

# Electrical and Electronic Engineering



Undergraduate study

## Courses

### Single Honours

#### **BEng Electrical and Electronic Engineering**

three years H600

#### **MEng Electrical and Electronic Engineering**

four years H606

#### **MEng Electrical and Electronic Engineering with Innovation**

four years H604

#### **MEng Electrical and Electronic Engineering with Study in Continental Europe**

four years H605

#### **MEng Electrical and Electronic Engineering with Study Abroad\***

four years

#### **MEng Electrical and Electronic Engineering with a Year in Industry<sup>†</sup>**

five years

\*Entry by transfer from H606 at the end of first year.

### Joint Honours

#### **BEng Computer Science and Electronics**

three years GH45

#### **BEng Mechanical and Electrical Engineering**

three years H361

#### **MEng Computer Science and Electronics**

four years GH46

#### **MEng Computer Science and Electronics with Study Abroad**

four years GH4P

#### **MEng Mechanical and Electrical Engineering**

four years H360

#### **MEng Mechanical and Electrical Engineering with a Year in Industry<sup>†</sup>**

five years

<sup>†</sup>Entry by transfer subject to eligibility criteria.

## Why study electrical and electronic engineering at Bristol?

Do you think green energy and transport are important? Did you know that electronic engineers develop life-saving medical instrumentation? Do you believe the internet and the growth of mobile communications have had a huge effect on society? Do you think future cities will be smart, with self-driving cars on the road? If you have answered 'yes' to any of these questions, you have already understood the impact electrical and electronic engineering have on our lives.

Electrical and electronic engineers develop technologies that will shape our future, in fields as diverse as mechanical and aerospace engineering, power generation, transport, healthcare, quantum information, computing, artificial intelligence, cryptography and communications. Consequently, electrical and electronic engineering is one of the broadest engineering disciplines in terms of the range of career possibilities it offers.

Links with local industry help to make the University of Bristol an excellent place to study electrical and electronic engineering. Renewable energies and smart grids are two of the fastest growing UK sectors, and a huge number of renewable energy-related small and medium-sized enterprises are based in this region. Bristol is also home to one of Europe's largest clusters of microelectronics industries, many of the UK's biggest aerospace companies and a thriving creative media industry.

Our continuing investment in facilities forms part of the exceptional student experience at Bristol. The Engineering Growth Project has recently invested £14 million to equip the Faculty of Engineering well into the 21st century. This major expansion of our facilities includes state-of-the-art equipment and large, flexible teaching, design, study and workshop spaces, which enable interactive teaching and learning. Our new atrium acts as a social learning and meeting place, with a new café and bookable project and study rooms.

*'Bristol is always at the forefront of research, so it is a great learning environment and place to grow as an engineer and individual. The best thing about Electrical and Electronic Engineering at Bristol is the number of practical projects we do, which allow us to implement all the theoretical knowledge we have obtained in class. We also get a lot of support, so you always feel like you can get the most out of any learning experience.'*

Andrea (MEng Electrical and Electronic Engineering)

## What will you study?

Electrical and electronic engineering comprises several themes. Electrical engineering is concerned with the 'power' aspect of electricity, including topics such as renewable energy and high-performance electric drives for green vehicles. Electronic engineering uses electricity to convey signals, for instance in medical equipment, music systems and computers. Communications is a branch of electronic engineering that covers the transmission of data, sound and images – which could be over long distances and in hostile conditions, or just between a wi-fi router and your phone.

The normal route to becoming a chartered engineer is through our four-year MEng degrees, but we also offer three-year BEng degrees. The MEng provides more breadth and depth than the BEng, allowing you to undertake a major group project as well as your individual research project. Three-year and four-year courses within the same subject share a common first two years, so you can transfer between them until the start of the third year. By that stage you will know which areas of the subject particularly interest you.

The first laboratory sessions in year one ensure that you understand the basic concepts. Often, they will be delivered in conjunction with Dynamic Laboratory Manuals – online resources that allow you to explore the lab activity before starting the session.

From the middle of year one onwards, you will be encouraged to start designing hardware and software solutions in collaboration with your laboratory partners. The project in year three of the MEng will teach you about the challenges of teamworking as well as technical issues. Much of your final year will be spent on your individual project. We will suggest a wide range of possible project titles, but you will be free to come up with your own idea.

If you would like to complete part of your studies outside the UK, you should consider the MEng 'with Study Abroad' or 'with Study in Continental Europe'. On these courses, you will spend your third year at an overseas institution studying in English or a foreign language, respectively. Current destinations include France, Germany, Spain, the USA and Australia.

The MEng Electrical and Electronic Engineering with Innovation combines in-depth subject specialism with interdisciplinary breadth, creative teamwork and entrepreneurial skills. You will gain a solid discipline strength in electrical and electronic engineering and, using this subject knowledge in an innovative way, translate your ideas into plans for digital and creative enterprises.

In conjunction with the Department of Computer Science, we offer a Joint Honours BEng in Computer Science and Electronics. You can also choose a four-year MEng course in this subject, which incorporates an industry-based project as part of your third year.

In conjunction with the Department of Mechanical Engineering, we offer Joint Honours BEng or MEng degrees in Mechanical and Electrical Engineering. These courses enable students to work in a wide range of industries at the interface of the two disciplines. To give just three examples, you could be working on new electric aircraft, involved in a sustainable energy business or designing the electric cars of the future.



Students typically have an average of 20 to 25 timetabled hours per week in term time. Usually, half that time will be spent in lectures and the remainder on laboratory work, which allows you to try out what you have learned. Engineering is a creative subject and we try to reflect that in the curriculum. As you progress through your degree, you will find that practical activities give you increasing freedom to make your own design decisions.

Throughout your degree you will be given feedback on your performance to help you improve. Your degree result will be based on a mixture of coursework marks and examination marks.

Ranked 7th in the UK for  
Electrical and Electronic  
Engineering.

Complete University Guide 2019



## Careers and graduate destinations

Our graduates are highly sought after and find employment in industries including: broadcast, mobile and optical communications; alternative and green energy; integrated circuit design; medical engineering; avionics; consumer electronics; computer networking; and automotive. Some of our graduates go into research, while others pursue careers outside engineering.

As well as having support offered by the University Careers Service, engineering students benefit from a dedicated Industrial Liaison Office, which develops engineering-specific industrial links for students.

As an engineering student at Bristol, you will benefit from an outstanding range of activities designed to enhance your employability. These include our Inside Track lecture series, where business insiders offer first-hand insight into the engineering industry. Our industrial mentoring and internship schemes provide opportunities to gain valuable experience and make important connections, and our regular newsletter highlights further opportunities and industry events. See our website for more information: [bristol.ac.uk/engineering/ilo](http://bristol.ac.uk/engineering/ilo).

**‘The cohort is full of the nicest people; everyone is so helpful and there is an amazing group feeling where everyone works together. The ILO is brilliant. All the course societies are perfect; they get really involved and offer a mix of professional development events and fun community ones.’**

Chris (MEng Electrical and Electronic Engineering)



## Making your application

### Typical offer for BEng Electrical and Electronic Engineering\*

Visit [bristol.ac.uk/ug19-eleceng](http://bristol.ac.uk/ug19-eleceng) for Joint Honours and other qualifications.

**A-levels** AAA or A\*AB (contextual ABB<sup>†</sup>) including A in Mathematics.

**IB Diploma** 36 points overall (contextual 32<sup>†</sup>) with 18 at Higher Level (contextual 16<sup>†</sup>), including 6 at Higher Level in Mathematics.

**English Language profile** Profile E<sup>††</sup>

**GCSEs** No specific subjects required.

<sup>†</sup>For information on contextual offers, visit [bristol.ac.uk/contextual-offers](http://bristol.ac.uk/contextual-offers).

<sup>††</sup>For details of English language profiles, visit [bristol.ac.uk/ug-language-requirements](http://bristol.ac.uk/ug-language-requirements).

**Selection** UCAS or Common Application.

\*The typical offer is indicative only and the University accepts a wide range of qualifications. The information is correct at the time of printing (June 2018); however, we recommend you check the University's website for the most up-to-date information: [bristol.ac.uk/ug-study](http://bristol.ac.uk/ug-study).

When applying it is important that you demonstrate a genuine interest in your chosen course, so please visit our website and read through the detailed information on the courses and units that we offer. In your personal statement we are looking for real enthusiasm and commitment to the subject, and you should highlight any relevant work experience or extracurricular research you've undertaken, as well as what interested you about it and why.

To join the 'Study in Continental Europe' course, you will need a good language qualification to at least GCSE standard.

### Further information

Find out more about the Department of Electrical and Electronic Engineering: [bristol.ac.uk/engineering/departments/eeng](http://bristol.ac.uk/engineering/departments/eeng).

For details of the MEng courses in computer science and electronics please visit our mini-website: [bristol.ac.uk/engineering/interdisciplinary/cse](http://bristol.ac.uk/engineering/interdisciplinary/cse).

# Contact us

## Enquiries Team

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If you have any questions about courses, applications or any aspect of being a UK or international student at Bristol please contact the Enquiries Team.

## Accommodation Office

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University guide to the city of Bristol  
[bristol.ac.uk/citybristol](http://bristol.ac.uk/citybristol)

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## Photography

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