Electronic and Electrical Engineering

League tables
93% of our students are in graduate employment, or further study, six months after graduating with us (Destination of Leavers from Higher Education 2015/16) *[These are the most up-to-date DLHE stats at time of printing; 2016/17 TBC shortly]*
96% of our Electronic, Electrical and Systems Engineering final year students rated their course as intellectually stimulating in the NSS 2017
Top 3 for career after 6 months (Guardian University League Table 2019)

Investment in facilities
We benefit from a £40 million investment in teaching laboratories that is transforming the way in which our staff can provide students with hands-on experience to real life engineering problems. Phase 1 opened in Sept 2016, providing a £5 million upgrade in the laboratories used by Civil, Electrical and Mechanical engineers. Phase 2 opens in September 2018 and is a £35 million new laboratory building, one floor of which is for electronic engineering labs and projects

Engineering students will particularly benefit from the STEM student identity that the CTL will foster and new, state-of-the-art equipment will support students' learning, reflecting the facilities used by industry. Students will have the opportunity to work with and learn from students from a wide range of other disciplines, and will build their confidence and expertise in the practical elements of their discipline.

Discipline specialist with interdisciplinary experience
Professional electronic and electrical engineers need a deep understanding of their own discipline combined with an ability to work in multi-disciplinary teams. Our degree programmes have been designed in consultation with our industrial partners to give an ideal balance between the two.

Our first year uses a contemporary and flexible educational model that builds upon essential engineering fundamentals to develop students' broader understanding of behaviour, policy, entrepreneurship, and global perspectives and kindles the passion necessary to address the societal challenge agenda. The year is shared across the disciplines of Civil Engineering, Mechanical Engineering and Electronic, Electrical and Systems Engineering. This gives students a firm multidisciplinary grounding, and also enables them to retain the flexibility to transfer in second year to Civil or Mechanical Engineering should they find that these subjects are more suited to their interests.

In second and third year students study a specialist programme in Electronic and Electrical Engineering, addressing key themes such as electronics, communication systems, digital systems, control systems, electrical power, embedded computer systems and computer programming. Students deepen their interdisciplinary experience through a 20-credit integrated design project in years 2 and 3 where students solve real world problems alongside engineers from other disciplines. For students on the rail pathway the second and third years offer rail-specific modules that allow students to specialise in the subject, alongside Electronic and Electrical modules.

Students graduate with a degree accredited by the Institution of Engineering and Technology (IET), the professional body that represents Electronic and Electrical Engineers and regulates the profession. Please note that Mechatronic & Robotic Engineering is not yet accredited as it

can only be accredited after graduation of the first cohort (but accreditation will be backdated once achieved)

Research led teaching
The University of Birmingham is a member of the prestigious Russell Group, an alliance of elite universities that are at the leading edge of research. Our students will be taught be leading researchers, and will have opportunities in their projects to work in research laboratories.

Modules
The programme structure can be found on 17 of the EESE brochure, with module listings available for the Rail pathway and Mechatronic & Robotic Engineering on later pages.

Choice and flexibility
- Opportunities for industrial placements and study abroad
- Opportunities to choose your specialities
- Opportunities at the end of year 1 to switch to Mechanical Engineering or Civil & Electrical Engineering (subject to grades)

Other opportunities
- UBRobotics is a student led robotics club – it aims to build different types of robots to compete nationally and internationally. They achieved 3rd place at the Eurobot competition after only existing for 2 months! You can try your hand at coding, mechanical design and electronics.
- UBRacing – is our own Formula Student Racing Team, which competes throughout the world and, in 2017 (its 20th year) achieved its best ever performance with first place in the endurance race and overall dynamics, and second place overall.
- UBeRacing is the University's new electric Formula Student team, and was formed in October 2017. The team will produce electric cars to race in the IMEchE Formula Student competition and builds on the work of UBRacing with an electronics focus. It will be a fantastic chance to be involved with an exciting society from the very early stages.

Accreditation and Employability:
- All of our BEng and MEng programmes are IET accredited except Mechatronic and Robotic Engineering which was new for 2018 entry (see note above)
- 93% of our students are in graduate employment, or further study, six months after graduating with us *(*Destination of Leavers from Higher Education 2015/16) *[These are the most up-to-date DLHE stats at time of printing; 2016/17 TBC shortly]*
- Top 3 for career after 6 months (Guardian University League Table 2019)
- The University of Birmingham was the 2016 Times University of the Year for Graduate Employability
- Career destinations of previous graduates include:
  Accenture, Airbus, Arup, Atkins, BAE Systems, BT, CERN, Controls and Data Services, GE Aviation, Goldman Sachs, IBM, Imagination Technologies, Intel, Jaguar Landrover, Mackwell Electronics, Microsoft,. National Grid, National Instruments, Network Rail, Proctor and Gamble, Renishaw, Rolls Royce, Shell, Thales, Transport for London, TRW

Typical offers
- A-level

BEng: AAB (must include mathematics)
MEng: AAA (must include mathematics)

- International Baccalaureate
  MEng: Higher Level 6,6,6 including Maths with 32 points overall
  BEng: Higher Level 6,6,5 including Maths with 32 points overall
  (For BEng, students only taking standard level Maths can be accepted with HL 6,6,5 + SL 7 Maths with 32 points overall)
- BTEC
  BTEC Extended Diploma (18 units) will be considered providing there is sufficient Mathematics content and applicant satisfactorily completes our Mathematics aptitude test. D*D*D* plus Distinction in all units required.
  BTEC with fewer units only accepted if combined with A-levels

In the current cycle students with excellent GCSE results and A-level predictions qualified for an unconditional offer. Whilst the 2018 requirements or scheme have not yet been confirmed, the previous requirements were:

- Predicted A-level results of A*AA (to include at least A in maths).
- GCSE Maths A*, GCSE science A*A*, 5 other GCSEs at grade A

Our foundation year

A level offers range from BBB to AAB depending on how much numerate science is included in the subjects taken. We do not consider applicants who have taken A Level Maths for 2018 entry to the Foundation Year programme.

Students study Maths, Lab Skills, Engineering Skills, Mechanics and Waves, Computing, Materials, and Fundamentals of Electrical and Magnetic Devices. Successful completion qualifies students to enter our first year.

Modules

The programme structure can be found on 13 of the EESE brochure, with module listings available at http://www.birmingham.ac.uk/schools/engineering/eese/index.aspx

Scholarships

The department is offering First Class scholarships of £3000 to reward excellent academic performance by UK/EU students. Any student who achieves A*AA (with the A* in Maths or Further Maths) in accepted A Levels, and chooses us as their Firm choice will be eligible for the award, to be paid directly to the student. We can also consider students who achieve AAAA in four accepted subjects. More information is online at https://www.birmingham.ac.uk/schools/engineering/eese/undergraduate/scholarships.aspx.

MEng students will be able to apply for the BP STEM scholarship worth £3000 per annum; 8 are available across the College of Engineering and Physical Sciences (please see the school website for more details of scholarships).

Overseas scholarship levels can be found at http://www.birmingham.ac.uk/schools/engineering/eese/undergraduate/international-scholarships.aspx

UK Electronic Skills Foundation – Recently the University of Birmingham has partnered with the UKESF which provides our EESE students with additional opportunities for scholarships and study support that membership provides. Connected with a leading employer, successful scholars are supported through annual bursaries worth £1000, paid summer placements and mentorship from their employer. The scheme is open to current

students, and further information can be found on the UKESF website at http://www.ukesf.org/universities/apply-for-scholarship/.

BEng/MEng Mechatronics and Robotics Engineering First intake in 2018. More information in the Engineering Lounge
http://www.birmingham.ac.uk/undergraduate/courses/eese/mechatronics-robotics-engineering-beng.aspx
In space or underwater, in the home or at work, on or in the human body, electromechanical systems that sense and interact with their environment are an integral part of life in the 21st century. Such systems can act autonomously or under the supervision of human operators, which creates new opportunities to engineer the intelligent technologies around us.

The Department of Electronic, Electrical and Systems Engineering at the University of Birmingham is offering brand new and exciting degree programmes in Mechatronics and Robotics Engineering, driven by our breadth of research expertise and industrial collaboration. The programmes combine mechanical, computer, and electronic and electrical engineering to address the challenges of designing and deploying intelligent technologies.

Students will gain skills in computer engineering, covering topics such as machine learning and data mining, which enable mechatronic systems to make decisions, to be autonomous and to be effective. Students will study human computer interaction and virtual and augmented reality, to understand how people can cooperate successfully with intelligent technologies. Students will learn how to supply, manage and control electrical power and how to transfer power between the electrical and mechanical domains. The first year of the degree programme is shared with all students in the School of Engineering, and provides a background in mechanics, materials, energy transfer, programming and engineering mathematics as well as electrical and electronic devices.

BEng/MEng Engineering
Some potential applicants may know that they wish to study an engineering subject, but are unsure now which specialisation they wish to pursue. BEng/MEng Engineering caters for such applicants. Students on this programme will study on the shared first year to gain a broad engineering education. At the end of first year, students choose a specialist degree programme (Civil Engineering, Electronic and Electrical Engineering, Mechatronics and Robotics Engineering or Mechanical Engineering) to transfer onto. They will graduate with a BEng or MEng degree in the appropriate discipline Civil Engineering, Electronic and Electrical Engineering, Mechatronics and Robotics Engineering or Mechanical Engineering.

(Of course, it is already possible to apply to one of our discipline specific degrees, e.g. Mechanical Engineering, and transfer into Civil Engineering in second year. However, some applicants who don't know which engineering they want are reluctant to apply to any degree with a specialised title and find the generic BEng/MEng Engineering title more reassuring.)

Further information is at
http://www.birmingham.ac.uk/undergraduate/courses/engineering/engineering-beng.aspx.

BEng/MEng Aerospace Engineering (delivered by School of Met & Mat)
http://www.birmingham.ac.uk/undergraduate/courses/metallurgy-materials/aerospace-engineering-beng.aspx
The programme has been launched for 2018 entry. There will be information available in room G42.

- The programme will have a broad coverage of both aeronautical and aerospace (most UK universities do one or the other) allowing specialism in Materials or Engineering

(structures and avionics) to lead to careers in aero engines, airframes, satellites, space missions and UAVs.
- Post Open Day queries can be directed to aerospace-admissions@contacts.bham.ac.uk.