In your first year we will provide a lab coat and safety shoes.

96% of our 2015 Engineering graduates were in work or further study six months after graduation with an average starting salary of £26,600.*

3rd overall among UK integrated engineering departments in the latest REF (2014)

8th The Times and Sunday Times Good University Guide 2017 ranks Warwick 8th in the UK for Engineering**

8th The Complete University Guide 2018 ranks Warwick 8th in the UK for Engineering**

7th The Guardian league tables 2018 ranks Warwick 7th for Engineering**

* Derived from the HESA Destinations of Leavers from Higher Education survey, carried out approximately six months after successful completion including 2014/15 Engineering graduates home and EU first degree full-time students.

** Because all our courses share the first year and the first term of the second year, all our courses are ranked together in league tables under General Engineering, rather than under individual specialisms.

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WHY ENGINEERING AT WARWICK?

A strong interdisciplinary foundation develops your interests
You are probably considering engineering because you’re drawn to the application of maths and science to create, innovate, and solve real-life problems. But if you’ve had no exposure to engineering disciplines at school or college, deciding on a specialism may not be straightforward.

At Warwick you don’t have to choose upfront and you can easily change your mind - right up to the second term of your second year. Because, until that point, all students study a general engineering programme, which is much favoured by industry.

Choice and flexibility
You are free to continue on the general Engineering route or specialise in the fields of Automotive, Biomedical Systems, Civil, Electronic, Electrical and Electronic, Mechanical, Manufacturing and Mechanical, Systems, or choose an integrated Business course. You can also switch between the three-year BEng and four-year MEng degrees. Generally you need to be achieving 2:1 in your studies to stay on or switch to the MEng.

Industry links
Our degrees are delivered in partnership with WMG (Warwick Manufacturing Group). This integrated approach equips you with the knowledge and transferable skills required to work in industry, now and into the future.

Warwick is a great place to study engineering. Our Coventry location places you close to many of the UK’s biggest names in engineering, and the school has a long track record of working with the likes of Jaguar Land Rover, Arup and Rolls Royce. Some companies offer their own opportunities for you to get involved in research. For example, third-year projects supported by industry.
Valuable experience to get you noticed

Options to take an intercalated year in industry, research or to study abroad (typically between the second and third, or third and fourth, years) are reflected in your degree title. Our Placements and Internships Officer will work with you to identify opportunities for year-long and/or summer internships and research opportunities, which often lead to further study and employment for our students. Warwick’s international links make it possible for you to gain experience on a global platform through an exchange year at partner universities such as Monash University in Australia, or institutions in the US, Canada, China and across Europe.

Fascinating and thrilling projects

Practical work such as designing a mobile phone-based electronic nose or a dominoes-playing robot*, give you the opportunity to expand and apply your learning. Building a Formula Student racing car, launching a satellite into space or creating a human-powered submarine** are a sample of group projects that allow you to collaborate with other engineering students across disciplines, acquire advanced skills for the workplace and form lifelong friendships.

World class facilities that are constantly being expanded

You’ll have access to an impressive range of research facilities, workshops and laboratories with cutting edge equipment. Our latest investment is a £5 million design studio, with manufacturing facilities, where you can see your ideas and innovations come to life, whether they are academic or personal projects.

Learning in a supportive team environment

There is strong support in the School from students and professors alike. Lecturers provide office hours for additional help with materials they’ve covered. Your personal tutor is there for your academic and your personal needs. Undergraduates in higher years are often happy to assist too. There is a real sense of camaraderie and team spirit, helped in part by the highly active Engineering Society - with their 700+ members - and the Warwick branch of Engineers Without Borders who focus on international development and renewable technology. Together they organise socials, career talks and seminars, large-scale conferences, as well as voluntary community outreach opportunities.

Enviable employability

Our graduates achieve some of the highest rates of starting salary and success in finding work, or further study, across the university. We ask you to start thinking about your future from day one, encouraging you to explore the support and opportunities we offer throughout your degree. As well as deep subject knowledge, our courses help you develop key skills in independent and critical thinking, presentation, communication, research, leadership, team-working and organisation. There are ample opportunities for work experience during your time here. As the UK’s top employers tell us, activities students get involved with outside of learning really set them apart. So enjoy yourself, get involved, and your CV will come alive.

Helen Boyle
2nd Year, MEng Manufacturing and Mechanical Engineering Student

* These are examples of current third year projects.
** These are examples of past and current MEng projects.
ENGINEERING DEGREE PROGRAMMES

Our degrees are structured to give you choice and flexibility while meeting the needs of employers, who want engineers with strong technical knowledge and the ability to understand and communicate within technical and business roles.

▲ Automotive Engineering (BEng/MEng)
▲ Civil Engineering (BEng/MEng)
▲ Electrical and Electronic Engineering (BEng/MEng)
▲ Electronic Engineering (BEng/MEng)
▲ Engineering (BEng/MEng)
▲ Engineering and Business Management (BEng)
▲ Manufacturing and Mechanical Engineering (BEng/MEng)
▲ Mechanical Engineering (BEng/MEng)

Other engineering routes
▲ Biomedical Systems (BEng/MEng)
▲ Computer Systems Engineering (BEng/MEng)
Department of Computer Science
▲ Systems Engineering (BEng/MEng)

Entry requirements
For all our programmes starting in 2018 we will be typically asking for:

BEng:
AAA at A level
38 points at IB
to include 6,6
at Higher Level

MEng:
*AA at A level
38 points at IB
to include 6, 6, 6
at Higher Level

These should include Maths and Physics. However, all applicants are given individual consideration. We will consider strongly motivated candidates for entry into year one who have either Mathematics or Physics at A Level and who have demonstrated their aptitude for both these subjects at a lower level. A Level General Studies and Critical Thinking are excluded from these offer requirements.

Language requirements
If your academic qualifications meet our entry requirements, but your English language qualifications are not accepted as equivalent to GCSE or IB English, you may be offered a place on the condition that you achieve an acceptable qualification before you join us.

If English is not your first language, you will be asked to achieve one of the following:

- IELTS 6.0, including minimum 5.5 in each component
- TOEFL 87 internet-based with a minimum of 21 in listening and writing, 22 in reading and 23 in speaking
- PTE Academic 60, with no less than 59 in any component

ielts.org
ets.org
pearsonpte.com
cambridgeesol.org
DEGREE STRUCTURES

For the first year you will follow the same programme as all students, giving you a wide overview of engineering.

In the second year, you will continue to study the same core modules as all other students, until the end of term one, after which you will be able to specialise, or continue on the general Engineering pathway.

Year 1
In your first year you will be taught the fundamentals of engineering, which you will build on in later years according to your interests.

Core modules
- Dynamics and Thermodynamics
- Electrical and Electronic Circuits
- Engineering Design
- Engineering Mathematics
- Introduction to Engineering Business Management
- Introduction to Engineering: Professionalism and Practice
- Materials for Engineering
- Statics and Structures
- Systems Modelling, Simulation and Computing

Optional extra module
A Modern Foreign Language

Projects
You will undertake a range of small projects from ‘reverse engineering’ to design-and-make challenges on topics including: home automation, light rail transit, car aerodynamics, and intelligent robot vehicles. These projects introduce you to industry-standard software, such as SolidWorks and Matlab.

Year 2
During your second year you will build on your understanding of the multidisciplinary nature of engineering products.

Term one Core Modules
- Dynamics and Fluid Mechanics
- Electromechanical System Design
- Engineering Mathematics and Technical Computing
- Technical Operations Management

From term two
You will study second year core and optional modules for your chosen course (see pages 12 to 30). Your personal tutor, our Placements and Internships Officer, and Warwick’s Careers and Skills Service can support you to decide the direction that’s right for you.

Projects
As a second year student you will extend your design knowledge by participating in a large group-based design-and-make task.

Intercalated degrees
You may spend a year in industry, research or study abroad between years two and three (or between three and four for MEng) and have that reflected in your degree title.

Year 3
In your third year the courses concentrate entirely on providing specialist engineering knowledge in your chosen discipline. General Engineers will also be able to explore their particular interests in more depth. If you decide that you would rather be more business focussed, you can take our Engineering Business Management degree which is delivered in partnership with the prestigious Warwick Business School.

Projects
You will also develop your research skills through an individual project related to your degree, specialising in one particular area. This may be linked to our research activities, or be in conjunction with an external company, or support a fourth year project. Current projects include: ‘Big Data and the Knowledge Economy - Data Mining Social Media to Determine Tech Trends’; ‘Damage Detection of Civil Infrastructure Using Temperature-Dependent Behaviour’; ‘Fishing Boat Propellers for Uganda Using 3D printing’; ‘High Velocity Wireless Protocols for High-Speed Rail’; and ‘Delivering Satellites to Space with Power Electronics’.

Exchange year abroad
MEng students may choose to take their third year at a partner university abroad (not to be confused with an intercalated study abroad year, which adds a year to your degree duration).

Year 4 (MEng only)
In the fourth year of an MEng course you will study specialist material relevant to your degree course.

Projects
You will participate on a large group project worth 25% of the year, which simulates the multidisciplinary working practices you will experience in your career. Students from all specialist courses work together on these projects. Popular projects include the IMechE Formula Student competition, Warwick University Satellite Project (WUSAT), Severn Trent reservoir design, and building search-and-rescue devices with Warwick Mobile Robotics.

BEng or MEng?
Most of our degrees are accredited by at least one professional engineering body and can lead to Chartered Engineer status (see page 35) and a career as an engineer.

The MEng final-year multidisciplinary group project is unique to the four-year degree and is not something that you would normally find as part of a one year stand-alone Master’s.

If you have broader career aspirations, our unaccredited BEng Engineering Business Management course offers a rigorous route into business, where your technical knowledge and transferrable skills will be in demand.
Developed in partnership with industry leaders, our strong accredited degrees will build your automotive expertise through inspirational teaching and practical investigation using cutting-edge technology.

Led by WMG (Warwick Manufacturing Group) and accredited by the Institution of Mechanical Engineers, and the Institution of Engineering Technology, we created these degrees in collaboration with global companies including Jaguar Land Rover, BMW and Ricardo.

You will benefit from the unified approach to delivery between WMG and the School of Engineering, and from industrial visits and input from leading firms in the automotive supply chain. Individual and group projects play a vital role in these programmes allowing you to explore topics such as gearbox analysis and flywheel energy storage. Fourth-year students have the opportunity to develop electric and internal combustion-powered IMechE Formula Student racing cars.

By gaining skills ranging from mechanical design, electronic systems, manufacturing techniques, management, ergonomics and human perception of things such as noise, vibration and performance, you'll graduate as a well-rounded automotive engineer equipped for a broad range of career options.

You will also acquire talent in research, design and innovation, communication and leadership, adopting Warwick's multidisciplinary approach to solving engineering problems.

We'll be the start of your career journey and help you get noticed by supporting you to find industrial placements or research internships during your degree. Many students go on to take graduate jobs with companies they have interned with, so we strongly encourage this approach.
Civil Engineering

BEng Civil Engineering
3 Years | UCAS code: H200

MEng Civil Engineering
4 years | UCAS code: H202

Develop expertise in the fundamental civil engineering principles of analysis, design, sustainability and safety, to grow our future infrastructure and services.

Civil engineers plan, design, construct and maintain the infrastructure or ‘built’ environment, including buildings, airports, railways, roads, tunnels, bridges and dams.

Benefitting from teaching founded on cutting-edge research, you’ll learn extensive theory and practical skills. Regular individual and group projects tackle industrial challenges such as the design, building and testing of roof structures, development of a robotic construction scheme or helping Severn Trent improve reservoir design. You will also enjoy fieldwork, which has previously included geotechnical engineering work in Wales and the Isle of Wight.

Visits to construction sites and lectures from experts in industry provide insights into the latest civil engineering practices. You will take a cross-discipline approach to solving engineering problems and hone your project management, communication and leadership skills. All this will give you confidence to implement new technologies and optimise existing ones, equipping you for work across many industrial sectors.

Career destinations for civil engineers may include working for consultants and contractors across the specialisms of structures, geotechnics, tunnelling and underground space, water engineering, transportation and energy.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Civil Engineering Design 1
• Civil Engineering Materials and Structural Analysis

Options
• Computer Architecture and Systems
• Introduction to Secondary School Teaching (Physics)
• A Modern Foreign Language
• Multimedia Technology and Signal Propagation
• Starting a Business
• Systems Engineering Principles
• Technology in International Development

Year 3
Civil Engineering Design 2
Concrete Structures
Design Project with Construction Management (BEng only)
Geotechnical Engineering
Individual Project (MEng only)
Steel Structures
Water Engineering for Civil Engineers

Year 4 (MEng)
Advanced Geotechnical Engineering
Advanced Structural Engineering
Construction Management and Temporary Works
Global Water and Sanitation Technologies
Group Project

Further information
www.warwick.ac.uk/ug/engineering

We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.

Options
• Design for Sustainability
• Structural Dynamics and Vibrations
• Quality Systems
• Renewable Energy
• River Mixing

“I picked a project in my second year, in which you design and build a 3m-long aqueduct. I developed an individual design proposal in term one. In term two I worked in a group of eight to put together a comprehensive report with diagrams, calculations, a risk assessment and such.

My part of the project was to see how the design reacts under the forces of gravity and the live load of the water using finite element analysis. Actually building it was a really nice part of the course – the design documents were assessed but the build wasn’t, so it’s a good bit of fun and stress relief before exams. It’s also fun to have some practical activity outside of lectures, and watching the design progress from my first rough sketches to the finished product has been one of the highlights of my second year.”

Nathan Lavenstein,
2nd Year Student:
School of Engineering and Student Blogger

Hear more from Nathan at
studentblogs.warwick.ac.uk/engineering3
Our new Electrical and Electronic Engineering degree differs from the Electronic degree through its emphasis on Machines, Power Systems and Control.

Christos Mias, Discipline Degree Leader

ELECTRICAL AND ELECTRONIC Engineering

BEng Electrical and Electronic Engineering 3 Years | UCAS code: H605
MEng Electrical and Electronic Engineering 4 years | UCAS code: H606

Develop a specialist knowledge of electrical and electronic engineering devices, processes and systems, while gaining experience of working collaboratively across engineering disciplines.

These courses cover the scientific concepts, design and methods relating to electrical and electronic engineering products, processes and systems. The degrees share their first two years with the Electronic programmes (see page 19) while third and fourth years consider power electronics, electrical machines, systems modelling and the operation and control of power systems.

Electrical and Electronic Engineering graduates can contribute to a variety of sectors and industries such as power electronics, electrical power generation, aerospace, automotive, marine engineering and the built environment.

You’ll learn through lectures, tutorials, example classes, face-to-face contact with academics for resolving module queries, laboratories, coursework assignments and projects. Practical work in electrical and electronic engineering will begin in the first year, with the third-year individual project forming a major part of the course.

Our state-of-the-art laboratories are equipped with software and instruments to support varied teaching activities and the course significantly benefits from close links with industry.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3.

Core
- Analogue Electronic Design
- Computer Architecture and Systems
- Semiconductor Materials and Devices

Options
- Biomedical and Clinical Engineering
- Motor Vehicle Technology
- Multimedia Technology and Signal Propagation
- Starting a Business
- Systems Engineering Principles
- Technology in International Development

Extra modules
- Introduction to Secondary School Teaching (Physics)

Year 3
A Modern Foreign Language

Core
- Communications Systems
- Digital Systems Design
- Individual Project
- Power Electronics
- Power Systems and Electrical Machines
- Signal Processing
- Systems Modelling and Control

Options
- Advanced Robotics
- Advanced Wireless Systems and Networks
- High Performance Embedded Systems Design
- Information Theory and Coding
- Optical Communication Systems
- Radiowave Propagation and Wireless Communications Theory

Year 4 (MEng)
Core
- ASICs, MEMS and Smart Devices
- Advanced Power Electronic Converters and Devices
- Control of Electrical Drives
- Group Project
- Operation and Control of Power Systems

Options
- Advanced Robotics
- Advanced Wireless Systems and Networks
- High Performance Embedded Systems Design
- Information Theory and Coding
- Optical Communication Systems
- Radiowave Propagation and Wireless Communications Theory

Further information
www.warwick.ac.uk/ug/engineering

We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.

I thoroughly enjoyed the interdisciplinary nature of the Electronic Engineering undergraduate degree at Warwick, which provided an in-depth knowledge of crucial principles across civil, electronics, and mechanical engineering. These skills are in high demand in every engineer’s toolkit and help to develop an understanding of the multidisciplinary approach that is required to tackle the grand engineering challenges of the 21st century.

The highlight of my undergraduate course was undoubtedly attending the British Conference of Undergraduate Research (BCUR) “Posters in Parliament 2016” competition. I was one of only two students chosen to represent the University of Warwick at the event, where 53 undergraduate students from 27 UK universities presented their research at the Houses of Parliament in London. This honour resulted from my participation in the Undergraduate Research Support Scheme (URSS), a summer internship with the University that provides students with the unique opportunity to gain first-hand experience of academic research. I would strongly recommend that undergraduates take advantage of this programme to develop sought-after research skills and engage with the wider scientific community.

Akira Tiele, PhD student

ELECTRONIC Engineering

BEng Electronic Engineering
3 Years | UCAS code: H610

MEng Electronic Engineering
4 years | UCAS code: H612

A remarkable combination of scientific and technical innovations means electronic engineers are central to the design and manufacture of a vast range of products and systems. As favoured by industry, you will gain your specialism whilst working in multidisciplinary teams.

Our research-led Electronic degrees draw in experience from across disciplines to provide skills that are aligned with best commercial practices and much sought after by employers. Our graduates work in a variety of sectors in addition to electronic engineering, such as design and production, energy, transport, the built environment, information and communications.

Newly refurbished, state-of-the-art laboratories are equipped with software and instruments to support the varied teaching activities in electronic engineering. The course significantly benefits from close links with industry.

Practical work is an important part of the degree. Recent individual projects titles, supported by industry, include ‘A Mobile Phone Based Electronic Nose’ that analyses the breath of patients in local hospitals and ‘Delivering Satellites to Space with Power Electronics’.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Analogue Electronic Design
• Computer Architecture and Systems
• Semiconductor Materials and Devices

Options
• Biomedical and Clinical Engineering
• Motor Vehicle Technology
• Multimedia Technology and Signal Propagation

Year 3
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Analogue Electronic Design
• Computer Architecture and Systems
• Semiconductor Materials and Devices

Options
• Biomedical and Clinical Engineering
• Motor Vehicle Technology
• Multimedia Technology and Signal Propagation

Year 4 (MEng)

Core
• ASICs, MEMS and Smart Devices
• Advanced Power Electronic Converters and Devices
• Group Project
• High Performance Embedded Systems Design
• Radiowave Propagation and Wireless Communications Theory

Extra modules
• Introduction to Secondary School Teaching (Physics)

Accrediting institutions:

A remarkable combination of scientific and technical innovations means electronic engineers are central to the design and manufacture of a vast range of products and systems. As favoured by industry, you will gain your specialism whilst working in multidisciplinary teams.

Our research-led Electronic degrees draw in experience from across disciplines to provide skills that are aligned with best commercial practices and much sought after by employers. Our graduates work in a variety of sectors in addition to electronic engineering, such as design and production, energy, transport, the built environment, information and communications.

Newly refurbished, state-of-the-art laboratories are equipped with software and instruments to support the varied teaching activities in electronic engineering. The course significantly benefits from close links with industry.

Practical work is an important part of the degree. Recent individual projects titles, supported by industry, include ‘A Mobile Phone Based Electronic Nose’ that analyses the breath of patients in local hospitals and ‘Delivering Satellites to Space with Power Electronics’.
ENGINEERING

General

BEng Engineering
3 Years | UCAS code: H100

MEng Engineering
4 years | UCAS code: H102

Accrediting institutions:

Gain an in-depth understanding of engineering principles across a wide range of disciplines, with options to specialise in your interests and strengths.

This is an ideal route into engineering if you wish to delay your specialism until you’ve sampled all our disciplines or want a sustained broad learning experience.

Led jointly by the School of Engineering and WMG (Warwick Manufacturing Group), you will be taught by experts across the fields of automotive, civil, electronic, manufacturing, mechanical, and systems engineering.

As with all our degrees, you will decide whether to stay on this general pathway or switch to another engineering course in your second year of study.

Our students tend to know what they want by then, but if you find you need guidance, your tutor will support you to choose the direction that’s right for you.

Interdisciplinary projects enable you to tackle challenges that could range from creating search and rescue robots, designing carbon-free homes, optimising mechanical biological waste treatment or building a nano-satellite.

Major projects around the world are increasingly multidisciplinary, requiring engineers with a breadth of understanding to identify solutions. A degree in general engineering is a great platform from which to start an exciting and varied career.

By Sam Bedell
3rd year MEng Engineering student

COUSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
Core
Students follow the General Engineering core programme in Term 1 (see page 10), and then take the second-year core and optional modules from one of these engineering streams:

Options
- Automotive
- Biomedical Systems
- Civil
- Electrical and Electronic
- Electronic
- Engineering Business Management
- Manufacturing and Mechanical
- Mechanical
- Systems

Year 3 (BEng)
Core
- Individual Project, or
- Design Project with Construction Management

Options
- Automotive
- Biomedical Systems
- Civil
- Electrical and Electronic
- Electronic
- Manufacturing and Mechanical
- Mechanical
- Systems

Year 3 (MEng)
Choose the third-year core modules from one of these engineering streams:

- Automotive
- Biomedical Systems
- Civil
- Electrical and Electronic
- Electronic
- Manufacturing and Mechanical
- Mechanical
- Systems

Year 4 (MEng)
Core
- Group Project

Options
You are free to take a mixture of fourth-year modules, working within timetable constraints, from any of these engineering streams:

- Automotive
- Biomedical Systems
- Civil
- Electrical and Electronic
- Electronic
- Manufacturing and Mechanical
- Mechanical
- Systems

Further information
www.warwick.ac.uk/ug/engineering

We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.
ENGINEERING BUSINESS MANAGEMENT

BEng Engineering Business Management
3 Years | UCAS code: HN12

Reflecting the realities of the multidisciplinary business environment, we integrate both the technical and business content you will need to be successful in a wide range of careers.

Engineering companies need to provide not only superior products, but also superior services to be sustainable in the long-term. There is a real demand for graduates with technical knowledge as well as the wider aspects of strategic business management and entrepreneurship. By mastering this, you’ll provide the key interface between roles as diverse as design, manufacturing, marketing, contract management and supply chain management.

This degree will appeal if you want to study engineering, but seek an alternative to becoming a Chartered Engineer. You might aspire to join a company that provides engineering, maintenance or logistics services, for example, or have your sights set on consultancy roles.

Like all of our engineering undergraduates, you will spend your first year studying general engineering concepts. You’ll then move on to develop your knowledge of the full range of business functions, alongside further study in engineering.

You will also have the opportunity to undertake an industry placement or research internship. Many students go on to find graduate jobs with companies they have interned with, so we strongly encourage this.

Your final degree will be a BEng to reflect the emphasis on engineering.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Manufacturing Engineering Design
• Industrial Engineering

Options
• Failure Investigation
• Introduction to Secondary School Teaching (Physics)
• A Modern Foreign Language
• Motor Vehicle Technology
• Starting a Business

Year 3
Core business
• Supply Chain Management

Optional business
Choose modules from a range of subject areas such as: marketing, strategy, entrepreneurship, human resources, customer service management, industrial relations, law as well as accounting and finance.

Core engineering
• Individual Project
• Quality Techniques

Optional engineering
• Automation and Robotics
• CAD/CAM and Simulation
• Construction Management and Temporary Works
• Design and Management of Lean Operations
• Design for Manufacture
• Design for Vehicle Safety
• Lifecycle Engineering for Manufacturing Systems

Further information
www.warwick.ac.uk/ug/engineering

We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.

"Choosing the University of Warwick was one of the best decisions of my life. Not only did I fulfill all my dreams but I achieved a lot more than I could have possibly imagined.

I had some interesting projects, like designing an automatic house for the elderly, making a robot car, and developing an idea for an attack alarm-app! The engineering programmes give you great flexibility to select modules according to your preferences.

I chose Engineering and Business Management because it’s an interesting degree and also very sought after by employers. In my last year I studied Management Accounting, Principles of Finance, Economics for Business and Markets, Marketing and Strategy. During the financial crisis it suddenly becomes so much more relevant because all that we learnt could be applied so well.

Warwick places a great emphasis on extra-curricular activities and this is where its students differentiate themselves from others. Amongst other activities I hosted a Bollywood music show on Radio Warwick which was thrilling! In my final year I received the Warwick Advantage Gold Award for my exceptional involvement with the University.”

Divya Surana
Business Development Lead UberEATS, Mumbai, India
MANUFACTURING AND MECHANICAL Engineering

BEng Manufacturing and Mechanical Engineering
3 Years | UCAS code: HH73

Accrediting institutions:

As a creative problem solver, you'll develop a deep understanding of manufacturing processes and mechanical design principles for a career working with advanced technologies.

Globally, manufacturing is a key provider of wealth and employment. Manufacturing and mechanical engineers apply their creativity, skills and vision to work with a range of other engineers in the development of innovative and cost-effective products.

As a manufacturing and mechanical Engineer, you'll master modern technologies and skills such as robotics, computer-aided design and simulation. We offer you a rich curriculum and the resources to achieve this, accredited by the Institution of Engineering and Technology, and the Institution of Mechanical Engineers. We will give you a significant understanding of management techniques and skills alongside these technical subjects. You will also have the opportunity to undertake an industry placement or research internship. Many students go on to find graduate jobs with companies they have interned with, so it’s a great opportunity to take full advantage of.

After graduation you’ll typically find employment within advanced industries as diverse as aerospace, consumer goods, electronics and pharmaceuticals, as well as the more traditional light- and heavy-engineering sectors.

Further information
www.warwick.ac.uk/ug/engineering

“We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.”

James Fairbairn, Technical Project Manager, BAE Systems and MEng Manufacturing and Mechanical Engineering graduate.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Industrial Engineering
• Manufacturing Engineering Design

Options
• Failure Investigation
• Introduction to Secondary School Teaching (Physics)
• A Modern Foreign Language
• Motor Vehicle Technology
• Starting a Business

Year 3
Core
• Individual Project
• Automation and Robotics
• CAD/CAM and Simulation
• Design and Management of Lean Operations
• Design for Manufacture
• Lifecycle Engineering for Manufacturing Systems
• Quality Techniques

Year 4 (MEng)
Core
• Innovative Process Development
• Group Project

Options
• Advanced Robotics
• Automotive Materials and Processes
• Design for Sustainability
• Dynamic Analysis of Mechanical Systems
• Fuels and Combustion

• Fuel Cells and Energy Storage
• Quality Systems
• Renewable Energy
• Simulation of Operations
• Supply Chain Management
• Vehicle Propulsion

The flexible course design is one of the main reasons why I chose Warwick. I was able to design the course to do exactly what I wanted to do. I took modules in design, advanced computer engineering, robotics, advanced management techniques, and advanced manufacturing - all bits and pieces to add to my own interest and broaden my spectrum of knowledge.

Leading the Warwick Submarine team into the International Submarine Races competition was the highlight of my degree. The challenges and experiences in the build process, combined with the collaborative spirit, good-natured competition, and friendships and networking made at the event itself, have been priceless.”

James Fairbairn

Technical Project Manager, BAE Systems and MEng Manufacturing and Mechanical Engineering graduate.

warwick.ac.uk/engineering
MECHANICAL Engineering

BEng Mechanical Engineering
3 Years | UCAS code: H300

MEng Mechanical Engineering
4 years | UCAS code H302

Up-to-the-minute research and industrial best practice shapes our course, enabling you to develop a sound understanding of mechanical engineering principles and the expertise to design and create sustainable technologies.

Mechanical systems, mechanisms and machines lie at the heart of our traditional engineering industries. The skills and techniques associated with them continue to be essential. In recent years these have extended into the areas of precision engineering, nanotechnology, and mechatronics, as mechanical engineers have broadened their skill sets and embraced technologies from other disciplines to solve difficult problems.

Our courses take a multidisciplinary approach to engineering challenges. Led by experts in the School of Engineering and WMG (Warwick Manufacturing Group) we provide opportunities to learn from world-leading research in areas such as precision mechanics, fluid dynamics and sustainable thermal energy technology, as well as complementary areas in other fields of engineering. We also work with many of the country’s leading companies. This collaboration feeds back into our research, informs our teaching and helps us to keep our courses at the forefront of industrial best practice.

You’ll have the chance to apply your new skills through projects at various points in the degree. Third year students undertake a major individual project to work on a specific problem in depth. For example: investigations into engine improvements; the fluid dynamics of exploding bubbles; and mass estimation using vision control.

Moving into the fourth year, projects become more collaborative. To many the final-year MEng project, such as the Formula Student racing car build, is seen as the culmination of all the degree elements.

COURSE STRUCTURE

Year 1
General Engineering core programme (see page 10)

Year 2
General Engineering core programme in Term 1 (see page 10) with a mix of core modules and options in Terms 2 and 3:

Core
• Mechanical Engineering Design 1
• Planar Structures and Mechanisms
• Systems Engineering Principles

Options
• Biomedical and Clinical Engineering
• Forensic Engineering
• Motor Vehicle Technology
• Technology in International Development

Extra modules
• Introduction to Secondary School Teaching (Physics)
• A Modern Foreign Language
• Starting a Business

Year 3
Core
• Dynamics of Vibrating Systems
• Engines and Heat Pumps
• Fundamental Fluid Mechanics for Mechanical Engineers
• Individual Project
• Mechanical Engineering Design 2
• Precision, Measurement, and Control

Year 4 (MEng)
Core
• Group Project

Options
• Advanced Fluid Dynamics
• Advanced Robotics
• Automobile Systems Dynamics and Control
• Biomechanics
• Bioenergy and Biotechnology
• Biomedical Systems Modelling
• Computational Fluid Dynamics
• Design for Sustainability
• Dynamic Analysis of Mechanical Systems
• Fuels and Combustion
• Fuel Cells and Energy Storage

Further information
www.warwick.ac.uk/ug/engineering

We are constantly evolving our courses to keep up with developments in engineering and requirements from industry, so it is important you check our website for the most up-to-date information on module availability.

“Doing a broad based engineering degree at Warwick University gives you a great understanding of how the different disciplines come together and their connection in real world systems.”

Alisdair Irvine, 2nd year Mechanical Engineering Student
HOW WILL I LEARN?

The academics who will teach you work at the forefront of their subjects and are making internationally significant advances, so you’ll encounter the latest thinking and most up-to-date knowledge while you study at Warwick.

We use a variety of teaching methods, ranging from lectures and group tutorials to small-group teaching in laboratories. You are allocated a personal tutor, who normally stays with you throughout your time at Warwick. They will help you get the most from your studies. Computer laboratories loaded with specialist software are open 24/7, helping you undertake work at a time that suits you.

Your timetable will vary from week to week, but typically you will receive 12 contact hours (of lectures and seminars) a week in the first and second years, with labs on top, raising it by a few hours in some weeks. Years three and four will be more project-heavy, and contact hours will come down.

Students are assessed by a mixture of coursework and written examinations. Design-orientated work is assessed by oral presentation, project work and group assignments. Projects are assessed by a variety of methods, including oral presentations, written reports and posters.

Teaching

Assessment

Just a handful of recent breakthroughs made at Warwick

- Pioneering non-invasive procedures to detect cancer
- The world’s first totally sustainable F3 car
- Increasing the performance of photovoltaics to provide lower cost electricity
- Proving a murder case using 3D scanning technology.
OTHER ROUTES TO ENGINEERING

We offer a popular Computer Systems Engineering joint degree with the Department of Computer Science. From 2018 we are also pleased to offer two new entry routes into the School of Engineering: Biomedical Systems Engineering and Systems Engineering.

Biomedical Systems Engineering
H161 (BEng), H163 (MEng)

Biomedical systems engineers apply systems methodology and concepts from other Engineering disciplines to the modelling, analysis and intervention of biomedical problems.

Warwick students become especially adept at mathematical modelling of physiological phenomena and their interactions.

They are especially equipped to work in healthcare, pharmacology or creating devices incorporating (for example) mechanical and electrical components or on large-scale healthcare projects where systems thinking is required to understand the impact of large-scale intervention both culturally and economically.

Please check our website for further details and how to apply for these degrees
www.warwick.ac.uk/fac/sci/eng/study/ug/

Systems Engineering
HH35 (BEng), HH31 (MEng)

Systems Engineering is an interdisciplinary approach to enabling the realisation of complex systems or analysis of interactions (‘systems of systems’ such as biomedical interactions).

Many engineered systems are broader than their association with engineering, incorporating people, processes, information, organisations, hardware, software, and each having needs that vary with time. As well as being able to communicate effectively, and appreciate the view of those from other disciplines, systems engineers can see synergy across these disciplines. This equips them to work on high-level problems facing the world such as challenges to the environment, health, food and security.

Regardless of whether you are admitted onto the BEng or MEng course, you have the option to transfer between the two variants until the end of your second year. You will need to achieve a 2:1 or higher in your second year in order to proceed to the MEng course. If you are studying the 3-year variant of this course you may choose to have your degree awarded as a BEng or a BSc.

Computer Systems Engineering, Department of Computer Science
UCAS Code: G406 (BEng), G408 (MEng)

Computer Systems Engineering is a fully integrated degree taught jointly by the Department of Computer Science and the School of Engineering. The focus of the course is on the design of computer systems and their real-time applications, with an emphasis on pervasive technologies, including wireless networks, mobile devices and sensors, robotics and wearable technology.

The computer systems engineer has the fundamental knowledge and skills of an electronics engineer, but with an emphasis on digital electronics, low-power systems, communications, control and real-time operation.

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They are especially equipped to work in healthcare, pharmacology or creating devices incorporating (for example) mechanical and electrical components or on large-scale healthcare projects where systems thinking is required to understand the impact of large-scale intervention both culturally and economically.

Check our website for further details and how to apply for these degrees
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The computer systems engineer has the fundamental knowledge and skills of an electronics engineer, but with an emphasis on digital electronics, low-power systems, communications, control and real-time operation. The computer systems engineer is also able to apply state-of-the-art computer science methods for the validation and verification of algorithms, fault-tolerant design, code optimisation, and to use high-performance computing techniques to design efficient and robust embedded systems.

You will receive a firm grounding in the principles of computer science, which will be broadened and complemented by the experience of engineering electronic systems. In your first year you will study computer programming, data structures and algorithms as well as system modelling, and electronic devices and circuits. The second year builds on both core disciplines through the study of modules in areas such as digital systems design, advanced computer architectures, software engineering, signal processing and computer networks. In your third year you will undertake an individual project, where you will apply your knowledge to an area of your choice under the supervision of world-leading academics from Computer Science and Engineering.

You will also study embedded systems, sensor networks and mobile communications, robotics, and modern VLSI design.

If you follow the MEng course you will stay on for a fourth year to study more advanced material. You will also participate in an interdisciplinary group project, which will integrate taught material as well as helping you to improve your research and development skills in a team environment.

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GETTING INVOLVED

Our campus is home to students and staff from many different backgrounds and countries. It’s this inclusive and cosmopolitan atmosphere that gives Warwick its vibrancy and characteristic ‘buzz’. We value your individuality and so provide an environment where you can be yourself and form life-long friendships.

Our Students’ Union (SU) supports over 260 student societies and sports clubs so you’ll have many opportunities to meet people, learn valuable skills and try new things. The SU runs a packed programme of events including gigs, karaoke, open-mic nights and pub quizzes. For film fans there is a cinema at Warwick Arts Centre and the Warwick Student Cinema Club screens around 150 films a year.

WarwickTECH
WarwickTECH is a charity that brings together technology makers, creators, innovators, enthusiasts and entrepreneurs to learn new technical and digital business skills, build exciting technology products and solve the most challenging societal problems. The team runs speaker events, networking sessions, panels and hackathons in partnership with tech companies, charities and industry influencers with the aim of building a self-sustaining technology hub at Warwick University.

Engineers Without Borders
Engineers Without Borders Warwick is a branch of the national charity Engineers Without Borders UK.

“You can get involved in a range of activities including construction projects, sustainability talks, inspiring young engineers and international summer placements. We are a close-knit group of like-minded engineers who voluntarily work towards a better future through engineering. We also run a variety of socials including movie nights, bowling, pub quizzes, meals and nights out.”

Ross Torry, EWB Warwick

URSS Opportunities
We are passionate about giving you opportunities to carry out a research project of your choosing during your summer holidays. This is supported through the competitive Undergraduate Research Support Scheme (URSS), to which our undergraduate students can apply - and are often successful. This provides living expenses and the opportunity to work alongside an expert in their field on your research project. It gives an invaluable advantage to those looking to pursue postgraduate study, and adds further value to your Engineering degree.

Engineering Society
With over 700 members, the Engineering Society:

- Coordinates two large conferences during the academic year on ground-breaking topics relating to themes such as Technology and Energy.
- Provides networking opportunities with companies, and industrial and research centre site visits.
- Hosts engaging and fun social events - including balls, recreational activities and practical workshop sessions.
- Enriches your CV and employability with academic and careers help sessions run by the students, for the students.
- Supports you through your time at University, and promotes equal opportunities.

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"The URSS experience was great. It allowed me to explore an idea and discover the freedom that the research environment gives you. It was great to work with the team at the DMTL and, with the backing of the Materials Global Research Priority, to create an autonomous material deposition UAV. At Warwick I’ve also been able to take part in ‘Design Jams’ which are an amazing way to connect with fellow students and work on your own projects. Being able to get help from fellow students and staff with CAD design, Electronics, 3D printing and much more meant I was able to develop loads of my own ideas and learn so many new skills. The sense of community at these events is fantastic and I cannot wait for them to continue with the extra facilities of the new Creative Design Suite.

Thanks to the core engineering and CAD skills I learnt at Warwick, I was offered the opportunity to work part-time for Autodesk during my fourth year. Recently, I had the opportunity to speak about some of my fourth-year group work at a conference for over 2000 people in Berlin.”

Edward Barlow, Fourth-year Mechanical Engineering student

Choosing Warwick will give you the opportunity to maximise your career prospects. Our degrees are attractive to employers both in the UK and internationally. Many sectors value the breadth of knowledge and skills gained here and our well-rounded graduates.

As well as providing a great start to a career in engineering and IT, we can also open doors to accountancy, banking, business and finance opportunities where strong numeracy, interpersonal and team-working skills are highly valued. Nor is it unusual for graduates to go into professions such as teaching or the armed forces.

- 96% of our 2015 Engineering graduates were in work or further study six months after graduation with an average starting salary of £26,600 (Derived from the HESA Destinations of Leavers from Higher Education Survey, carried out approximately six months after successful completion including 2014/15 Engineering Graduates home and EU first degree full-time students).

- Warwick is Top 25 in the world for our reputation with employers (QS World University Rankings 2018).

- We are the No. 1 most targeted University by the UK’s top 100 graduate employers. (The Graduate Market 2017, High Fliers Research Ltd.) Feedback from employers emphasises that, as well as seeing Warwick graduates as motivated and knowledgeable, employers value their broad range of interests outside of their academic studies.

We are building on our successes by introducing more support than ever to find work experience during your degree. Our Placements and Internships Officer is on hand alongside the central Careers and Skills Service, to guide you towards your passion, and support you to find valuable employment opportunities.

Becoming a Chartered Engineer

If you aspire to achieve Chartered-Engineer (CEng) status, a degree from Warwick will see you on your way. The popular route to reaching this goal is to complete a four-year accredited Master of Engineering degree. Alternatively, you can undertake an accredited Bachelor of Engineering (BEng) degree and complete additional training after graduation. All our specialist, and general, Engineering degrees are accredited by licensed professional engineering institutions, such as the ICE, IET, IMechE and/or IStructE.

CAREERS
FEES AND FUNDING

Fees
At the time of publication (06/17) Home/EU fee levels for 2018-19 entry were not yet agreed. Our fees, once confirmed, will be published online. Tuition fees for overseas students have been set for the academic year 2018/19, until the year 2019-20.

For the latest information, please visit: www.warwick.ac.uk/services/academicoffice/finance/fees

Scholarships
Warwick is privileged to attract high fliers and recognises and promotes achievement, talent, ideas, hard work and diversity. We are regularly proud to offer:

- Women in Engineering Programme: encouraging diversity in Engineering - five scholarships of £2,000 are open to all first year undergraduate female students who enrol on Engineering degrees at Warwick.
- Multicultural Scholars Programme - awards of up to £2,000 for UK resident undergraduate students whose families have their origins in Bangladesh, Pakistan, Africa and the Caribbean.
- Merit Scholarships for firm choice Engineering offer holders - up to twenty merit scholarships of £1,500 for undergraduate students. The scholarships are open to all applicants who have made the School of Engineering their first (firm) choice.
- Warwick Engineering International Scholarships - up to ten scholarships of £4,000 for international students. The scholarships are open to all overseas applicants who have made the School of Engineering their first (firm) choice.

To see what opportunities exist for 2018 visit warwick.ac.uk/fac/sci/eng/study/ug/scholarships

Student funding
The University wants to ensure that, wherever possible, financial circumstances do not become a barrier to studying at Warwick. We provide extra financial support for qualifying students from lower income families.
warwick.ac.uk/study/undergraduate/studentfunding

FIND OUT MORE

Visit us
Don’t just take it from us, come and see for yourself what Warwick’s all about. Our University Open Days give you the chance to visit the School of Engineering and WMG, see the facilities, meet staff and students, tour the campus and get a real feel for life at Warwick.

www.warwick.ac.uk/opendays

If you can’t make an Open Day, why not attend a Warwick Visit or a Warwick Talk and Tour? These last about two hours, include a campus tour and give you a quick snapshot of life as a Warwick undergraduate.

You can find full information on opportunities to visit us at www.warwick.ac.uk/ug/visits

We also hold Offer Holder Open Days for successful applicants giving another great opportunity to meet us and get a feel for Engineering at Warwick.

Accommodation
Warwick Accommodation has over 6,450 rooms across a range of well-managed self-catering residences. There is an excellent network of support staff in the Residential Life Team.

warwick.ac.uk/accommodation

Helping you find the right career
As well as specialist Engineering careers advice, you can access support, and opportunities to speak with graduate recruiters, through our Centre for Careers and Skills at any point in your degree and on graduation.

warwick.ac.uk/services/scs

Welfare and support
The University has a comprehensive welfare structure in place to ensure that you can easily access advice and guidance throughout your time here.

warwick.ac.uk/services/supportservices
HOW TO APPLY

Applications are made through UCAS

www.ucas.com

We make offers as soon as we can after your application is received, offering places to those who have met, or are on track to meet, our entry requirements. If you accept our offer and get the required grades in your exams we will confirm your place and look forward to seeing you at the start of your life here at Warwick.

www.warwick.ac.uk/study/undergraduate/apply

Overseas Applicants

The University of Warwick welcomes applications from international students. Local advice about the application procedure is available from all British Council offices and Warwick representatives. We attend exhibitions and make school visits in more than 40 countries.

www.warwick.ac.uk/study/international

This information was correct at the time of printing. Our course and module content and schedule is continually reviewed and updated to reflect the latest research expertise at Warwick.

So, it is therefore very important that you check the website for the latest information before you apply and when you accept an offer.

www.warwick.ac.uk/study/undergraduate/engineering