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Full-time undergraduate courses

Engineering and technology

BSc (Honours) Aeronautical Engineering

UCAS code: H410

Four years full-time (including one year work placement) or three years full-time

This course produces graduate engineers that can contribute to aeronautical industries • research and development • product design and innovation • manufacture and maintenance of components and systems.

The course offers flexibility by giving you a large choice of optional modules to study.

The knowledge and core skills you gain apply to a wide range of mechanical engineering industries and commerce, increasing your employment opportunities.

BEng (Honours) Aerospace Electronic Engineering

UCAS code: HH46

Four years full-time (including one year work placement) or three years full-time

This course produces graduate engineers that can contribute to aeronautical industries • research and development • product design and innovation • manufacture and maintenance of components and systems.

You study the core themes of digital and analogue electronics, electronic systems design, signal processing and engineering analysis, and learn to apply them to aircraft technology, control systems and instrumentation.

Graduate employment opportunities are excellent whether you are interested in the civilian or defence side of the aerospace industry.

MEng Aerospace Electronic Systems Engineering

UCAS code: HH4Q

Five years full-time (including one year work placement) or four years full-time

This course is for people wanting a career at the highest level of engineering. It gives you the skills and knowledge to work in product development or senior management in industries that employ modern avionic technology.

The extra year of study you complete to achieve an MEng, provides you with a broader and deeper understanding of aerospace engineering. This makes you very attractive to employers.

You study digital and analogue electronics, communications and control systems, and understand how to apply them in aerospace engineering technologies.

BEng (Honours) Aerospace Electronic Systems Engineering

UCAS code: HH4P

Four years full-time (including one year work placement) or three years full-time

This course is for people wanting a career at the highest level of engineering. It gives you the skills and knowledge to work in product development or senior management in industries that employ modern avionic technology.

You study digital and analogue electronics, mathematics and computing. These provide the background knowledge to begin developing the key electrical and electronic applications course themes of communications systems, computer technology, control and instrumentation.

In year three you can take an optional one year work placement, which enables you to apply the knowledge gained on the course to commercial engineering practice, gain new skills and learn how industry works. We help you to find a placement and negotiate a sensible salary.

BEng (Honours) Aerospace Engineering

UCAS code: H415

Four years full-time (including one year work placement) or three years full-time

This course is for people wanting a career at the highest level of engineering. It gives you the skills and knowledge to work in product development or senior management within the aerospace industries.

You study the application of core mechanical engineering principles, analysis and design to airframe structures, propulsion systems and flight control and instrumentation, as well as mathematics and computer modelling skills.

Aerospace technology is a global industry with excellent graduate employment opportunities and the chance to travel and work abroad.

MEng Aerospace Engineering

UCAS code: H414

Five years full-time (including one year work placement) or four years full-time

This course is for people wanting a fast track career to the highest level of engineering in cutting edge product development or senior management in a wide range of aerospace industries.

The extra year of study that the MEng course requires, will provide you with a broader and deeper understanding of aerospace engineering, that will make you very attractive to employers.

In the final year of the course you will encounter the most intellectually demanding modules, spanning both specialist aeronautical and astronautical engineering topics, which are right at the forefront of our understanding of engineering systems analysis and design. These are designed to stretch your abilities to create new, innovative and exciting solutions to engineering problems.

FdSc Aerospace Technology

UCAS code: H400

Two years full-time

This course prepares you for a career in the aerospace industry. You gain knowledge, skills and experience in • aerospace technology • aerodynamics • electronics and avionics • principles of flight • engineering materials • manufacturing.

It is vocational and focuses on the • analysing • designing • prototyping • manufacturing • testing of aerospace systems and components in terms of • functionality • integrity • sustainability • environmental efficiency.

An important part of the course is work-based learning, which supports your academic learning through practical experience, gained on real industrial case studies and projects. This improves your skills and develops your industry knowledge and experience. Our students have worked with companies such as Rolls-Royce, Airbus and Smiths Aerospace.

BSc (Honours) Aerospace Technology

UCAS code: H401

Four years full-time (including one year work placement) or three years full-time

This course prepares you for a career in the aerospace industry. You gain knowledge, skills and experience in • aerospace technology • aerodynamics • electronics/avionics • the principles of flight • engineering materials • manufacturing.

It is vocational and focuses on the • analysis • design • prototype • manufacture • testing of aerospace systems and components in terms of • function • integrity • sustainability • environmental efficiency.

If you choose the sandwich route, you spend the third year on a work placement. This allows you to apply your knowledge in practice, gain new skills and develop a better industry understanding. Previous students have worked with companies such as Rolls-Royce, Airbus and Smiths Aerospace.

BSc (Honours) Automotive Design Technology

UCAS code: HH13

Four years full-time (including one year work placement) or three years full-time

This course is for people with an interest in mechanical engineering design and automotive technology. It equips you for careers in vehicle and component design and manufacture.

The course looks at a range of areas, including specialist modules covering • vehicle systems (suspension, braking) • engineering and transmissions • electronics • the modern automotive industry.

We offer a [foundation course](#) if you do not have the science and mathematics qualifications for this degree course. This preliminary year includes the background mathematics and science you need to qualify for the first year.

[BEng \(Honours\) Automotive Electronic Engineering](#)

UCAS code: HH36

Four years full-time (including one year work placement) or three years full-time

Automotive electronic specialists turn experimental research and development into new products. They develop new models or improved versions of current models.

This course looks at electronics used in automotive technology. It covers • electronic engineering • computer engineering • vehicle dynamics • power units and transmission • control systems • braking systems • vehicle design • security • ergonomics.

The European automotive industry offers a range of careers in • design • development • manufacture • management • marketing • maintenance • technical sales.

[BSc \(Honours\) Computer and Network Engineering](#)

UCAS code: HG66

Four years full-time (including one year work placement) or three years full-time

This course produces graduates able to adapt to the changing computer and networking needs of industrial and commercial organisations, while working to a high professional and ethical standard.

It gives you a foundation in computer engineering, electronics and data communications. You also gain specialist knowledge and technical ability in network engineering. These equip you for a career in a wide range of computer engineering, IT, computer networking and related fields.

You will be able to follow a career in fields that include • electronic • computer network • control • embedded systems • software • information engineering systems.

[FdSc Computer-aided Design Technologies](#)

UCAS code: HWC2

Two years full-time

This course is for people wanting to work as higher technicians in the design engineering process. It is supported by real companies such as Rolls-Royce and SEMTA.

The course develops skills using packages such as ProEngineer to create accurate drawings and design concepts, and to visualise the finished product.

You also learn the skills required to manage a drawing department in an engineering or manufacturing company.

[BSc \(Honours\) Computer-aided Design Technology](#)

UCAS code: HW12

Four years full-time (including one year work placement) or three years full-time

This degree gives you the opportunity to study computer-aided design in a university with a reputation for developing practical and innovative engineers. Industrial partners provide real life projects for modules and actively influence all our degrees.

Your studies are based on supporting mechanical engineering knowledge and developing innovative and transferable skills.

As a graduate you will be well-placed to pursue a career with design consultancies, service industries or manufacturing, or to develop your own creative enterprise.

[BEng \(Honours\) Computer-aided Engineering and Design](#)

UCAS code: H131

Four years full-time (including one year work placement) or three years full-time

This course produces graduate mechanical design engineers, who can apply computer-based techniques to engineering design, product and systems analysis and manufacturing processes.

You

- develop the intellectual skills to analyse and solve mechanical engineering problems

- learn to design creative and innovative products and mechanical systems, using modern computer-based technology
- learn about the business and commercial environment in which engineers must work

You gain the specialist academic knowledge and complementary professional and personal skills for a successful career in industry and commercial engineering enterprises.

BSc (Honours) Design Technology

UCAS code: WH21

Four years full-time (including one year work placement) or three years full-time

This course combines engineering and technology with design. You learn to design products using the most suitable materials, electronics and manufacturing processes.

The core subjects cover the supporting technological subjects, while optional modules allow you to choose the areas that match your interests and career aims. These include • design and manufacture • computer analysis • vibration and acoustics • vehicle technology • automotive design • materials and business.

BEng (Honours) Electrical and Electronic Engineering

UCAS code: H606

Four years full-time (including one year work placement) or three years full-time

This course is for those wanting a career at the highest level of engineering, in product development or senior management.

You gain advanced engineering skills and an introduction to business and management. You also develop specialist knowledge in your field of study.

We complement theory, simulation and case studies with practical laboratory project work, which increases employability.

Final year projects link theory and industry standard hardware and software, available in the University, with solutions to practical problems.

MEng Electrical and Electronic Engineering

UCAS code: H606

Five years full-time (including one year work placement) or four years full-time

This course is for people wanting a fast track career at the highest level of engineering, in product development or senior management.

You gain advanced engineering skills combined with business and management learning. You also develop specialist knowledge in your field of study, with an emphasis on design-oriented skills.

Electrical and electronic engineers can apply their skills to work in areas such as • global telecommunications • consumer electronics • computer electronics • aerospace • automotive • robotics • general manufacturing and water, gas and electricity supply.

BSc (Honours) Electronic and Electrical Engineering

UCAS code: H605

Four years full-time (including one year work placement) or three years full-time

This course produces electrical and electronic engineers who can work in the many industries that use modern electronic technology.

You learn the scientific principles of electrical and electronic engineering. You then learn how to apply them to • design • create • test • improve electronic systems and products to meet market needs.

You also learn to

- analyse and define practical electrical and electronic engineering problems
- identify constraints
- create solutions to meet the customer and user needs

BEng (Honours) Electronic Engineering

UCAS code: H610

Four years full-time (including one year work placement) or three years full-time

This course provides the technical skills and knowledge of engineering applications and techniques related to microprocessor systems and information networks.

Modules studied include developing, commissioning and maintaining • electrical • electronic • computer network • control • microcomputer • software

- information, engineering systems.

It is the first step towards becoming an incorporated engineer (IEng).

BEng (Honours) Energy Engineering for Sustainability

UCAS code: H221

Four years full-time (including one year work placement) or three years full-time

This course is suitable for you if you have an interest in developing new products and processes to deliver clean, affordable, sustainable energy.

You develop skills in modern mechanical and electrical engineering and learn how to find innovative solutions to problems by applying technical knowledge to practical situations.

You gain expertise in renewable systems, including • solar power • wind • wave • geothermal • biomass • tidal • hydro. You also learn about integrating them into conventional energy systems.

For each energy source you build a detailed knowledge of their operating principles.

You learn to design, analyse and develop control energy systems for the generation, storage and distribution of electricity and heat.

Extended Degree Programme Engineering (preparatory year)

UCAS code: H108

First year of a full-time four year degree (five years with one year work placement)

This course is the first year of our extended degree in engineering. It allows you to study an engineering degree if you do not have the usual A level or equivalent qualifications.

It provides a thorough study of the basic principles of engineering and associated subjects including • engineering science (mechanical, electrical and electronic) • mathematics • computing • materials.

If you successfully complete this year, we guarantee you a place on one of our specialised engineering degrees. These include • mechanical engineering • computer-aided engineering • manufacturing engineering • automotive studies • materials engineering • electrical engineering • electronic engineering • environmental engineering • computer and information technology.

BEng (Honours) Forensic Engineering

UCAS code: H199

Four years full-time (including one year work placement) or three years full-time

Forensic engineering focuses on applying a broad base of technical and scientific principles to inform and add to legal argument.

Forensic engineers are employed in various engineering practices such as accident investigation to find out the cause, responsibility and remedial action needed to prevent a similar accident.

Members of the legal profession use the results of the work of the forensic engineer to guide them in criminal and civil cases. Forensic engineers also have an essential role in investigating criminal acts.

You learn advanced investigatory techniques and the basic materials and mechanical principles that support all engineering investigation. You develop a focused analytical approach to problem solving and improve your leadership, communication and project management skills.

BEng (Honours) Mechanical and Automotive Engineering

UCAS code: H302

Four years full-time (including one year work placement) or three years full-time

You learn the scientific principles of

- current mechanical engineering technologies
- engineering design including methods and constraints
- applying control and instrumentation technologies
- automotive systems, engines and manufacturing

We also cover business, financial, legal and environmental constraints.

You can take a year's paid work experience in your third year and we help you to find a suitable placement.

Our graduates can work across traditional subject boundaries and are well-equipped for careers in a range of industries.

BEng (Honours) Mechanical and Computer-aided Engineering

UCAS code: HH31

Four years full-time (including one year work placement) or three years full-time

This course produces high quality graduate mechanical and design engineers. They have the specialist academic knowledge and complementary professional and personal skills for a successful career in research and development, industry or other commercial enterprises.

This course is accredited by the Institution of Mechanical Engineering and can lead to chartered engineer status.

Mechanical engineers work in design and manufacturing in • power engineering • product testing • project engineering.

BSc (Honours) Mechanical and Design Engineering

UCAS code: HH3C

Four years full-time (including one year work placement) or three years full-time

We are looking for people who are motivated, inquisitive and want a challenge. You must want to know why and how things happen, and how things work. We help you to develop the skills to answer these questions.

You learn the scientific principles of mechanical and engineering design, and apply these to creating products, systems and services.

You learn how to

- design and analyse mechanically engineered products and devices
- incorporate the characteristics, properties and limitations of engineering materials
- select relevant equipment, tools and processes for manufacture

You can take a one year paid work placement in your third year.

BEng (Honours) Mechanical Engineering

UCAS code: H300

Four years full-time (including one year work placement) or three years full-time

This course produces high quality graduate mechanical engineers with specialist academic knowledge and complementary professional and personal skills.

With accreditation by the Institution of Engineering and Technology for incorporated engineer status, you can register with the Engineering Council as an incorporated engineer after graduating.

The course prepares mechanical engineers for employment in a wide variety of engineering companies spanning • manufacturing • design • research and development • production.

MEng Mechanical Engineering

UCAS code: H301

Five years full-time (including one year work placement) or four years full-time

Mechanical engineering is a diverse and exciting area of the engineering disciplines and covers many areas of our everyday lives.

It is concerned with • designing • developing • installing • operating • maintaining almost all objects with movable parts. Most man-made items involve mechanical engineering skills during development or manufacture.

Graduates from this course will be suited to work in a professional engineering company or for a career in research and development.

BSc (Honours) Product Design

UCAS code: H770

Four years full-time (including one year work placement) or three years full-time

This is a structured, classroom-based course with full access to our extensive computer-aided design suites and workshops. You design and prototype working products through • drawings • models • calculation • testing. And you learn to balance the needs of users and the cost of manufacture.

We draw on a wide knowledge base including • design • mechanical engineering • information technology • mechatronics • manufacture and materials • computer-aided design and manufacture (CAD/CAM) • rapid prototyping.

You can find careers in • design consultancies • service industries • manufacturing • developing your own creative enterprise • engineering design offices.

FdEng Railway Engineering

UCAS code: H332

Two years full-time

The full-time version of this course is no longer running but you may be interested in the part-time [FdEng Railway Engineering](#) or full-time [BEng \(Honours\) Railway Technology](#).

BEng (Honours) Railway Technology

UCAS code: H334

Three years full-time or four years full-time (including one year work placement or year of study abroad)

This course is designed to give you the knowledge and experience to begin a career in the rail industry. It also aims to increase the breadth and depth of knowledge of existing employees.

It focuses on the infrastructure sector of the rail industry. You study elements of signalling • electrification • railway track and civil engineering • project and quality management.

You gain detailed understanding about the function of the core areas of railway infrastructure as well as how these areas interact when they interface.

BSc (Honours) Sport Technology

UCAS code: C6G4

Four years full-time (including one year work placement) or three years full-time

This course provides a broad, multidisciplinary study of sport technology.

You study why technology is important in the sport environment. Topics include designing, manufacturing and marketing a new product. You also learn to use suitable instrumentation to check product and athletic performance.

This course prepares you for a career in the rapidly expanding sport industries.

BEng (Honours) Telecommunication and Electronic Engineering

UCAS code: H690

(top up)

One year full-time

Most modern organisations increasingly depend on telecommunication and electronic technology.

This top up award is suitable for you if you have an HND or foundation degree in electronic or telecommunication engineering and wish to develop your award to degree level.

The course develops your understanding of the scientific principles and mathematics underpinning telecommunication and electronic engineering. You also learn about analogue and digital electronics, digital signal processing and optical communications.

You investigate the principles of telecommunication systems design and the • methods • constraints • techniques • procedures involved in creating the products, systems and services that organisations use.

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