Electrical and Electronic Engineering MEng

Looking to fast-track your path to Chartered Engineer status? Our four year MEng programme will enable you to do just that.

Location: Aston University, Birmingham

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<td>Full-time</td>
<td>Integrated</td>
<td>4 years</td>
<td>H601</td>
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“The teaching and student support enhanced my time at Aston as it helped me on the path to achieving an integrated master’s degree with a placement year experience within 4 years! My placement gave me an insight into what I would like to do after university and assisted me in beginning my path towards professional accreditations aiming towards Chartered Engineer status.”

Devang Shah, Electrical Engineer Graduate, Network Rail

Course outline and modules

Electronic engineering impacts on so many areas of every day life so it is perhaps no surprise to find that it is the most extensive and pervasive of all the engineering disciplines.

Our courses are developed in collaboration with a wide range of industry sectors to give a broad but relevant degree so teaching won’t just be standard lectures and you’ll be encouraged to
discover how science fiction becomes fact. Designing your own products and working with cutting-edge equipment will be a core part of the course. Our ground-breaking, fast-track, higher level Electrical and Electronic Engineering MEng course allows you to gain an MEng qualification in four years, rather than the traditional five years, making it a more time and cost-effective choice.

This course is designed to stretch our top students and includes a 12 month industrial placement, giving you the opportunity to study electronics more deeply than at BEng level while gaining valuable industry experience.

The design of this innovative course emphasises ‘doing’ as well as ‘knowing’, helping you to develop essential practical, intellectual, business and communication skills. This ‘real world’ approach, combined with the beneficial experience you will gain during your placement, will give you a clear competitive edge in the search for graduate employment.

**What you’ll learn**

The first two years of the MEng are taught alongside the BEng degree. You’ll begin by covering the fundamental principles of the field, such as digital and analogue electronics, computing, mathematics and project management, rapidly developing the analytical skills to understand and begin designing electrical circuits and systems.

In the second and final years you’ll specialise by selecting from a broad range of career-focused options, including systems analysis, data acquisition and control, digital system design, telecommunications systems, optoelectronics and signal processing. The final year is taught alongside our masters programmes and you can choose to study a broad range of modules, or specialise in one particular area, such as communications, sensing, computing or electrical power. You will also undertake an in-depth project, based on your areas of specialism.

You’ll have access to an extensive network of computer facilities throughout your course, including high performance PCs for industrial standard ECAD, Unix workstations and a large number of embedded processors for lab work. These resources are complemented by specialist electronics, telecommunications and networked laboratories and research facilities.

You’ll spend your third year in industry and we’ll support you to find a paid, professional placement of direct relevance to your studies. This placement will give you invaluable practical experience in a real work environment and further enhance your career prospects. As an integrated masters student, your placement year will be academically assessed and also include some distance learning modules. We have lots of exciting engineering activities you can get involved with at Aston, including Engineers without Borders project weeks, and the annual **Aston Hack hackathon**, a frenzied 24 hours of designing, coding and making.
Modules

The first two years of the MEng are taught alongside the BEng degree. Starting with the basic principles of analogue, digital and programmable electronic systems, you will rapidly develop the analytical skills to understand and begin designing electrical circuits and systems. You will also take courses in computing and mathematics. Project work encourages you to develop skills in team working, business and communications.

Year 1

- Electronic Engineering Fundamentals
- Engineering Mathematics
- Computational Problem Solving
- Engineering Projects
- Electrical Principles
- Physical Principles

Year 2

In Year 2 you will study digital and programmable systems, communication systems, electronic systems and electrical systems in more depth. A themed design project and business course will enable you to develop your professional design and management skills.

By taking additional modules after the end of the second year, you can incorporate the placement within a 4-year course.

- Analogue and Power Electronics
- Communications Systems
- Data Acquisition and Control
- Signals and Systems
- Engineering Team Project
- Professional Engineering Practice
- Electrical Power Systems
- Digital Design

Year 3

The final two years allow you to develop your skills in engineering and engineering management to a much greater depth and gain important experience working on an
engineering placement.

The placement in Year 3 is academically assessed and also includes some distance learning business modules.

Find out more about the Aston placement year.

Core modules
- Sustainability in Science and Technology
- Digital Optical Communication Systems
- Leadership in Engineering

Optional Modules
- International Placement Assessment
- MEng International Study Year
- MEng Industrial Placement Year
- Individual Research

Final Year

The final year is taught alongside our Masters programmes and you can chose options from the stream that most interests you.

In the final year you can take a broad range of Masters level courses or specialise in one particular area, such as communications, sensing, computing or electrical power.

You will also complete an extended individual project in an area that interests you.

Core Modules
- Digital Signal Processing
- MEng Final Year Project

Optional Modules
- Digital Systems Design
- Mobile Data Networks
- Digital Communication and Information Theory
- Internet of Things
- Broadband Wireless Networks
- Optical Communications
- Radio Systems and Personal Communications Networks
- Digital Systems Architecture
Accreditation

All our electrical and electronic engineering courses are accredited by the Institution of Engineering and Technology, and our MEng course meets the academic requirements to enable you to register as a Chartered Engineer.

International students

Aston University is a diverse, close community and welcomes international students on many of our undergraduate programmes. Students from over 120 countries choose to study with us every year and Aston is not only a great place to study, based in the centre of Birmingham, it’s also a great place to live.

Aston’s professional work placements can improve your chance of securing a graduate job. Placements give you experience, confidence and opportunities and as an Aston student, you’ll be better prepared for your future career. One of the great things about Aston is our focus on employability and our close links with businesses, industries and professions make this possible.

Choosing to start your Aston journey with one of our foundation programmes will help you develop specialist knowledge to ensure that you are fully prepared to study your chosen undergraduate course. During your foundation year, you’ll have excellent support from academics and group projects will give you the chance to meet new people, make new friends and build a network of peers who will share your university journey.

We also have a Learning Development Centre that can provide additional support and offer pre-sessional English language programmes. [https://www2.aston.ac.uk/international-students](https://www2.aston.ac.uk/international-students)

Entry requirements

Typical offers:

A Levels

- BBB to include Maths and a physical science or technology subject, both at minimum grade B

- BBC to include Maths and a physical science or technology subject, both at minimum grade B (with an EPQ or Core Maths at grade B)

- BCC to include Maths and a physical science or technology subject (contextual
offers and for DTUS applicants)

Physical science or technology subjects accepted include: Physics, Electronics, Further Maths, Design Technology and Engineering Science.

IB

31 overall points with 5, 5, 5 in Higher Level subjects, including Higher Level grade 5 in Maths and a physical science or technology subject.

BTEC, Access & other


- Foundation or 90 credits Diploma (Science/Technical/Engineering type): DM plus 2 A-levels at a minimum grade B. Diploma should include the following units at Distinction if A level is not in Mathematics: (QCF) Mathematics for Engineering Technicians, Further Mathematics for Engineering Technicians, Mechanical/Electrical Principles, Further Mechanical/Electrical Principles. OR (RCF): Engineering Principles, Calculus to Solve Engineering Problems, Further Engineering Mathematics, Specialist Engineering Project.

- Foundation or 90 credits Diploma (any subject): DM plus 2 A-levels at a minimum grade B in Mathematics and Physics or similar physical science A level subject.

Engineering Project.

- National Extended Certificate or Subsidiary Diploma (any subject): M plus 2 A-levels at a minimum grade B in Mathematics and Physics or similar physical science A level subject.

- Certificate/ National Certificate Level 3: Not accepted

Access to Higher Education

- Science or technical Access with at least 30 Distinctions and 15 Merits at Level 3 including at least 15 credits at Level 3 in Mathematics and 15 credits at Level 3 in a physical science or technology subject.

Non-standard qualifications

Degree:

- **Year 1 entry:** We may consider applicants for year 1 entry who are undertaking a 1st year degree elsewhere. You must meet the GCSEs and A level (or equivalent) requirements as listed. In order to be considered you will need to submit a UCAS application as we do not accept direct applications and this must include an academic reference.

- **Year 2 entry:** Please note that second year transfers are not part of the standard admissions process and is up to the discretion of the admissions team and tutor. Applications are only considered if there is space on that year of the programme. Typically, applicants for second year entry must meet the GCSEs and A level (or equivalent) requirements as listed. Alongside this you must have gained (or be expected to gain) 65% overall and 120 credits on an equivalent programme at another recognised university. The equivalency of the programme is reviewed by the Admissions Tutor and you will be required to provide an official copy of the programme specification of this. In order to be considered you will need to submit a UCAS application as we do not accept direct applications and this must include an academic reference.

- **Year 3:** We will not be able to consider any application for Year 3.

Further Requirements

GCSE requirement: Maths and English Grade C/4 and above

All candidates are considered on an individual basis and the whole application is reviewed
which includes previous and predicted qualifications, any experience, references and motivation.

View our Admissions Policy

Whilst the grades listed here are our entry requirements, we understand that predicted grades are only an estimate. We will therefore consider applicants with predicted grades that fall below these entry requirements if the application is of a high standard (however, initial offers will not be lower than stated above).

Entry onto our Foundation Year maybe offered as an alternative to the degree course if lower entry grades are achieved.

*For details on our Aston Ready contextual offer scheme, please see here.

The information contained on this website details the typical entry requirements for this course for the most commonly offered qualifications. Applicants with alternative qualifications may wish to enquire with the relevant admissions teams prior to application whether or not their qualifications are deemed acceptable. For less commonly encountered qualifications this will be judged on a case-by-case basis in consultation with the academic admissions tutor.

International students

Applicants whose first language is not English will be required to provide evidence of an English language qualification. Find out more about our English language requirements. For more information about qualifications view our Aston in your country webpage.

Learning, teaching and assessment

Our programmes put you in control, giving you the skills to lead and undertake complex engineering projects and providing you with the experiences you need to succeed in the industry. Teaching isn’t just lectures, it’s workshops and practical sessions too.

You will be involved in individual and group project work throughout the course, designed to develop individual skills as an engineer as well as communication and the organisational and leadership skills needed to work effectively in a business or organisation.

Assessment is by a combination of exams, project, lab and coursework. Your final degree classification is determined by your performance in all years after the first year.
Fees and scholarships

UK/EU students (2020/21)

Annual tuition fees: £9,250

During placement year: £4,625

International students (2020/21)

Annual tuition fees: £19,400*

During placement year: £4,625

*Tuition fees are reviewed annually and may increase in subsequent years in line with inflation linked to the Retail Price Index (RPI) to take account of the University’s increased costs of delivering the Programme. When undertaking a placement year a placement year fee applies.

More information on fees

Scholarships

At Aston University we are committed to supporting the most talented and hardworking students to achieve their potential by providing a range of scholarships to help lower tuition and living costs. Find out more about our scholarships here.

Career prospects

Well-trained graduates with skills in electronics design, software, telecommunications and engineering are in high demand. This innovative fast-track MEng is designed to reflect the demands of ‘real world’ electronic engineering. Through theoretical and project work, you’ll develop essential practical, intellectual, business and communication skills. These attributes will give you a clear, competitive edge in the search for graduate employment.

Recent graduates have moved on to roles including: research and development, design and manufacturing, education and consultancy. They are working for high-profile companies and organisations such as Olympus, Corus, HSBC, Oxford University, Hewlett Packard, Cogent Defence, BAE Systems, npower, Siemens, Orange, Vodafone, QinetiQ, the National Grid, Rolls-Royce, Jaguar Cars and Microsoft.
Other graduates have chosen to study for PhD degrees at Aston or started their own businesses.

**Frequently Asked Questions**

**Why study Electrical and Electronic Engineering at Aston?**

If you’re interested in a career in industry or commerce, using your engineering skills, this course will give you the necessary academic knowledge and understanding.

**What will I be doing on the Electrical and Electronic Engineering course at Aston?**

You will be learning through a variety of means from conventional lectures and tutorials, to project team and individual work, plant visits, lab work and specialist supervision from consultants working in industry.

**Does accreditation matter?**

Yes. Working towards accreditation with your professional body means that you are among the best in your field. This Electrical and Electronic Engineering MEng course is accredited by the Institution of Engineering and Technology, meeting the academic requirements for Chartered Engineer status.

**Why should international students choose Aston University?**

Aston University is a diverse, close community and welcomes international students on many of our undergraduate programmes. Students from over 120 different countries chose to study with us every year and Aston is not only a great place to study, based in the centre of Birmingham it’s also a great place to live.

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