What do Electronic & Electrical Engineers do?

They control how electricity is used.
Electricity plays a role in almost everything we use.
The safe and reliable storage of electricity powers our phones, our laptops and our wearable technology.
Electricity powers our kettles, our TVs, our lights and (believe it or not) the water supply and sanitation in our homes.
Tiny electrical circuits allow LEDs to turn on or off to let us know if things are working properly. Huge electrical motors power wind turbines to ensure a continuous supply of clean, renewable energy.

They solve problems.
Our academics have developed a way of identifying infection using thermal imaging which reduces the need for unnecessary antibiotics.

They improve things.
Our National Epitaxy Facility supplies epitaxial wafers that can be used to carry huge amounts of data on microscopic surfaces – these make phones faster yet smaller.
Our Communications team are setting up a national facility to improve the speed of big data that can be carried by mobile networks which will increase download and streaming speeds.

They have developed a super battery that stores enough electricity to power 30,000 homes for 30 minutes and supplies it back to the grid to ensure the UK can enjoy a consistent and reliable supply of energy from renewable sources.

We combine world class academic knowledge with cutting edge practical application to deliver effective, future facing solutions to global problems.

Be a part of Electronic and Electrical Engineering and find out what you can do.
#electricrevelution
Our Vision

To provide our students with outstanding theoretical and practical teaching and learning experiences that lead to global career opportunities across a variety of industries. Our world class research turns brilliant ideas into advanced technology, developing solutions to tomorrow’s problems.

Team Work

Engineering is a multidiscipline function which requires effective team and group work. From your first week your learning experience at The University of Sheffield incorporates group work to help build your confidence and effectiveness within a team dynamic.

Our pioneering Sheffield Industrial Project Scheme (SHIPs) gives second year students the chance to work in small teams on real industrial inspired problems. For the 2017/2018 projects our students worked with companies such as ARUP and Magnomatics on a range of projects including detection of magnetic flux leakage in a gearbox that will be used in a commercial wind turbine.

The Institution of Engineering and Technology (IET) is the professional and International body representing Electrical and Electronic Engineers. They set the standards of qualifications for professional EE engineers and only accredit those degrees that also meet these high standards.

We are extremely proud that all of our EEE degrees are accredited by the IET. By choosing an accredited course you can become a Chartered Engineer which will put you a step ahead of the competition when you begin your career. Please see the online course description for more details.

Below: Students in the Electronics and Control Lab in The Diamond
Course Content & Structure

For the full list of the courses we offer plus an in-depth look at the modules they cover please visit sheffield.ac.uk/eee/admissions/index.

Typical timetable structures:

1st Year:
Around 25 contact hours per week which includes lectures, problem classes, tutorials and practical lab sessions. Wednesday afternoons are kept free across all University Faculties to allow you the time to take part in sports or any other extra-curricular groups in which you are interested.

2nd Year:
In this year you will study topics in more depth and undertake a range of practical activities, culminating in a significant design project. At the end of the year you can make a final choice about which degree you want to study towards and whether you want to graduate after three years with a BEng or a four years with an MEng.

3rd Year:
In this year you will be expected to specialise – taking taught modules that are oriented towards your choice of degree and a module relating to law and finance. In conjunction with one of our academic staff you will also undertake a significant, individual research or design project that will build on the practical studies in years 1 and 2. If you are on a BEng programme you will graduate at the end of this year.

4th Year:
In this final MEng year you will take a set of core taught modules that provide the final specialisation. Additionally, you will work on a significant group project, often usually in collaboration with industry. Your studies will also include a management module.

Additional Options

Year In Industry:
Most of our degrees offer the opportunity to have a year in industry incorporated into your study programme. You will spend a year working full-time for an engineering company, putting your academic study into context and enhancing your career prospects. Placements take place in the penultimate year of study, ie. between the second and third year for BEng students and between the third and fourth year for MEng students.

See how Tudor got on at his year at McLaren on page 8.

Year Abroad:
As it is increasingly important for engineers to have an international perspective we offer the opportunity for students to spend the third year of their course at one of the high quality European universities with which we have arrangements.

Find out more at sheffield.ac.uk/Erasmus

Right: The Student’s Union
My decision to choose to study Electronic and Electrical Engineering was quite a simple one. I knew the degree would enable me to understand not just how computers work, but electronic devices as a whole, while also being one of the most versatile bachelor’s degrees in engineering.

I picked the “Year in Industry” programme as it gives you the opportunity to work on complex, large-scale projects and in an environment you normally wouldn’t be able to due to lack of experience.

At McLaren I’m designing and building a high-performance power converter primarily projected for use in motorsports applications, to help with optimising electric power integration in hybrid powertrains.

My project was mainly in the field of electronic engineering, so there was quite a lot of relevant material from 2nd year that helped me understand basic concepts, such as circuit topologies, mathematics and programming.

Obviously when you’ve been a fan of McLaren ever since you were little, it can sometimes be overwhelming walking on the large airy corridors, next to the cars in which the likes of Senna, Hamilton or Alonso created history! However, I also found this very motivating and inspirational.”

“I chose to study Electronics and Communications as I am interested in both hardware and software and this was the best of both worlds. Part of the reason I chose The University of Sheffield was Women In Engineering as I thought a university that promoted the role of women in Engineering would provide motivation to me as an addition to my academic studies.

Being part of Women In Engineering provides me with weekly motivation and I feel it is my duty to empower other women/girls. I am involved in the Women In Engineering Brownie programme where we show the Brownies various technological devices such as infra-red cameras and we teach them the basics in simple language.

Women are currently under-represented in Engineering and the University of Sheffield aims to address this. The Department of Electronic and Electrical Engineering offer Anne Bainbridge Scholarships – our first female graduate – to our female students starting their first year of undergraduate study with us.

To find out more details please visit sheffield.ac.uk/eee/admissions/female_scholarships
Michelle, 2nd Year BEng
Electronic Engineering.
Secretary for the EEE Society.

“I chose Electronic Engineering as I wanted to make things and this is ideal as it goes in-depth into the areas that I like, such as programming. I attended a session run by the EEE Society where you got to control a micro-controller to light up LEDs, which I loved!

I found out that there were vacancies within the Society and decided to run for Secretary as I wanted to be involved with running events. I became Secretary by making a 1 minute speech and was elected by other Society members.

As secretary I organised meetings, created agendas for meetings, and I organised a Society trip to Denmark. We chose Denmark as they have a very good windfarm – it powers half the country. We thought it would be interesting to see how it works and maybe inspire members to concentrate on renewable energy.”

Sam, 2nd Year BEng
Electronic Engineering.
President of the EEE Society

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“The EEE Society at the University of Sheffield holds Social and Educational Events for all EEE students. In previous years members have visited the Jaguar Land Rover factory and climbed Mount Snowdon!

If you are looking for social events in your free time or want to learn more about EEE topics and industry then the society is a great group to do that with. In my first year it helped me meet lots of new people and settle into University life much more quickly; as well as giving me experiences I wouldn’t have had otherwise, such as visiting Drax Power Station!”

Find out more at eeesoc.com

@uoseeesoc

/uoseeesoc

Above: Michelle – EEE student

Above: Sam – EEE student
Engineering is about making things and by studying with us you will not only make things but you will get to understand why and how they work. Our study programmes are designed to make the most of your potential and combine theoretical learning with practical application.

Teaching is a combination of lectures, problem classes and tutorials which offer you the opportunity to develop your understanding by interacting with lecturers who are involved in cutting-edge research. Laboratory classes, computing, design and project work give you the practical experience vital for career progression.

In your First and Second Years you will have your lectures and your practical lab work in The Diamond (see page 19). This was purpose built to facilitate the highest quality engineering teaching with 17 state-of-the-art teaching laboratories covering all engineering disciplines.

The Electronics and Control laboratory is furnished with industry standard equipment to give you the edge over your competitors as you start your career within Electrical Engineering.

"The Electronics and Control lab contains the kind of things that you’ll actually be doing. You’re not going to be doing theoretical stuff unless you go into a very specific area of electronics so the majority of the people here will most likely be using the boards and tools we are using here."

Hamish, MEng Electrical and Electronic Engineering.

"The Diamond teaching Clean Room enables students to experience the design, manufacture and test of tiny engineered devices. These are the same devices used in smart phones and car airbags. The air inside the cleanroom is continually filtered to remove the dust which would otherwise destroy our structures. We can define dimensions as small as one micron – one thousandth of a millimetre!"

Hamish, MEng Electrical and Electronic Engineering.

"The Diamonds teaching Clean Room – it is unusual for undergraduate students to have access to a clean room and it is a facility we are proud to offer our students. You will have the opportunity to get hands on with various microfabrication techniques in a unique environment.

Other labs that are in The Diamond include computer labs, a mechanical workshop, Aerospace simulation, a Materials lab, an Augmented and Virtual Reality lab, a Thermodynamics lab and a Fluids Engineering lab.

EEE students will also have access to the iForge which is a workshop space run by students for students – it is believed to be the first of its kind in a UK university. You will have the opportunity to be trained on equipment and machinery ranging from 3D printers to circular saws which you can use for academic or personal projects.

For more information visit sheffield.ac.uk/diamond iforgesheffield.org

Twitter: @iForge_sheff
Facebook: /iForgeSheffield

Above: Student in the teaching Clean Room

Above: Hamish – EEE student

Above: Amy & Will using a circular saw in the iForge

Above: Student in the teaching Clean Room

Dr. Gavin Williams, Clean Room Academic Leader.
Where do our graduates get jobs?

The average EEE graduate salary is:
- £26k* after 6 months
- £32k* after 3 years

Here are some of the companies that our 2016/2017 graduates have started their careers with (source: Graduate Employment Marketing Statistics).

90%* of our graduates are in professional/managerial employment 6 months after graduation.

The average EEE graduate salary is:
- £26k* after 6 months
- £32k* after 3 years

Here are some of the companies that our 2016/2017 graduates have started their careers with (source: Graduate Employment Marketing Statistics).

*source NSS 2018

Our Research

The Department of Electronic and Electrical Engineering has been at the forefront of electrical engineering innovation since 1917.

Our academics are involved with on-going research within their areas of specialism covering Communications, Electrical Machines and Drives and Semiconductor Materials and Devices.

They lead research projects with fellow academics across other engineering disciplines as well as industrial partners including Siemens, Jaguar Land Rover and Dyson allowing them to apply their knowledge to solve wider world problems which can be categorised into cross cutting research themes.

Their projects include improving the performance of microchips in mobile phones, increasing the efficiency of energy storage to support the supply of energy from renewable sources and designing powerful electric motors used in wind turbines on off-shore wind farms.

Our long standing relationships with these companies offer our students the opportunity to take part in summer or year long industrial placements, mock assessment centres and jobs when they graduate.

To find out more please visit sheffield.ac.uk/eee/research

Research Themes

- **Energy**
- **Communications**
- **Transport**
- **Manufacturing**
- **Technology**

**PHILIPS**
**NISSAN**
**RENAULT**
**TIPMOS**
**ABB**
**ARM**
**VOLVO**
**SCOTLAND**
**NEC**
**LANE-ROVER**
**VEMAY**
**MINI**
**SIEMENS**
**JAGUAR**
**ARM**
**VENUE**
**VISTA**
**FIAT**
**GOODRICH**
**REVOLVING**
**COOPER Lighting**
**QINETIQ**
**GARRETT**
**EXIDE**
**VARTA**
**ZEISS**
**AEROSMITH**
**VOLKSWAGEN**
**MAZDA**
**BNFL**
**AEG**
**HURST**
**KONICA MINOLTA**
**MITSUBISHI**
**COCA COLA**
**DVCE CABLE**
**VOLKSWAGEN**
**SOFTBANK**
**LEXUS**
**MITSUBISHI**
**COCA COLA**
**DHL**
**SONY**
**HEINEKEN**
**NATIONAL INSTRUMENTS**
**BMW**
**LEXUS**
**NATIONAL INSTRUMENTS**
**HONDA**
**LAMBORGHINI**
**MICROSOFT**
**B&O**
**DUNLOP**
**SAP**

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Undergraduate Study 15
We Reward Excellence

Engineering is recognised as a priority subject of strategic importance and attracts additional funding for bursaries to help offset the cost of studying for a degree.

University bursaries are awarded on the basis of A-level grades (or equivalent), household income and whether you are part of an outreach scheme. Find out more at sheffield.ac.uk/undergraduate/fees-funding/bursaries-2019.

We offer various scholarships to UK, EU and International students. These recognise the academic achievement of students entering our First Year and subsequently reward continued high academic performance. Please visit our website for the most up to date information.

We also offer the Thomas Walker Scholarship to assist a mature student to return to education to study for a degree in the Department of Electronic and Electrical Engineering. The scholarship will provide a stipend of £3,000 per year for each year of the degree programme.

For the purposes of this scholarship, a mature student is defined by the University as any student who is over the age of 21 on entry. We would particularly welcome applications from individuals with dependants and/or caring responsibilities. To find out more please visit sheffield.ac.uk/eee/admissions/scholarships.

A Great Place to Live

All first year students accepting a firm offer are guaranteed accommodation in one of the University’s award winning purpose-built student villages. These offer the highest standards of accommodation, either in the city centre or the leafy suburbs 15 minutes walk to the west of the University. The students are a community in themselves, offering a great atmosphere to study and make friends for life.

Sheffield is safer than other big cities – the UK Peace Index 2013, a study using Home Office data, found Sheffield to be England’s safest major city. It’s an easy-going and tolerant place to live, and local people welcome the contribution students make to life in the city.

After graduating, more students decide to stay on and live in Sheffield than in any other city.

For more information on what the City of Sheffield has to offer, University accommodation and any other facet of University life please visit sheffield.ac.uk.
As a student at Sheffield, you’ll find all the support you need for a successful and happy time at University.

Within EEE we have a superb Student Support Office who can help you with any queries you may have regarding your degree. On arrival you are appointed a Personal Tutor who you will have throughout your First and Second Years and who you will be allocated time with.

Our international students benefit from additional English language support. The University will also provide support with visa issues and other matters that affect your studies at Sheffield.

Here are a few of the academics who are Personal Tutors and who, if you join, will become familiar faces!

We know you will have lots of questions and we hope we are able to answer them via the information below. However, if you wish to speak to someone in person please email us at eee-rec@sheffield.ac.uk or pop by our stand at an Open Day!

www.sheffield.ac.uk/eee/admissions/faqs

Dr. Luke Seed
Departmental Director of Learning & Teaching

Ken Mitchell
First Year Course Tutor

Julie Hall
Learning and Teaching Manager

Top: Outside The Diamond
Bottom: Inside The Diamond - this staircase was based on the design of a screw
Here to help

We want you to enjoy your experience with EEE at The University of Sheffield and we are here every step of the way to answer your questions. You can contact us by:

**Phone:**
+44 (0) 114 222 5355

**General Enquiries:**
infoeee@sheffield.ac.uk

**Undergraduate Enquiries:**
ee-rec@sheffield.ac.uk

www.sheffield.ac.uk/eee