructure and protocols.

Microcontrollers

Microcontrollers are everywhere and are fundamental to your course. Being

able to program microcontrollers and interface them to sensors and actuators are critical skills.

Object-oriented Programming with C++

This topic provides a comprehensive understanding of classes, objects, inheritance, polymorphism, and other core OOP concepts, ensuring a strong foundation for advanced software development.

Introduction to Software Engineering

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

Signal processing

Integrates theoretical concepts with practical implementations and you will learn to analyse and process both continuous and discrete signals, with applications in filtering, system stability, and real-time processing.

Professional Skills

This topic equips you with a diverse set of skills essential for the professional realm.

Year Three

In your third year, you will develop a deeper understanding of the theoretical aspects of Electronic and Computer Engineering. Topics will include the following:

Electronic systems

This course will prepare you to be able to develop and programme electronics based systems using appropriate tools and language studying topics such as systems, amplifiers, further power electronics and system design.

Machine Learning Hardware

You will study the use of hardware systems to accelerate machine learning algorithms using computing architectures that are more appropriate for artificial intelligence.

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.

Embedded systems

This course will prepare you to be able to develop and program embedded

systems using appropriate tools and languages.

Machine Learning

You will learn the principles of intelligent systems and their application to computer science and the types of algorithms and programming languages used to solve real-world problems.

Mobile Development

Here, you'll focus on mobile application development using tools like 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 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.