



# **BEng (Honours) Electrical and Electronic Engineering**

**UCAS code: H606**

UCAS may change course codes - please check in your UCAS Handbook before applying.

## **Attendance**

Four years full-time (including one year work placement) or three years full-time

## **Admissions office**

For more information or to check the progress of your application phone 0114 225 5555, fax 0114 255 2167, e-mail [admissions@shu.ac.uk](mailto:admissions@shu.ac.uk)

International students see [www.shu.ac.uk/international](http://www.shu.ac.uk/international) for more information

## **Fees**

### **International students**

Typically £9,720 a year

### **International students next year**

Typically £10,080 a year

## **About this course**

This course is for those wanting a career at the highest level of engineering, in product development or senior management. You gain advanced engineering skills and an introduction to business and management.

Electrical and electronic engineers explore some of the newest and emerging technologies, and how those technologies can be applied to benefit mankind. Advances in electrical and electronic engineering are transforming the way companies do business.

We look for students who are motivated, inquisitive and want a challenge. You need to be interested in why and how things happen, and how things work. We help you develop problem solving skills to answer these questions.

You study electrical and electronic engineering, including

- system design and manufacture
- programming
- communications and information engineering
- computer networks
- instrumentation and control systems

The course is designed to develop a professional approach to problem solving, while raising awareness of business systems, project management, and factors such as environmental considerations.

We complement theory, simulation and case studies with practical laboratory project work, which increases your employability. The lab work builds your confidence in testing, design prototyping and investigative projects. You are also introduced to our research laboratories, creating practical solutions for new applications.

Final year projects use theory and industry standard specialised hardware and software to find solutions to practical problems. Typical examples of projects include work on

- nanotechnology for quantum dot applications
- noxious gas sensor circuits
- solar-powered water pump and filtration systems
- wireless autonomous robotic platforms
- control optimisation of pesticide removal plant

Industry fully supports the course with • work placements • course planning • visits • real projects • case studies • guest lecturers.

The optional placement year increases your career prospects and personal and professional development.

## Associated careers

As a graduate from this course you may become a professional engineer in one of the many sectors that use electronic engineering. You gain the skills and knowledge to move quickly and easily into management positions.

There are careers in industries such as • global telecommunications • fast moving consumer goods • IT hardware or software • aerospace • automotive • robotics • energy and water utilities • defence • industrial and medical instrumentation and control • oil companies • consultancy firms.

Our graduates have careers with established companies including • BBC • Corus • Emhart Glass • Sony Ericsson Mobile Communications • Honeywell Control Systems • Motorola • Rolls-Royce • First ScotRail • Siemens • Vodafone.

Some have joined new enterprises launched and developed by our own graduates, such as TBG Solutions.

You may also continue your studies at postgraduate level on our [MSc/PgDip/PgCert Electronics](#)

[and Information Technology.](#)

## Assessment

- coursework • project • examinations

## Professional recognition

This course is accredited by the [Institution of Engineering and Technology](#) and counts as the first step towards chartered engineer status.

## The personal view

This course offered me the opportunity to use the laboratories and equipment that are not easy to find in many other places and this was a big advantage for me in getting a job.

*Stephano Longo, 2006 graduate*

## Entry requirements

Normally five GCSEs at grade C or above including English language and mathematics, plus

- 240 points from GCE/VCE A levels taken at one sitting or BTEC National qualifications, including mathematics and scientific subjects. Points from Key Skills and general studies A level are excluded.
- Foundation pass from our [Extended Degree in Engineering](#), depending on academic performance
- pre-2002 A levels 18 points from at least two scientific subjects, including mathematics
- GNVQ advanced level 3 merit, including optional and additional mathematics
- pre-2003 BTEC/SCOTVEC National Certificate/Diploma pass in a relevant subject with seven merits including mathematics
- Access an Access to HE Diploma with at least 45 credits at level 3 from a QAA-recognised Access to HE course, or an equivalent Access to HE certificate

If English is not your first language you need an IELTS score of at least 6.0.

We will make an offer to all applicants who are likely to achieve or better these entry requirements.

We welcome applications from people of any age. We may be flexible in our normal offer if you can show a commitment to succeed and have the relevant skills and experience. This must show that you will benefit from and finish the course successfully.

## Course content

### Year one modules

• electrical and electronic engineering • engineering practice • introduction to programming • computing for engineers (modelling and simulation) • engineering mathematics • engineering technology and the environment

### Year two modules

• analogue and digital electronics • communication systems and computer networks • digital communications and information engineering • embedded microcontroller systems • control and instrumentation • further mathematics for electronic engineers • business and management for engineers • structured system design techniques

### Year three

• optional work placement

If you choose the four year route, you spend at least 36 weeks on a paid, work-based placement.

### Final year modules

• electronic systems • control systems • mobile communications and digital signal processing • optoelectronic and microelectronic engineering • power electronics • project management • personal project

[View a short video](#) of one of our student's final year projects.

*The University's terms and conditions apply to all offers of places to study at the University.*