



The University of
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Electrical and Electronic Engineering Undergraduate Study

www.nottingham.ac.uk/eee

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Front cover image: Student working in a Faraday chamber

Welcome to the Department of Electrical and Electronic Engineering

Electrical and electronic engineering continues to transform the way we live - from the latest consumer products through to sophisticated scientific, industrial and healthcare technologies. The subject area encompasses an exciting range of topics and develops a variety of skills that are in great demand by employers.

We offer a balanced portfolio of degrees, introducing advanced subjects within the context of practical engineering. This provides both an appreciation of the whole field and allows you to make informed and flexible choices on your degree specialisation and project work. We take pride in providing every student with high quality teaching in state-of-the-art facilities and a supportive and friendly environment. Students

can also choose to study abroad and take industrial placements to complement their studies in Nottingham.

I hope that this brochure provides the answers to any questions you have about the exciting opportunities that studying electrical and electronic engineering at Nottingham can provide for you. However, if you have any further questions, or if you would like to visit us on one of our University or department open days, please do not hesitate to contact our friendly admissions team using one of the methods listed at the end of this brochure.

Professor Barrie Hayes-Gill
Head of the Department of Electrical and Electronic Engineering



Fourth year student David Poltorak working on his helicopter project

Why choose The University of Nottingham?

There are a lot of factors to consider when applying to university and some will be more important to you than others. We're proud that thousands of students apply to us every year – below are some of the reasons they give for choosing us.

An inspiring environment...

A commitment to academic excellence drives everything we do and has earned us international recognition. It is evident in our teaching and our research and our recent results speak for themselves: in independent teaching assessments, 39 of our subjects were awarded 'excellent' ratings of between 22 and 24 out of 24. Our scores in the latest Research Assessment Exercise rank Nottingham seventh in the UK in terms of 'research power' and in 2010, we were runner-up for the Sunday Times University of the Year award.

...with great career prospects

Our high standards mean that a University of Nottingham degree is respected by both UK and overseas employers and the employment record of our graduates is one of the best in the country. If you want to improve your career prospects further, you can speak to experts in our Centre for Career Development, gain recognition for your extracurricular achievements through the Nottingham Advantage Award or set up your own business with the help of our EnterpriseLab.

...not-to-be-missed opportunities

Extracurricular activities and the opportunities at Nottingham are numerous and varied. All our campuses have a strong community spirit and our Students' Union (SU) offers over 250 societies and sports clubs. It's through them that you can pursue an existing interest or take up something new with like-minded people, develop valuable skills and generally make your time at university as rewarding and memorable as possible.

...access to a dynamic city

The city of Nottingham is another rich source of entertainment. Its attractions include bars, boutiques, the Capital FM Arena, shopping centres, an arboretum, pubs, theatres, an ice skating rink, cafes, markets, mainstream and independent cinemas, two football grounds, nightclubs and a climbing centre. Finding 'your Nottingham' is an exciting part of student life.

...and options for exploring the world

If you're hoping to broaden your horizons further while at university, we have the connections to help you experience new cultures first-hand. As well as exchange opportunities at our campuses in Malaysia and China we have developed links to more than 320 partner universities in over 40 countries.

We hope this information has given you an insight into life at Nottingham and why so many students choose to study here. If you have not already done so please book onto one of our open days, which take place in June and September. Attracting 35,000 visitors annually, these events are an opportunity to explore our campuses, chat to staff and current students and most importantly, get a feel for whether you will be happy here.

To book your place, please see www.nottingham.ac.uk/opendays
We look forward to showing you around.

Students relax on University Park Campus, a beautiful green campus with period buildings and a large boating lake.



Electrical and electronic engineering at Nottingham

Quality, accreditation and recognition

The department is rated 'excellent' by the Higher Education Funding Council and by the Quality Assurance Agency for Higher Education. Student feedback also forms an important part of our quality assurance programme and so we regularly ask students in a variety of ways for their views on all aspects of their courses. As well as being rated 'excellent' all our degree courses are accredited by the Institution of Engineering and Technology (IET), providing a recognised route to becoming a Chartered Engineer. The department offers all its undergraduate students free membership of the IET, enabling them to benefit from the additional resources of this internationally recognised

professional body - including technology updates, local events and careers support.

Industrial links

The department is recognised in industry and amongst other universities as one of the very best. We maintain strong links with over 30 top companies; some companies support student projects and laboratories, others sponsor students and many of the companies come to the department to recruit our graduates. Additionally, many of the companies also offer our students the opportunity to spend a year-out in industry or a summer placement. Just as importantly, the department is structured to suit you as an

individual; we offer specialist degrees to match your interests and talents.

Research reputation

Academic staff in the department have international reputations for the excellence of their research and the department was recognised for its world leading research in the 2008 Research Assessment Exercise (RAE). This research background helps us to ensure that we offer up-to-date degree courses that provide an insight into cutting-edge electrical and electronic engineering.

Student exchange schemes

Nottingham is part of Universitas 21. This scheme allows undergraduates to study in one of several leading international universities, in a wide range of countries such as Australia, Canada, Singapore, New Zealand, USA, China and Sweden. Alternatively, you might choose to spend a year at our own University of Nottingham campus in Malaysia.

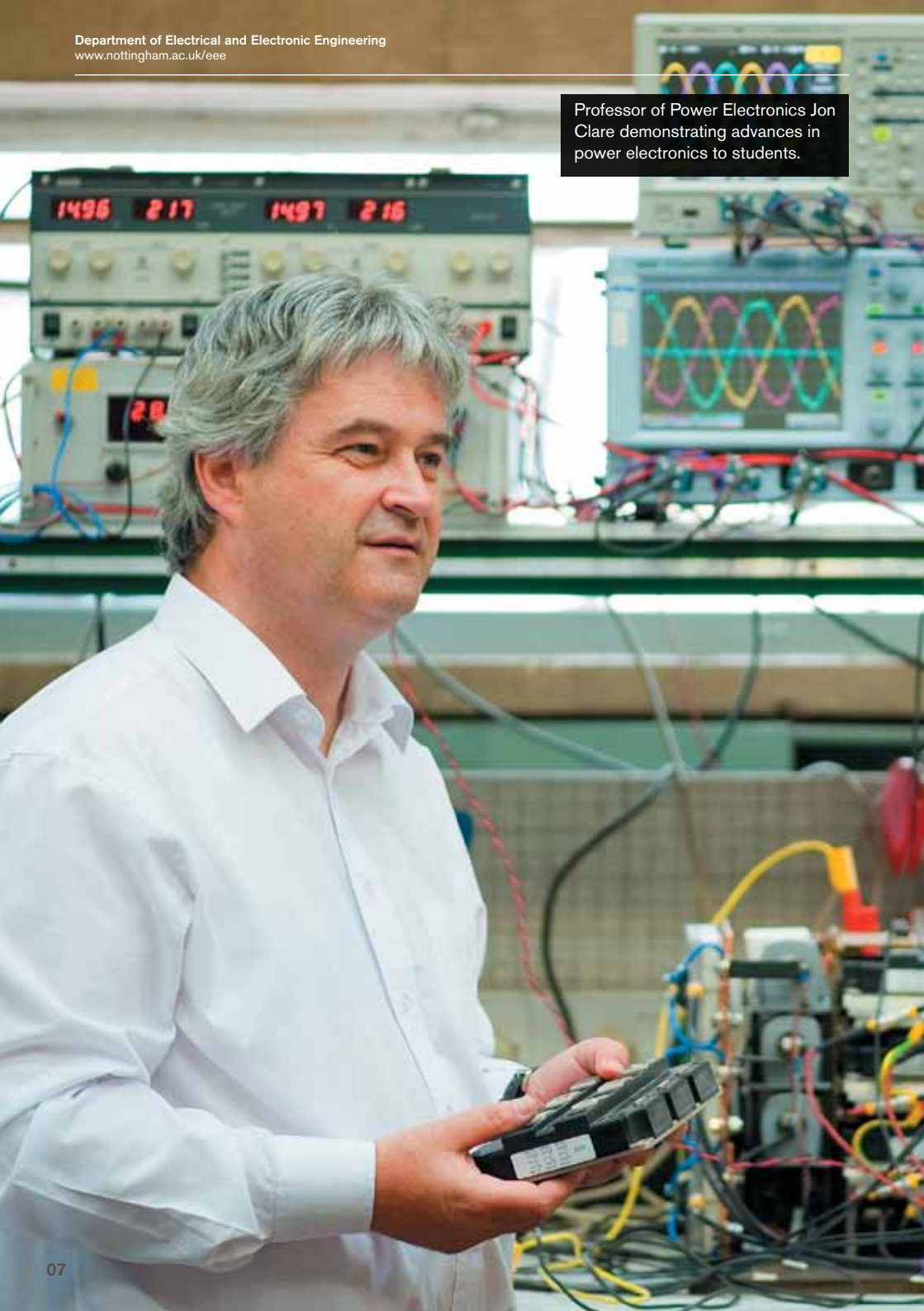
Facilities

The equipment and facilities you get to use at the department are right up there with the best in the world. The department gives you individual access to our powerful computing networks. You can use them to access learning software, CAD and some impressive simulation packages, plus each student is on email and online to the internet. We also make module material available online to aid self directed study.

You can really get hands-on in our specialised labs. For instance, there's a microprocessor project lab which introduces you to the special computing techniques required for telecommunications and control. There are also specialist final year project labs, all equipped with PC workstations and specialist test equipment. Opportunities also exist to work within the our research laboratories.

Electrical and electronics student Ewan Farr working in the Aerospace Research Centre.

Professor of Power Electronics Jon Clare demonstrating advances in power electronics to students.



Teaching and learning

The main forms of teaching you'll encounter are lectures, practical laboratory sessions and project work. These are supplemented by problem solving workshops and tutorials.

For a typical week in your first year you can expect to attend about twelve to fourteen hours of lectures, five hours of problem-based workshops, six hours of practical hands-on laboratory and project sessions and one hour in a small group tutorial. For the rest of the time you are working independently, doing the necessary reading in preparation for writing reports, and project work.

All students are allocated a personal tutor. Tutorials take place on a weekly basis, typically in groups of four students in the first year. Tutors regularly review your academic progress and are also available to help with any personal matters. Tutorials help to develop your communication skills, time management and your ability to work in groups.

The department also has an active Learning Community Forum where student representatives from each year group take part in regular meetings with academic staff where they are able to give their views on courses, modules, laboratory sessions and general University life.

We use a variety of assessment methods. As well as traditional exams we make extensive use of course work and project work. Much of the course work is centred on laboratory exercises and group projects. We also use multiple-choice tests during the first year to help monitor and review your progress on a regular basis.

In the final year of your degree course you will undertake a major individual project supervised by a member of our academic staff. The topic for this will reflect both your interests and the degree you are studying. You will have regular meetings with your supervisor to ensure a successful outcome to

your work. This project is a key part of your development as an independent engineer.

In addition to the engineering skills you will acquire, you will be taught a number of generic communication skills such as report writing, verbal presentations, poster presentations, web page design etc. You will also learn how companies are structured, how they operate financially, and their legal and other responsibilities that companies and the engineers working in them have.

Most MEng students attend a unique course called 'Industrial Awareness' which is run as a series of one-day workshops on various aspects of company practice, for example intellectual property (patents and copyright) and financial management. These workshops are very popular with students as they are run by practising managers/engineers invited from industry.

The BEng degree is a three-year course providing the fundamental concepts of electrical and electronic engineering. The MEng degree, also an undergraduate degree, requires a further year of advanced studies in the subject area as well as company practice, and provides an accelerated route to the professional qualification of Chartered Engineer (CEng). Students elect to follow either the BEng or the MEng route at the end of the second year of their course.

Electrical and electronic engineering student, Benjamin Cheong working inside a Faraday Chamber.

Careers

Our degrees open up a whole world of opportunity and prospects. Many students pursue fantastic careers in engineering, while others enter the management and commerce sector, or software and IT. Others also continue their studies with further education.

There are many opportunities to pursue a year in industry with an added incentive: The Industrial Placement Award. Students may postpone a year of their course and spend the year working in industry which allows them to apply knowledge gained in academic studies to problem solving in a 'real life' industrial situation - and they graduate with engineering work experience. Upon successful completion and meeting the University requirements, degree certificates are endorsed with "Industrial Placement Award" in recognition of this achievement.

It is our priority to prepare you for future success. Each year we organise an exclusive annual careers event specifically for electrical and electronic

engineering students. The following companies are typical of those attending to recruit our students: Atkins, British Nuclear Group, Control Techniques Ltd, DESG, John G Peck Ltd, Lintott Control Systems, Matchtech Group plc, Metronet Rail, Royal Navy, Royal Marines, Siemens, Spirent Enterprises Ltd, Royal Air Force, BAE Systems, National Grid UK, Texas Instruments.

In addition to the department's annual careers event, The University of Nottingham has a Centre for Career Development. The centre also arranges career fairs and with numerous advisors on hand. They have the skills and tools to help you to plan your future career.

Because engineering and other industries rate our students so highly, over 89 per cent* of our graduates find career employment or pursue further training on Masters or PhD programmes within six months of graduating.

*HESA data 2008/09.

"I thoroughly enjoyed my year in industry; the experience was invaluable"

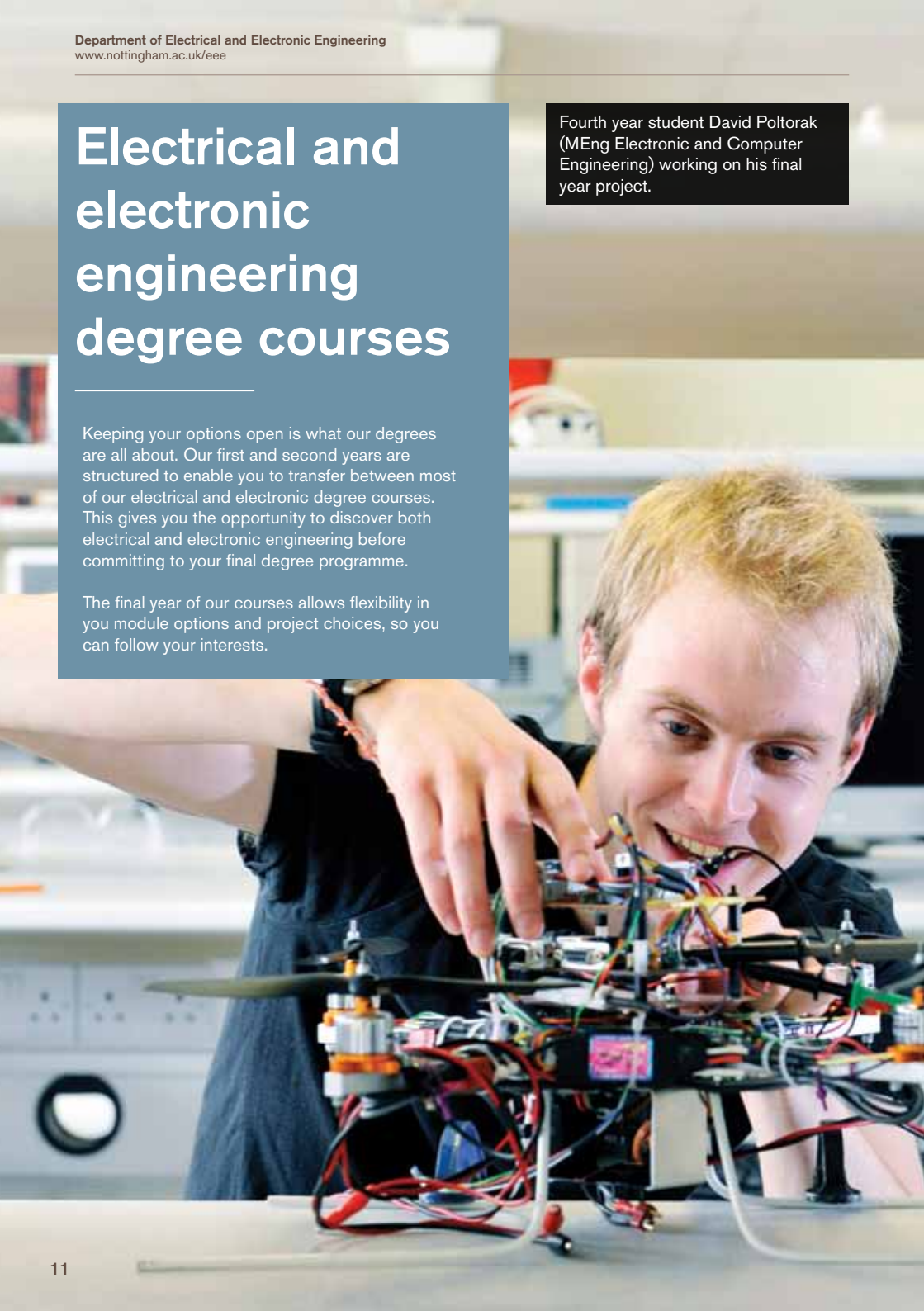
Alumnus Charles Dapaah Siakwan

Electrical and electronic engineering degree courses

Keeping your options open is what our degrees are all about. Our first and second years are structured to enable you to transfer between most of our electrical and electronic degree courses. This gives you the opportunity to discover both electrical and electronic engineering before committing to your final degree programme.

The final year of our courses allows flexibility in you module options and project choices, so you can follow your interests.

Fourth year student David Poltorak (MEng Electronic and Computer Engineering) working on his final year project.



Electrical and electronic engineering courses

Degree Courses	Award	Years	UCAS Code	Page
Electrical and Electronic Engineering	MEng/BEng	4/3	H600/H603	13
Electrical Engineering	MEng/BEng	4/3	H601/H622	14
Electrical Engineering and Renewable Energy Systems	MEng/BEng	4/3	HH62 /HH6F	15

Electronic engineering courses

Degree Courses	Award	Years	UCAS Code	Page
Electronic Engineering	MEng/BEng	4/3	H610/H612	17
Electronic and Communications Engineering	MEng/BEng	4/3	H640/H690	18
Electronic and Computer Engineering	MEng/BEng	4/3	H611/H613	20

Electrical and electronic engineering courses with specialisms

Degree Courses	Award	Years	UCAS Code	Page
with Mathematics	MEng/BEng	4/3	H6G1/H6GC	21
with Management Studies	MEng/BEng	4/3	H6NG/H6NB	22
with a Year Abroad	MEng/BEng	4/3	H605/H606	23

Electrical and Electronic Engineering

UCAS code: H603 (BEng); H600 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

Electrical and electronic engineering offers students the opportunity to select from a variety of topics. These topics include electronic design, communications, software engineering, computer modelling, microelectronics, power generation and distribution, electrical machines, signal processing, renewable energy systems, instrumentation etc. Multidisciplinary is definitely the word!

This degree course offers students the chance to study a broad range of topics whilst still allowing specialisation in the later years of the course. In the final year each student completes a substantial individual project in an area of their choice.

Potential career paths

With the broad range of skills you will acquire in taking this degree, the future career prospects are

excellent in areas as diverse as software development, fibre optic and mobile communications, aerospace technology, automotive systems or renewable energy technologies. For example the ever increasing range of technologies emerging into the automotive market makes this one of the most exciting and dynamic manufacturing sectors in the world. Currently, around 90 per cent of innovation in new cars is electronics based, with industry analysts forecasting that electronic content will account for 40 per cent of the cost of a mid-sized car.

Automotive electronics is an area that is set to expand and encompass the main propulsion system in hybrid and the proposed hydrogen powered cars. The automotive industry is also predicting the introduction of new products in the areas of advanced lighting and night vision, as well as technologies to help vehicle manufacturers comply with increasingly stringent fuel economy, environmental, and safety standards.

Alternatively the healthcare and biosciences sectors have seen the deployment of new sensors and imaging technologies that employ the latest electronic circuitry utilising systems on silicon with on and off chip RF telecommunication links. Such technology pervades and benefits the whole of society and offers exciting career opportunities.

Electrical Engineering

UCAS code: H622 (BEng); H601 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three years (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

Electrical engineering concerns the generation, supply, distribution, application and control of electrical energy. It is also the powerhouse of the manufacturing industry – think of all the electrically powered equipment on a modern production line – without it, industry and the nation would grind to a halt!

With the drive to a sustainable future with lower carbon emissions, the intelligent use of electricity is the key to the more efficient use of energy. Wind, wave and other renewable sources, hybrid and all electric cars, more electric ships and aircraft are all developing industries that are crying out for well qualified electrical engineers.

Potential careers paths

This degree is designed for students wishing to develop knowledge and skills for a career in these fields. Students study electrical subjects covering

power generation and distribution, electrical machines, power electronics, power quality, electromagnetic compatibility (EMC) and industrial drive processes, as well as relevant subjects covering control, programming and signal processing. Research activities in these areas are internationally recognised and have attracted considerable industrial collaboration – you will be taught by people who are at the cutting edge of these technologies.

Students following this degree can move into challenging and exciting careers in power distribution, future transport technologies (aerospace, rail, automotive) and industrial process control and automation.

Electrical Engineering and Renewable Energy Systems

UCAS code: HH6F (BEng); HH62 (MEng)

Qualification: BEng/MEng Hons

Duration: single honours, three (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

The recent increase in the use of wind, solar and other renewable energy sources has highlighted the challenges facing future electrical engineers – interfacing renewable sources to the electricity distribution system, maintaining stability in the presence of many small energy sources and guaranteeing an electrical supply in the presence of intermittent sources such as solar power.

Concentrating on electrical technology, this degree course provides the knowledge and skills required for future power engineers. Students will study electrical subjects covering power generation and distribution, electrical machines, power electronics and power conversion, and power quality as well as renewable sources, alternative fuel systems and future energy infrastructures. A major final year project focuses

on developing new technologies for renewable energy systems.

Potential career paths

The electrical engineering, electrical and electronic engineering and the electrical engineering and renewable energy systems degree courses include a number of modules which introduce the technology related to renewable energy supplies.

High energy consumption and dwindling fossil energy supplies, as well as the far-reaching impacts of global warming, mean that there is a need for renewable energy supplies (e.g. wind or solar energy) to be more widely harnessed in order to achieve a reduction in greenhouse gas emissions.

Electrical engineering technology is central to the design of wind and tidal generators or solar panels. However, it is equally important that this energy is captured and transferred into the main power distribution grid as efficiently as possible. This transfer of energy is achieved with a technology known as power electronics which uses semiconductors rated at thousands of volts and amps and requires accurate microprocessor control. Therefore, there is a demand for skilled individuals who understand, not only the principles behind the capture of energy supplies, but also the technologies used in converting this energy and the systems and networks associated with power grid control.

MEng student Richard Davies adjusts the controls of the department's wind turbine, situated at the University's Sutton Bonnington Campus.



Electronic Engineering

UCAS code: H612 (BEng); H610 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

The field of electronic engineering continues to dominate the world of automation technology, IT and global communications. There is a huge range of job opportunities available in research, circuit and systems development, applications, commissioning and support, project management, consultancy, marketing, sales plus many more, in a wide range of application areas such as entertainment (audiovisual systems), communications systems and instrumentation (medical, industrial).

This degree allows the widest possible choice of modules in the fields of electronic design, instrumentation, communications, optical engineering, new electronic devices, microelectronics, VLSI and engineering software. Final year project work may be within any of these fields.

The department has very strong research teams working in medical electronics, advanced instrumentation techniques and VLSI design applications. The department is also internationally recognised for its work in healthcare and new ultra-high speed electronic and optical devices. This means you are taught by world leaders in their field.

Some other technological areas our graduates on this degree move into include audio visual technologies and satellite communications.

Potential career paths

The electronic engineering degree course includes a number of modules which introduce the technology related to audio visual technologies.

An audio visual system can be defined as the integration of two or more forms of media, such as sound and graphics, to form a coherent whole. In practical terms, this applies to a host of technologies such as HDTV, gaming and computer graphics and 3D cinema systems.

CD, DVD and Blue Ray/HDTV players (optical drives) are audio visual systems which perfectly demonstrate the use of technology from a wide range of electronic and engineering disciplines. The polycarbonate plastic disks they use contain encoded information as 'bumps', which can be as small as 150 nm. The system has to be able to read these 'bumps' in the presence of vibration (for example, in a moving car) and this requires the use of lasers, precision motor drives and position tracking systems for the laser. The optical drive also requires the digital technology to process and decode the information and convert it into a sound and/or picture.

Electronic and Communications Engineering

UCAS code: H690 (BEng); H640 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three years (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

This degree course is designed for those students who are particularly interested in communications and their underlying technologies. Students on this degree study a range of electronic engineering topics including electronic design, software engineering, computer modelling, microelectronics, signal processing and instrumentation, but have specialist modules in telecommunications devices, the principles of telecommunications, digital systems and telecommunications systems. Mobile communications, CD/DVD technology, optical and microwave communications and digital television are studied in detail.

In the final year each student completes an individual project that involves detailed investigation and research into a communications topic. The department has a strong research

activity in optical and microwave communications and many opportunities for industrial project collaboration exist.

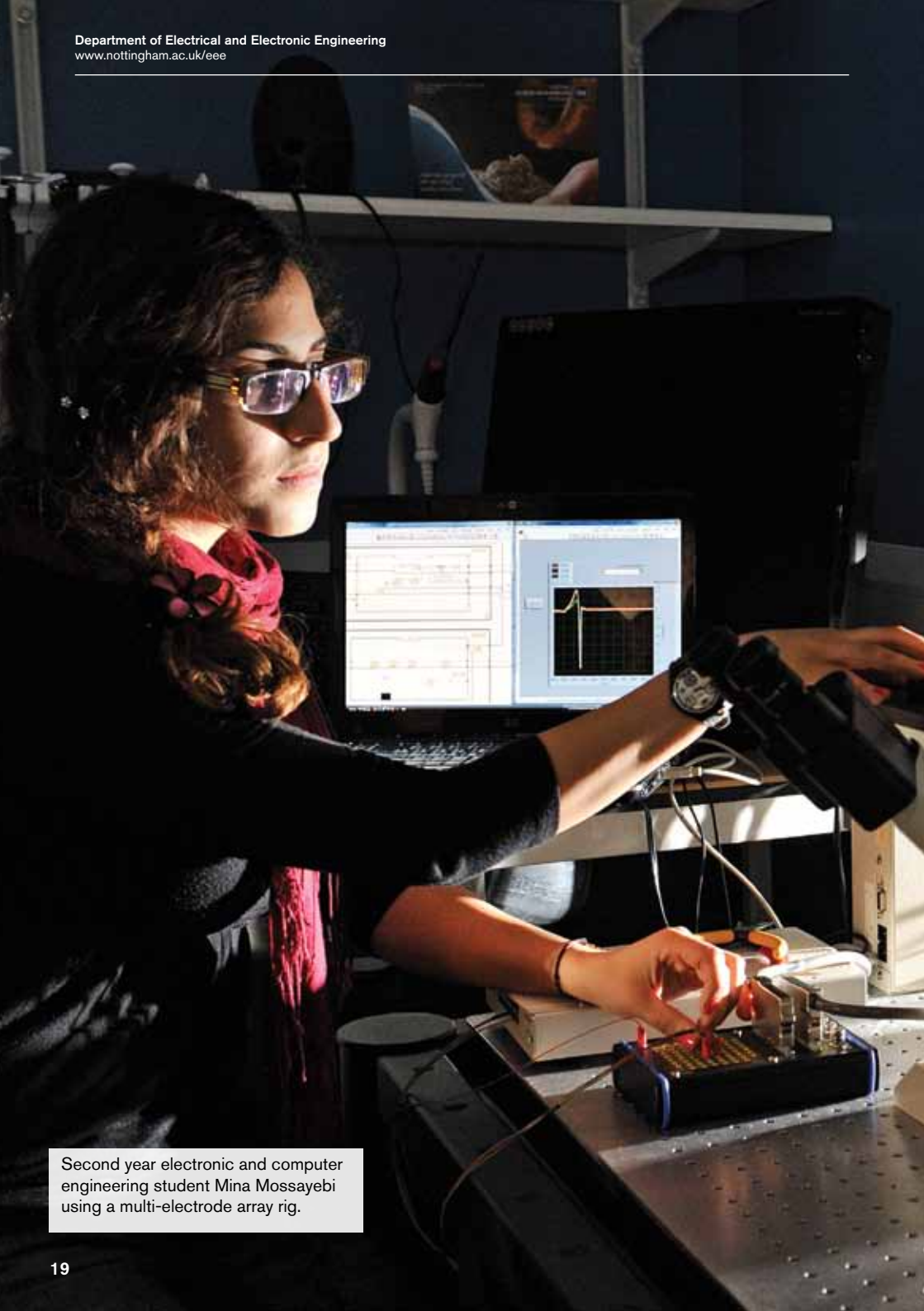
Communications continues to be a strong growth area for employment especially in fibre optic, mobile, and broadcast telecommunications. Your future career prospects are excellent!

Potential career paths

The electronic engineering and the electronic and communications engineering degree courses include modules that introduce the technology underpinning telecommunication systems and networks.

The use of optical fibres to facilitate high data rate transmission is fundamental to the success of the Internet and is critical to the future development of our information based society with its seemingly insatiable demand for bandwidth.

Early systems were based on simple point-to-point fibre links between a transmitter (typically a semiconductor laser) and receiver, with all other functionality provided electronically. Optical systems are becoming complex (and sometimes vast) networks where, to provide greater speed and flexibility, the data often remains optical whilst it is switched, regenerated and otherwise processed. Thus, there is a demand for a diverse set of skills and understanding, ranging from the physics of semiconductor devices, fibres and passive optical components, through to the design of communication networks, whilst not forgetting the continuing requirement for high speed electronic circuitry.



Second year electronic and computer engineering student Mina Mossayebi using a multi-electrode array rig.

Electronic and Computer Engineering

UCAS code: H613 (BEng); H611 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three years (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

Computer technology can be found in more than just desktop and laptop PCs. Specialist microprocessors are used for communications (there's one in your mobile phone), measurement devices (eg medical instrumentation), and entertainment (HD and 3D TV) to name just a few.

This degree is designed for students having an interest in computers, computing systems and software. Directed specialisms for modules and projects include microelectronics and VLSI design, object oriented software, computer networks and other modules offered by the School of Computer Science.

Final year projects provide students with the chance to work with members of the research groups working on the latest advances in VLSI applications for computer systems, parallel and embedded architectures, digital signal and vector

processing.

Graduates with a degree in electronics and computer engineering can find careers in many branches of home and industrial electronics and computing – the choice is almost limitless.

Potential career paths

The electronic engineering and electronic and computer engineering degree courses include a number of modules which introduce the technology related to microprocessor applications.

The role of microprocessors and digital signal processors (DSPs) in the real world is to take measurements, process information or to output signals. Often concentrating on audio and digital signals or speech processing, they require special electronic circuitry and real-time systems programming.

The applications of microprocessors and DSPs are almost unlimited and are integral to modern systems engineering. For instance, DSPs are found at the core of an everyday device that uses audio signal processing, digital image processing, speech recognition and digital communications – namely your mobile phone.

Other examples are equalisation of sound in surround sound equipment, weather forecasting, economic forecasting, seismic data processing, analysis and control of industrial processes, computer-generated animations in movies, medical imaging such as CAT scans and MRI, image manipulation, and audio effects for use with electric guitar amplifiers; DSPs are also essential to virtual reality systems.

Electrical and Electronic Engineering with Mathematics

UCAS code: H6GC (BEng); H6G1 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

Advanced mathematical concepts are used in all areas of electronic and electrical engineering. Students on this degree develop an appreciation of the mathematical principles that underpin electronics, and the physical principles that inform applied mathematics.

This degree comprises a broad range of electrical and electronic modules taken from the single honours degree programme. These topics include electronic design, communications, software engineering, computer modelling, microelectronics, power generation and distribution, electrical machines, signal processing, renewable energy systems, instrumentation, and many more. It also includes the opportunity to study the type of advanced techniques prized by many engineering industries. Topics include vector calculus, differential equations and Fourier

analysis, computerised mathematical methods in engineering, electromagnetism and nonlinear waves.

The degree course appeals to those having flair for mathematics and an interest in applying mathematical skills in a variety of engineering applications. There is always a high demand from employers for engineers with an advanced mathematical ability.

Electrical and Electronic Engineering with Management Studies

UCAS code: H6NB (BEng); H6NG (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three years (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

Many of our students like a fast-track route into management and related disciplines such as marketing, sales and finance and this degree was created specifically for them.

All the degrees offered by the department provide an understanding of how a company is structured, how it runs financially and its legal responsibilities. However, if you wish to learn about these aspects, as well as management methods, the stock market, marketing, accountancy and sales techniques, then the degree 'with Management Studies' is for you.

This degree comprises a broad range of electrical and electronic modules taken from the single honours degree programme. These topics include electronic design, communications, software engineering, computer modelling,

microelectronics, power generation and distribution, electrical machines, signal processing, renewable energy systems, instrumentation and many more. The choice is supplemented by additional management related topics available from our internationally renowned Business School.

A quarter of the final year work will be management related and your project will have a substantial component relating to a management, financial or marketing activity.

Potential career paths

With the broad range of skills you will acquire from this degree, you will have excellent career prospects in areas as diverse as software development, fibre optic and mobile communications, aerospace technology, automotive systems and renewable energy technologies.

Many of our students like a fast-track route into management and related disciplines such as marketing, sales and finance and this degree was created specifically for them.

Graduates with an MEng degree have studied technical subjects to a more advanced level than BEng.

Electrical and Electronic Engineering with a Year Abroad

UCAS code: H6GC (BEng); H6G1 (MEng)

Qualification: BEng/MEng Hons

Duration: Single honours, three (BEng) or four (MEng) years full-time

Typical A level offer: AAB-BBB

Typical IB score: 30-34

Required subjects: Maths and a science/electronics subject

Other qualifications: Advanced Diploma in Engineering and other qualifications considered, including European Baccalaureate, Scottish Advanced Highers, BTEC ND; BTEC HNC

The year abroad degree offers students the exciting opportunity to study engineering and also to experience a new country and culture.

The degree covers the same broad range of topics available to students studying electrical and electronic engineering with the added advantage of spending one year (normally your 2nd or 3rd year) studying in one of several leading international universities in America, Australia, Canada or Malaysia.

If you decide to spend a year at our campus in Malaysia, the second year of the degree is taken at The University of Nottingham, Malaysia at the new, purpose built campus just outside Kuala Lumpur where you will study the same modules as the Nottingham students.

Several members of staff originally from Nottingham are now based in Malaysia making the department a truly welcoming and familiar environment to work in.

“The time I have spent in Malaysia has been life changing. There is very little difference between the Malaysia and UK campuses in an academic sense but the student experience is worlds apart. Just living out here, being surrounded by different cultures is a completely different way of life.”

Colette Sumpton, Electrical and Electronic Engineering MEng student. Colette spent her second year at the Malaysia Campus.

Students relax and study outside on the University's Malaysia campus.



“The course has a lot of hands-on experience and lab time for each module where you get to apply the theory that you’ve been learning and see how it really works. The lab facilities are always being upgraded and getting new equipment so it’s a good place to be.”

Harry Mustoe / MEng Electrical and Electronic Engineering (fourth year)



Find out more about Harry's experience at
www.nottingham.ac.uk/ugvideos/engineering



Scan the code to watch this video on your smart phone.

Harry is designing and building a motor drive system for an all-electrical go-kart.



Employer case study

Sean Loddick, Rolls-Royce Plc.

When Sean Loddick recruits a university graduate he's looking for someone who can not only think for themselves but can also see the bigger picture. Sean Loddick, manager of Power Electrical Centres of Excellence for Marine Electrical Systems at Rolls-Royce Plc.* believes that the Department of Electrical and Electronic Engineering at The University of Nottingham is one of the best.

"I would encourage students interested in electrical engineering to put Nottingham top of their list. I have employed Nottingham graduates. They have a high quality degree with a large practical content run by enthusiastic staff eminent in their field.

"Engineering suffers because of the way in which it's perceived. It tends to be heaped together with the dirtier industries which don't carry the same

kudos and yet one of the key drivers for employing someone in power electronics is to improve efficiency, thereby reducing fuel costs and emissions.

"I've had links with staff at The University of Nottingham for a number of years and found their graduates to have a good mixture of theory and practical knowledge.

"An engineering degree gives you an all-round knowledge of science. A good university teaches you how to learn.

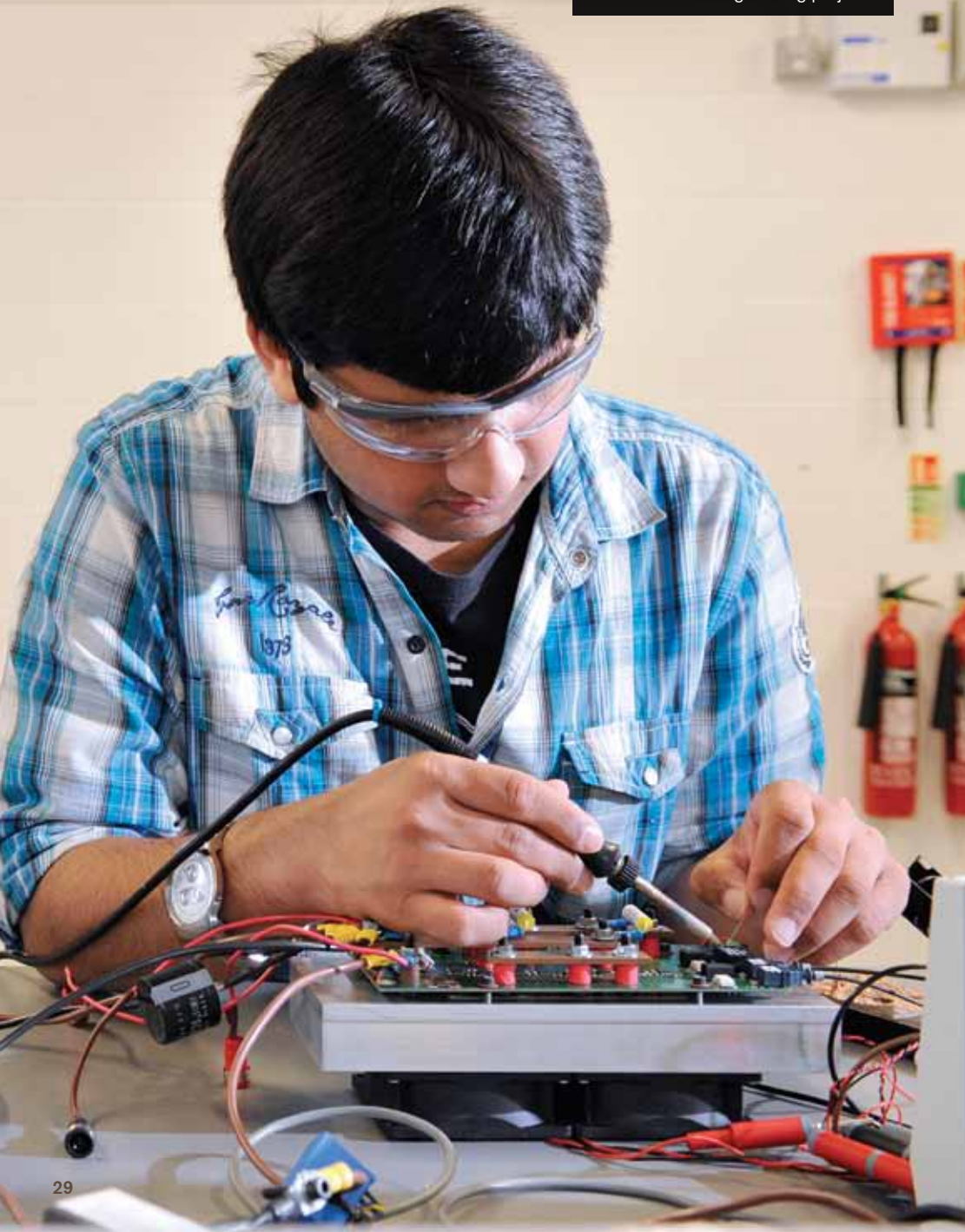
"We're looking for young people with an enthusiasm and an ability to learn. It's because of the good foundation they've learned at somewhere like The University of Nottingham that we have something to build on."

*Rolls-Royce Plc. employ around 35,000 people, of which 7, 500 are scientists and engineers.

"I've had links with staff at The University of Nottingham for a number of years and found their graduates to have a good mixture of theory and practical knowledge."



Third year student Asad Fayyaz works on his electronic engineering project.



Applying for a place

All applications for undergraduate courses at Nottingham must come through the Universities and Colleges Admissions Service (UCAS), whose website is www.ucas.ac.uk. The UCAS deadline for applications is usually 15 January.

Make sure you write the code relating to the course you want to study on the UCAS application form – all the codes for our courses feature on page 12 of this brochure. The UCAS code for The University of Nottingham is N84.

We look at every application individually. When we receive your application from UCAS, our subsequent decision will be based on academic potential and personal qualities, along with your previous academic record and referee's statement.

International students

In most cases, international students can apply for courses right up until the summer. International students should also apply through UCAS. Your school, an agent or your local British Council can help you with the UCAS application process. The UCAS website has a useful step-by-step video guide for international undergraduate students: www.ucas.com/students/wheretostart/nonukstudents

Mature students

We want to widen participation in our courses as far as possible; therefore, our admissions are more flexible if you're a mature student. Please contact the Admissions Tutor before applying through UCAS.

English as a second language

International students whose first language is not English must have an appropriate level in an approved test, for example:

- IELTS 6.0 (no less than 5.5 in any element)
- TOEFL iBT 87 (with no less than 21 in listening, 22 in reading, 23 in speaking and 21 in writing)
- Pearson Test of English Academic (PTE Academic) 55 (min 51)

If you have not reached the IELTS or TOEFL score you could apply to attend a full-time English language course at the University's Centre for English Language Education (CELE) before registering for your degree. For more information see www.nottingham.ac.uk/cele

For information on English language requirements visit www.nottingham.ac.uk/ugstudy/applying/entryrequirements.aspx

Fees and funding

UK and EU students

In April 2011, The University of Nottingham announced plans to set undergraduate fees at £9,000 from 2012, subject to agreement by the Office for Fair Access (OFFA). The fees will apply to full-time UK and EU students on all undergraduate degree courses.

A substantial and increased package of financial aid will be available to students to ensure that the University continues to attract the best and the brightest students, whatever their background. Well over a third of our students will be eligible for our core bursaries, which offer up to £3,000 for each year of undergraduate study.

This broad and progressive package of financial aid will include direct support for students' living costs and additional provision will be targeted towards foundation-year students, local students, students with disabilities, those with responsibilities as carers and students formerly in care.

Information about fees, including a frequently asked questions section, can be found on www.nottingham.ac.uk/fees

International students

The increases in University tuition fees mentioned above does not apply to international students. International tuition fees for students commencing their studies from 2012 onwards will continue to be subject only to a small inflationary increase each year. The University operates a fixed tuition-fee policy where students pay the same fee level for the duration of their studies. Details of tuition fees and scholarships for international students will be published on www.nottingham.ac.uk/fees

Faculty of Engineering undergraduate scholarships

The Faculty of Engineering is keen to attract students who are determined to do the best for themselves and we are committed to supporting them on their path to success. We have developed a generous package of scholarship, details of which can be found on www.nottingham.ac.uk/engineering/funding

E3 Academy scholarships

The highly successful E3 Electrical Energy Engineering Academy is an Institution of Engineering and Technology (IET) endorsed sponsorship programme for students applying to study for degrees at the Department of Electrical and Electronic Engineering.

The sponsoring companies for students starting in 2011/12 are Convertteam, Siemens, Cummins, Control Techniques and Parker SSD.

Academy scholars will benefit from:

- A bursary of £2,500 (2010-11 rate) for each year of study
- Eight weeks summer vacation training paid at a rate of £1250 per month (min).
- Academy events, such as the Summer School, where they will meet and become acquainted with the electrical energy engineering community.

More information on the E3 academy scholarship can be found on www.e3academy.org/scholarships

Frequently asked questions

Can I live in halls of residence or other University accommodation?

All full-time first-year students are guaranteed a place in University accommodation provided they make Nottingham their firm choice and return their accommodation application before the 1 August deadline. For more details please see www.nottingham.ac.uk/accomodation

A wide variety of privately managed accommodation is available within walking distance of the Department and University facilities.

Can I take a year in industry?

You will be encouraged to undertake industrial placements, usually at the end of year two. Between September and December the larger industry-based organisations come to the Department to recruit students for industrial placements and department staff use their extensive industrial links to provide placement opportunities for students. The 'Year in Industry' scheme is a not-for-profit organisation that provides placements for students. They have an office within the Faculty of Engineering and a website: www.yini.org.uk

Can I study abroad as part of my degree?

You will be able to study at the University's Malaysia Campus or partner universities in the USA, Australia or Canada. Our Malaysia Campus offers the same course programme as in the UK and all teaching is done in English.

How much practical work will I do?

Practical work is an integral part of the course and includes laboratory, field work and industrial visits. We use labs to develop analytical, problem-solving and team-working skills. The amount of practical work undertaken is high in the first year: typically 20 per cent of the course.

What staff support is available during the course?

The department runs an academic tutorial system. First-year students see their tutor on a weekly basis. In later years tutors advise on module/course choices and career options. Personal tutors are also assigned to act in a pastoral role if necessary.

Will I get exposure to industry?

Industry is at the heart of everything we do. Staff have industrial backgrounds or work with industry on a day-to-day basis through their research activities. Our labs mirror many industrial processes and we use guest lecturers to deliver material within several course modules. We run a programme of industrial visits and most of our modules involve industrial case studies.

What are the job prospects at the end of the course?

The majority of our students who want jobs get them within six months of the end of their course. Many get head-hunted well before the end of their final year. Our engineering degrees offer excellent and varied careers. Their analytical, team-working and problem-solving nature means they are in demand from non-engineering sectors (for example, management and finance) as well as in technical scientific and engineering roles.

Can I switch between courses?

You will be able to switch between BEng and MEng degrees at the end of year two. You will need an overall average of 55 per cent at the end of year two in order to qualify for the MEng

I haven't studied the correct subjects-is there any way I can do engineering?

If you have not studied maths, or a science at A level you could consider applying for the Engineering Foundation Year Programme. For more details, please see www.nottingham.ac.uk/foundation_year

Undergraduate students
study on the grass outside
Cripps Halls of Residence

Visiting and contacting us

We are always keen to welcome prospective undergraduates and their families onto our beautiful campus, be it on one of our open days, a campus tour day, or any other day of the week.

UCAS visit days

After a preliminary selection, applicants will be invited to join one of our UCAS visit days. These provide an opportunity to tour the Department and the University campus. They also include a visit to a hall of residence, as well as interviews with members of academic staff. There are presentations on the University, departments and courses and a special programme for parents and guardians. You will also be able to talk to current students.

Open days

We recommend that you attend one of the University-wide open days, held every year in June and September. That way you can see for yourself the wonderful campus and meet staff and current students. Find out more
www.nottingham.ac.uk/opendays

Campus tour days

The University runs tours of University Park Campus on some Wednesdays throughout the year. For further information or to book a place on a campus tour day, please contact the Enquiry Centre:
t: +44 (0)115 951 5559 or
e: undergraduate-enquiries@nottingham.ac.uk

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t: +44 (0)115 951 4591
e: alternativeformats@nottingham.ac.uk

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For additional general information for international students, please contact:
The International Office
t: +44 (0)115 951 5247
f: +44 (0)115 951 5155
e: international-office@nottingham.ac.uk
w: www.nottingham.ac.uk/international

You can also follow us through our social media channels, all of which can be accessed via
www.nottingham.ac.uk/connect