CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

School of **Engineering**

Undergraduate Degree Programmes

www.cardiff.ac.uk/**engineering**

Welcome

Top 10 in the UK for general engineering

Times Good University Guide, 2023

1st in the UK for electrical and electronic engineering

National Student Survey, 2022

95% of our students are in employment and/or further study, due to start a new job or course, or doing activities such as travelling, 15 months after the end of their course*.

All of our undergraduate degree programmes are accredited by relevant professional engineering institutions.

*Source: Higher Education Statistics Agency, latest Graduate Outcomes Survey 2017/18, published by HESA in June 2020.

Our engineers are making the world a better place.

Welcome to the School of Engineering, where you will embark on an exciting and life-changing educational journey. Choosing the right place to study is crucial, as it can shape your future and allow you to make a significant impact on the world.

As a student, you'll have the unique opportunity to learn from experienced engineers involved in impactful projects. From developing sustainable low carbon-technologies to pioneering new approaches for medical treatments, we're helping to create a better future.

Collaboration is at the core of our student approach. We encourage our students to engage across all disciplines, producing an environment where creative ideas flow freely. By working on real-world projects together, you will gain practical experience and develop essential skills needed to tackle complex problems.

The world is facing some big challenges, and we need a new generation of engineers who are going to use their knowledge and expertise to provide practical solutions. Whether it's harnessing clean energy systems, building smart cities, developing sustainable transport systems, or improving health and well-being through innovative engineering, your contributions can shape a better tomorrow.

Engineering is the heart of what we do. Join us and become the next generation of engineers.

Professor Jianzhong Wu
Head of School, Engineering

Why choose engineering?

What is engineering?

It's a subject focused on problem solving! From designing, testing, or building; engineers help find solutions to some of the world's most complex challenges. Our built environment and infrastructure, developing clean water systems, the processes that manufacture our medicines or the devices we use to communicate, have all been created by leading engineers.

Common misconceptions

Many people think of engineering as an uncreative subject with a deep-rooted focus in maths. However, engineering is much more than maths – it's a creative, dynamic and exciting field open to all. Engineers come up with innovative ideas by thinking outside the box, questioning beliefs and thinking of new approaches. For example, recent student projects have involved a tree climbing robot and a Formula Student racing car!

Is engineering for you?

If you enjoy science and maths, enjoy creative projects and are looking for a meaningful career – definitely! The best part about engineering at Cardiff University is that it's such a broad discipline so you can really cater to your interests. Whether you wish to focus on civil, environmental, architectural, mechanical, medical, electrical or integrated engineering; there is something for everyone.

Dr Michael Harbottle
Director of Recruitment and Admissions

I've had a great experience studying at Cardiff University. I appreciated the freedom to follow my passion and the guidance I received throughout. I have an interest in sustainability and Cardiff has a proven commitment to this through modules and their research. My dissertation was focused on carbon contained within building designs and I enjoyed focusing on a subject I was passionate about.

Student life at Cardiff is also an enriching experience with easily accessed cultural, social, and recreational activities through various societies and facilities. I was involved with rugby societies and found it a great way to make connections and develop friendships. Cardiff's unique location has also been a healthy distraction from studies with beautiful coastlines and breath-taking landscapes of Wales along with its stunning blue and green spaces right on the doorstep. You won't be bored!

Harry Lovell, 3rd year civil engineering student

About our school

Our teaching

Throughout your studies, you'll benefit from first class teaching through a mix of lectures, tutorials, design classes and lab work. You'll have the opportunity to work closely with industry and collaborate with student engineers across all disciplines on real team challenges just as you would as a qualified engineer.

You'll also benefit from problem-based learning, giving you an edge to tackle real-world challenges.

With unrestricted access to our open lab, you'll be able to drop by as frequently as you want to help you confidently master your practical skills.

Our course lecturers are always on hand to help with subject-specific queries and support your learning. Additionally, your designated tutor will also be available to help provide pastoral guidance and to help with any personal development questions.

Our research

Our research is focused on addressing key engineering challenges across the globe. We find solutions to essential environmental, social, health and economic challenges and work with key members of industry. Throughout your time with us, you'll benefit from being taught by expert researchers in their fields and help address real world problems.

Our facilities

Our students have access to state of the art facilities, including:

- Additive manufacturing laboratories
- Building information modelling and virtual reality laboratory
- Durability and characterisation laboratories
- Environmental engineering characterisation laboratories
- Gas turbine testing
- Hydroenvironmental research centre
- Lightning laboratory
- Musculoskeletal biomechanics research facility
- Structural performance laboratory

Locations

You will study in the Queen's Buildings located in the heart of Cardiff. You will benefit from easy access to the city centre, main transport hubs, the rest of the university, student halls of residence and the Students' Union. We have a wide selection of spacious and well-equipped teaching and research laboratories, lecture theatres, computer suites, our own restaurant, coffee shop and award-winning library. We also have large, flexible learning spaces, where students can engage in group learning, single study, or socialise with friends.


CLEER

Your learning journey

Types of degree programmes

MEng (Hons) programme - an engineering degree leading to a higher qualification than the traditional BEng programme and takes four years to complete. The MEng programme offers a quicker and more direct route to achieving the status of a Chartered Engineer.

BEng (Hons) programme - the traditional way of studying engineering and involves three years of study in your chosen subject.

Year in industry programme - a sandwich programme enhancing either the MEng or the BEng programme with an additional year of industrial placement. This placement takes place after your second year and you will be paid a salary.

Architectural engineering student George Kenyon undertook a year in industry at an engineering consultancy, Cass Hayward, in Chepstow.

I received a lot of support from the university to secure my placement

The university did an amazing job; they guided me though weekly lectures and workshops where the whole process was detailed, and I had chance to practice things such as CV writing and interviews. They gave me the contact details of previous employers who had been involved in placements and constantly provided support in how to communicate with these employers.

I was able to work independently on real design projects

It was a very trusting company, they did not micromanage but instead allowed me free rein on working on countless projects without direct supervision, I lost track of the amount of bridges I either designed or verified for other companies. My first project was the design of 6 different temporary bridges from 10m-30m spans using LUSAS software.

My placement helped me get my graduate position

I am currently employed part time as a Structural Engineer alongside my final master's year, and I can say from first-hand experience that my placement really helped with attaining this job. From giving me confidence in interviews to giving me real life projects and scenarios to talk about, it gave me a great opportunity to show how I was competent not just in theory but in practice. Additionally, the company I chose does not employ graduates without a placement as they consider this the minimum requirement.

I'd definitely recommend a placement year

It's an amazing way to break up your degree and take a little break where you get a chance to see what you're working towards. It's great for students who may need financial help too as it's a good chance to earn some money mid-course. Additionally, you can get your name out there and start making contacts which can lead to jobs later when you graduate.

Foundation year

If you would like to become an engineer, but you do not have the appropriate mathematical qualifications, we have a programme to suit your needs.

The foundation year is designed to give you the necessary basic knowledge to enable you to cope with an engineering degree programme. Although the foundation year only lasts for one year it will allow you to progress to the first year of your chosen degree programme.

If you are a home fee-paying student on the foundation year, you will qualify for mandatory student support (means tested assistance with tuition fees and student loan) to cover all years of study at Cardiff.

What qualifications do I need?

The programme is aimed at a wide range of potential applicants. For instance, if you have a GCSE pass in mathematics and good A-level passes in non-mathematical subjects, the foundation year would be an ideal route for you to enter engineering. Likewise, if you have a BTEC or a similar vocational qualification, an overseas baccalaureate or school leaving certificate that is not recognised for direct entry to one of our degree programmes, then the foundation year could be just what you're looking for.

Special consideration is sometimes afforded to mature students who show the drive, commitment and potential necessary to complete the foundation year and continue further to gain a degree. In these cases, formal qualifications may be waived after consideration of vocational experience, although some evidence of mathematical and scientific potential would need to be shown.

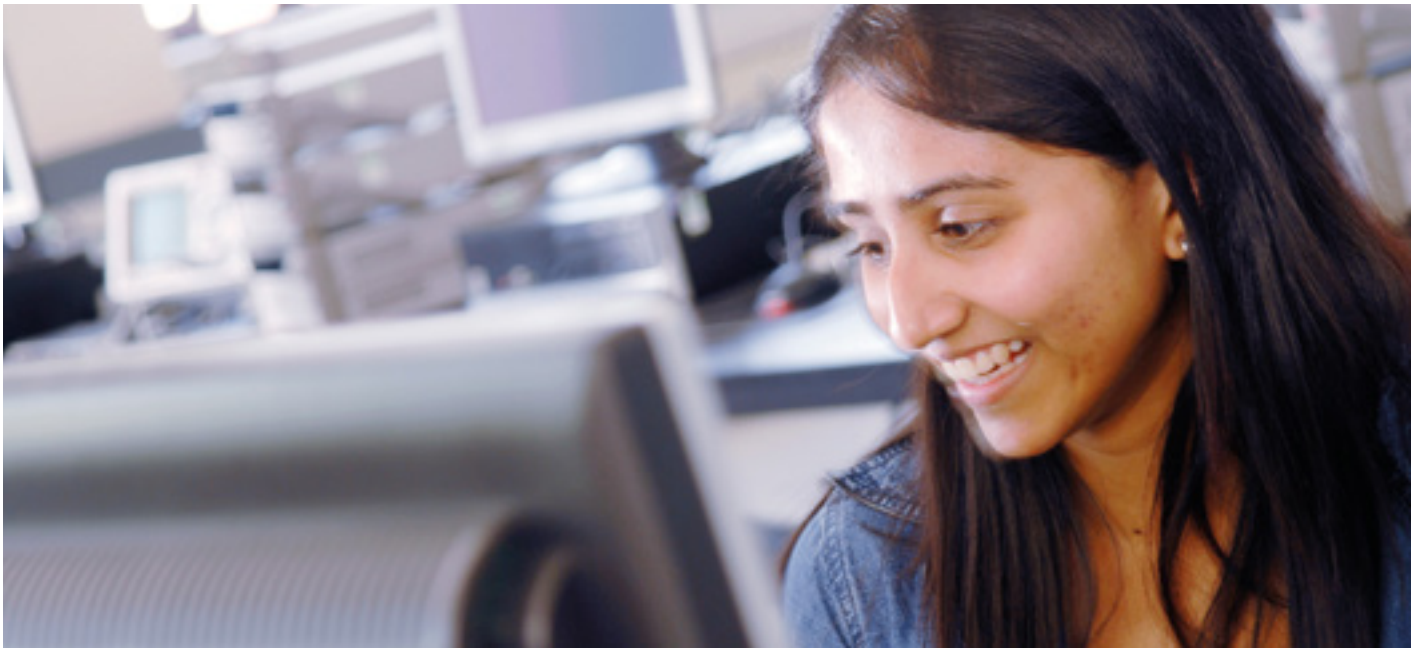
Programme structure

The programme is designed to expose students to a broad spectrum of engineering through modules consisting of lectures, tutorials, and case studies. These include aspects of mathematics, physics and information technology that are relevant to engineering. Assessment is by project work, continuous assessment, and end of semester examinations.

How to apply

When completing your UCAS application, as well as using the H101 course code, please indicate the engineering degree programme you wish to study following the foundation year.

Hear from architectural engineering student George Kenyon about his foundation year



The International Study Centre

Our foundation programme for international students provides an alternative route of entry onto our undergraduate courses.

This one-year academic programme is specially designed to give you the academic and English language skills you need to enter undergraduate study in engineering.

Run in partnership with Study Group, our International Study Centre offers a range of foundation programmes designed specifically for students looking to progress onto our courses.

The International Study Centre is based in the centre of our campus and will provide you with academic and study skills preparation, as well as access to the wide range of support and academic facilities available to all our students.

Guaranteed entry and on-campus accommodation

If you successfully complete your programme and achieve the required grades, you are guaranteed entry onto a wide range of our programmes. All students studying at the International Study Centre will also have access to Cardiff University's on-campus accommodation, as long as you apply by the relevant deadlines.

NCUK

The NCUK international foundation year can be accepted for entry into our undergraduate courses.

If you successfully complete the NCUK international foundation year, you will then have the opportunity to apply to Cardiff University where applications will be assessed on a case by case basis.

As part of the foundation year, you will take language and study skills modules to help you succeed when you come and study with us.

Other partners

We work in partnership with a number of other UK and international organisations who provide pathway programmes which will be considered for entry onto a range of our degree programmes. If you are studying on a foundation or pathway programme and want to know if you would be eligible to apply to Cardiff University, please get in touch.

Improving your English

If you have met the academic requirements for your course but need to improve your English language level, we offer a range of English language courses to help you meet our English requirements.

How to apply

Full information about the programme and an application form can be found at: **cardiff.ac.uk/study/international/foundation-and-pre-masters-programmes** or **email international@cardiff.ac.uk** or call **+44 (0)29 2087 4432.**

Listen to international civil engineering student Azan Ahmed speak about his foundation year experience

Our degree programmes

Architectural engineering

Discover the artistry of structures. Our students embark on a journey of innovation, pushing the boundaries of imagination and construction.

Our architectural engineering degrees provide an in depth understanding of civil engineering with a specific focus on structural engineering and the built environment. You will discover the essential elements of structural engineering and an understanding of the interaction between engineering design, architectural requirements, and environmental factors. You will also learn more about architecture, municipal engineering, building services, construction technology, and management with particular emphasis on studio work, design projects and case studies.

Our MEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation, and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Architectural Engineering (MEng)
UCAS code: H294
Duration: 4 years

Architectural Engineering (BEng)
UCAS code: H292
Duration: 3 years

Architectural Engineering with a Year in Industry (BEng)
UCAS code: H293
Duration: 4 years

Architectural Engineering with a Year in Industry (MEng)
UCAS code: H295
Duration: 5 years

Hear from one of our students...

I wanted to explore the world around me

For a long time, I had been interested in exploring how the world around me worked. We live in complex societies and it's incredible to see how we have achieved this. Yet, it is also an industry that needs to rapidly change to achieve its climate targets whilst continuing to improve the lives of many around the world. There is a huge potential to have a positive impact on our societies, and I saw engineering as a direct way of implementing this change.

The variety of subjects will be reflected in your career

The part I have enjoyed most about the course is the sheer variety of the subjects, as you study fluid behaviour, soil mechanics, structures, computer skills and practical implications. This makes it entertaining and there will be subjects you like less and others more, and in the final years you can choose those you would enjoy most. This variety is also reflected in the many different opportunities you have afterwards for your career.

The university provides plenty of facilities to support studies

The access to labs is a great way to put into practice all the theoretical knowledge we learn in courses. Civil engineering requires computer skills and dedicated programs, and we had access to a large variety of software that are also used in industry. Having access to a library in the engineering buildings provided a peaceful place to revise and a perfect place to organise many group meetings, particularly in the final years.

I would absolutely recommend this degree

It is a fantastic degree that enabled me to get all the foundations of civil engineering, whilst giving me input into other disciplines you would work with in industry, such as architects, BIM (digital modellers) and mechanical engineers. There are many interesting subjects to choose from and fun projects to work on where you have the freedom to obtain goals through different methods. For example, in my third year, we had a small project to design a structure that

would be used for lecture and wellbeing facilities. Some students created digital models, some sketched by hand their visions and I created a small physical model with toothpicks and cardboard!

Giorgio Gatti, 4th year architectural engineering student

Civil engineering

Help shape our day-to-day existence. Our students become civil engineers that construct and improve the physical environment across the globe.

Civil engineers are concerned with the planning, design, construction and maintenance of highways, airports, docks and harbours, coastal defences, irrigation systems, essential municipal services (such as water supply, drainage, and sewage disposal) and structural work including buildings, bridges, dams, reservoirs and power stations.

Our civil engineering degrees provide a thorough understanding of civil engineering theory, backed up by practical application through laboratory and research work, field courses and design classes. Our course content has been designed with input from leading organisations to ensure you gain hands-on experience using current commercial tools and techniques.

Our MEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Civil Engineering (MEng)

UCAS code:	H207
Duration:	4 years

Civil Engineering (BEng)

UCAS code:	H200
Duration:	3 years

Civil Engineering with a Year in Industry (BEng)

UCAS code:	H201
Duration:	4 years

Civil Engineering with a Year in Industry (MEng)

UCAS code:	H208
Duration:	5 years

Hear from one of our students...

I wanted to contribute to society

I am deeply passionate about building designs and chose to study civil engineering as I wanted to understand the world about us through science! This degree lets me contribute to society while providing meaningful and exciting problems to solve.

I enjoy the relevance of my course

What I enjoy most about my course is its direct relevance to real-life situations. Through coursework, practical assignments, and hands-on experiences, I have gained a deeper understanding of how civil engineering principles are applied in creating and maintaining the built environment.

The most interesting project I've worked on was a spaghetti bridge!

So far, the most interesting project has been designing and constructing a spaghetti bridge with a partner. We applied our civil engineering knowledge to create a strong and efficient design. This project not only enhanced my technical skills but also improved my teamwork and communication abilities.

I would definitely recommend studying civil engineering to future students

Yes, pursuing a degree in construction is incredibly rewarding and intellectually stimulating. It constantly presents new challenges, ensuring that you are engaged and learning valuable skills applicable to your future career paths. One of my primary aspirations is to contribute to the construction industry, to create something significant that extends beyond my individual self. I believe that by leaving my mark in this field, I can make a meaningful impact on the world.

Azan Ahmed,
1st year civil engineering student

Did you know that as a civil engineering student you can take part in field trips?

Scan the QR code to hear more from Azan about his experience

Civil and environmental engineering

Unleash your passion for building a greener future. Our students tackle real-world challenges and forge careers at the forefront of sustainable development.

Civil and environmental engineers tackle some of the major risks to societies and economies such as sustainable waste management or confronting environmental pollution.

Our civil and environmental engineering degrees provides you with the core engineering skills of design and analysis and a thorough understanding of ways to integrate economic and practical solutions. You will learn about the legal, social, and ethical aspects of engineering, with the emphasis being firmly placed upon environmental responsibility and control.

You will have the opportunity to apply what you learn in lectures in practical design classes, research projects, laboratory classes and field courses. Your learning is also developed through site visits, presentations, and specialist speakers from industry.

Our MEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation and the Institute of Highway Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Civil and Environmental Engineering (BEng)

UCAS code:	H221
Duration:	3 years

Civil and Environmental Engineering (MEng)

UCAS code:	H226
Duration:	4 years

Civil and Environmental Engineering with a Year in Industry (BEng)

UCAS code:	H222
Duration:	4 years

Civil and Environmental Engineering with a Year in Industry (MEng)

UCAS code:	H224
Duration:	5 years

Hear from one of our students...

I'm interested in combining environmental issues with engineering

I decided to choose civil and environmental engineering because I really wanted to create a positive impact on the world. I was really interested in combining real life environmental issues with engineering to look at reducing greenhouse gas emissions and the global warming crisis that we are currently facing.

Every week there is something new to learn

I really enjoy the challenging aspect of my course! Every week there is something new and exciting to learn and I love that no week is the same. It really teaches you a different way of thinking and learning and I love that I get to figure that out with some of my classmates. I also really enjoy some of the group work we get to during our course, I find that everyone always brings something new to our projects and I love the collaboration that it brings.

I get challenged to go beyond my comfort zone

The hotel design project in the second year of my degree was a good opportunity to have a real go at designing a large building to scale. It was something that really challenged me and pushed me out of my comfort zone, I learned a lot about the calculations that were required to produce a building, and lots of other different factors that I had to consider when designing it.

I've learnt so many different aspects of engineering

I would definitely recommend it! My course has taught me so much about many different aspects of engineering, from some of the complicated math that we have to learn, to knowing about different strengths in soils, and biodiversity in lakes! I would really recommend this course to anyone who enjoys problem solving, and learning about the environment in general! Some

of the things that I have learned have not only been invaluable to my course, but also outside of university in general.

Amber Levey, 2nd year civil and environmental engineering student

Electrical and electronic engineering

Spark innovation and power the world of tomorrow. Our students transform lives through electrical advancements.

Studying electrical and electronic engineering puts you at the centre of a vibrant and fast-moving discipline of relevance to industries such as electronics, information technology, manufacturing, energy generation and supply, transport, and communications.

Our electronic and electrical engineering degrees explore the small-and large-scale science and applications of electricity. You will study information technology and professional engineering studies, which will help you to develop your analytical, computational, and experimental skills, as well as vital oral and written communication skills.

You will be eligible to apply for external scholarships from the UK Power Academy and UK Electronic Skills Foundation UKESF.

Our MEng degree programmes are accredited by the Institution of Engineering and Technology on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Engineering and Technology on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Electrical and Electronic Engineering (BEng)

UCAS code:	H605
Duration:	3 years

Electrical and Electronic Engineering (MEng)

UCAS code:	H601
Duration:	4 years

Electrical and Electronic Engineering with a Year in Industry (BEng)

UCAS code:	H606
Duration:	4 years

Electrical and Electronic Engineering with a Year in Industry (MEng)

UCAS code:	H600
Duration:	5 years

Hear from one of our students...

My passion for engineering was handed down to me

My passion for engineering came from my grandfather who was also an electrical engineer. From a young age we would work together on a wide range of projects from woodworking to basic electronics. This combined with a passion for learning and stem subjects in particular drew me to study engineering.

I've gone on to secure a graduate job

Throughout the duration of my undergraduate, I would say I have enjoyed the DMT (Design Make Test) project the most. The project consisted of working alongside Babcock International to create a product that teaches children about buoyancy and to complete the project we designed a clear model submarine. I have also since gone on to secure a graduate scheme with Babcock off the back of enjoying this project and the company.

I had brilliant support from my tutor

The relationship I built with my personal tutor during my time here has been invaluable. This enabled me to have great conversations about my options after university but also about the options within the university such as postgraduate courses. I also benefitted massively from the career's fairs that the engineering school hold regularly and speaking to the companies really helped me to decide what I wanted to do after my degree.

This course provides opportunities all over the world

Not only is it a course that provides opportunities all over the world but the number of well-paying jobs available straight after university is huge. I also strongly believe there is no other course like engineering in terms of how you learn to approach situations and solve problems, something that is truly unique to engineers.

Aaron Davies, 4th year electrical and electronic engineering student

Integrated engineering

Explore multiple engineering disciplines. Our students become well-rounded engineers gaining a competitive edge in the job market.

Integrated engineering is a multidisciplinary degree built around electrical, electronic, and mechanical engineering, which aims to produce experts in the areas of manufacturing, mechatronics, computer aided design, and renewable energy. Your broad knowledge of various aspects of engineering will ensure you can interact with engineers from all the traditional engineering disciplines in any multidisciplinary environment.

Students are eligible to apply for external scholarships from the UK Power Academy and UK Electronic Skills Foundation UKESF (Cardiff University is a member of both schemes).

Our MEng degree programmes are accredited by the Institution of Engineering and Technology and the Institution of Mechanical Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Engineering and Technology and the Institution of Mechanical Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Integrated Engineering (MEng)

UCAS code:	H113
Duration:	4 years

Integrated Engineering (BEng)

UCAS code:	H110
Duration:	3 years

Integrated Engineering with a Year in Industry (BEng)

UCAS code:	H111
Duration:	4 years

Integrated Engineering with a Year in Industry (MEng)

UCAS code:	H114
Duration:	5 years

Hear from one of our students...

I wanted to study a degree that encompassed my interest

Looking at courses I was unsure whether I wanted to study solely electrical engineering or mechanical engineering. I wanted to study a degree that encompassed my interests incorporating sustainability, renewables as well as electronics and robotics. Integrated achieves this! Also integrated engineering features dual accreditation in mechanical and electrical engineering which is not that common amongst mixed disciplinary courses.

I received great support from my dissertation supervisors

Project work, the year two group project and dissertation were by far the most challenging but also most enjoyable parts of the course. The dissertation was great as it allowed me to undertake a project into a specific aspect of energy systems that I was interested in. My supervisors were both extremely helpful in guiding me whilst still giving me freedom to take the research where I wanted.

I got to construct a small scale electrical vehicle...

I enjoyed constructing a small-scale electrical vehicle in second year! The project helped me to develop software skills, time management skills, leadership and communications skills and was a great way to get to know other students with similar interests. This was my first time undertaking such an ambitious project and was a great test of my practical abilities when researching and building components.

The course has helped me figure out what I want to do as an engineer

Yes, the course has helped me a lot in figuring out what I want to do as an engineer going forward and helped me develop numerous skills. As a first year I

was unsure of the sector I wanted to go into. Studying at Cardiff I have decided power systems and renewable energy were the sectors that aligned best with my own beliefs and interests. This was stimulated by my Power Academy scholarship with the Institution of Engineering and Technology where I worked with National Grid.

Jack Tyler-Chamberlain, 4th year integrated engineering student

Mechanical engineering

Tackle real-world problems, gain exposure to cutting-edge technology and learn from state-of-the-art facilities. Our students develop into mechanical engineers of the future.

Mechanical engineering is a wide-ranging discipline which involves the design, construction and operation of a huge array of products and processes. Mechanical engineers combine imagination with modern technology to offer innovative solutions to meet the complex requirements of society and industry.

Our mechanical engineering degrees explore areas such as thermodynamics, engineering dynamics, fluid mechanics, solid mechanics, and business management. You will also gain transferable skills in areas such as communication, experimentation, computing, laboratory work and design.

You will have the opportunity to join Cardiff Racing and participate in the design, development, construction, and testing of our Formula Student racing car.

Our MEng degree programmes are accredited by the Institution of Mechanical Engineers and the Energy Institute on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Mechanical Engineers and the Energy Institute on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Mechanical Engineering (MEng)

UCAS code:	H302
Duration:	4 years

Mechanical Engineering (BEng)

UCAS code:	H300
Duration:	3 years

Mechanical Engineering with a Year in Industry (BEng)

UCAS code:	H301
Duration:	4 years

Mechanical Engineering with a Year in Industry (MEng)

UCAS code:	H307
Duration:	5 years

Hear from one of our students...

I like the problem solving side of engineering

I chose to study mechanical engineering through finding what I enjoyed studying at school. After enjoying maths and physics as well as biomechanics, I knew it would be a great choice. The problem solving and physical nature of engineering also linked with things I liked to do outside of study.

I enjoy learning about things people take for granted

During the mechanical engineering course, I enjoyed learning in depth theory about things most people take for granted every single day. I also enjoyed being able to apply what is learned in projects.

I've worked on several interesting projects

One of the interesting projects was developing, designing, and manufacturing a rig to mimic a tendon being articulated over a surgical screw. This allowed us to test the theory on whether tendons will rupture after surgery that require plates and screws.

The course is broad enough to be applied to a range of careers

If you have an interest in engineering and applied math, I recommend studying this course! The course has ample opportunities to get stuck in and is broad enough that the skills can be applied to a very wide variety of engineering roles.

Lewis Pick,
5th year mechanical engineering student

Did you know our mechanical engineering students work on a big final year project?

Scan the QR code to listen to Giles speak about his robot called 'Penny'

Medical engineering

Merge the world of medicine and engineering. Our students revolutionise healthcare solutions to improve the lives of people across the world.

We aim to produce a highly competent engineer who could pursue a career either in clinical/bioengineering or engineering fields outside medicine.

You will acquire fundamentals in a broad range of engineering disciplines, including mechanical, electrical, and electronic engineering, and anatomy and physiology. You will be introduced to modules designed to apply engineering principles to the medical field, such as biomechanics, materials, and manufacture. You will study clinical engineering and biomechanics and will use fundamental engineering skills to solve medical engineering problems, especially in your project.

Teaching is delivered by a dedicated team of research-active academic staff, and some lectures will also be delivered by colleagues from Cardiff University's School of Biosciences and the School of Medicine, as well as the Cardiff & Vale NHS Trust.

You will have the opportunity to engage with professionals from healthcare providers such as the Cardiff and Vale Orthopaedic Centre, Cardiff and Vale University Health Board, and the Medical Physics Department.

Our course content is informed by industrial collaborations with organisations like Zimmer Biomet, Simpleware and Arthritis Research UK. Many of the guest lecturers are linked to health care providers such as the Cardiff and Vale Orthopaedic Centre, Cardiff and Vale University Health Board, and the Medical Physics Department.

Our MEng degree programmes are accredited by the Institution of Mechanical Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Our BEng degree programmes are accredited by the Institution of Mechanical Engineers on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer and partly meeting the academic requirement for registration as a Chartered Engineer.

Our degrees:

Medical Engineering (MEng)

UCAS code:	H1BV
Duration:	4 years

Medical Engineering (BEng)

UCAS code:	H1B8
Duration:	3 years

Medical Engineering with a Year in Industry (BEng)

UCAS code:	BH99
Duration:	4 years

Medical Engineering with a Year in Industry (MEng)

UCAS code:	HB99
Duration:	5 years

Hear from one of our students...

I wanted to make devices that helped people

I've always been interested in science and technology, but I got into a project at school which made prosthetic limbs and decided that I wanted to be able to make devices that helped people, which is essentially what medical engineering is all about.

You get to work with like-minded people

I enjoyed the group projects the most during my course. You work with like-minded people, who all have an interest in creating something good that could make a difference to someone's life. I also found that my group members always offered help with the workload if you are struggling, so it creates a support system that I found invaluable.

The work I'm doing for my project is so fulfilling

I recently finished a project creating an optimised socket for a prosthetic for a lower leg amputee. I've always been interested in prosthetics and so being able to work on something that I have wanted to work with was a great opportunity.

At the moment forming a prosthetic for each amputee is a trial and error process, so being able to have an influence on the changes in the procedure that would ultimately heavily improve an amputees quality of life is so fulfilling.

The knowledge you get is invaluable

I would absolutely recommend this course...you will learn aspects of different types of engineering and all the knowledge gained is invaluable if you want to go into the medical field.

In the future, I personally would love to design medical devices, like prosthetics and surgery equipment for an orthopaedics focused company. This passion has only grown throughout my degree in Cardiff, and medical engineering has taught me how wide the field is, and how many types of devices I could work with, from hip implants to MRI scanners.

Bethan Soanes, 4th year medical engineering student

Scan the QR code to learn more from Bethan about her experience

Thinking ahead...what can you do with a degree in engineering?

Unlock a world of career opportunities with: architectural, civil and environmental engineering

Architectural engineering

From designing inspiring structures to improving energy efficiency and sustainability, architectural engineering offers a diverse range of possibilities.

Our graduates thrive in civil and structural engineering fields, working with renowned consultancy and contracting firms. They hold roles as graduate civil and structural engineers, as well as building design engineers.

Many of our alumni have found success in leading companies such as Arup, Atkins, Capita Symonds, and Ramboll.

Our graduates have also ventured into diverse sectors like finance, media, and marketing, securing positions at organisations like Deloitte, PwC, and Virgin.

Civil engineering

Forge a career dedicated to transforming communities and shaping the world we live in.

Join our graduates who are making a difference, employed by design consultancies, construction contractors, utilities, and government bodies.

Our graduates embrace roles such as civil engineer, site engineer, and design engineer, driving innovation and progress.

Working with industry such as Aecom, Meinhardt Group, Morgan Sindall, and Atkins Group; our graduates are leading in their fields.

Other graduates take on exciting horizons of finance, media, and petrochemical sectors with positions awaiting them at organisations like Deloitte, PwC, Virgin, and Shell.

Civil and environmental engineering

With the pressing need for sustainable solutions, our graduates are helping to make a profound impact on the health of our planet.

Our graduates are employed in consultancies, construction contractors, utilities, and local and national governments. They are working in roles such as the design, operation and management of water treatment plants, flood defence management, contaminated land remediation and reclamation, integrated transport systems and general civil engineering consultancy.

You might meet them working in leading companies such as VolkerWessels UK, Mott Macdonald, and Sir Robert McAlpine. Some have chosen to work in the financial, media and petrochemical sectors with destinations including Deloitte, PwC, Virgin and Shell.

Many of our graduates choose to pursue postgraduate study. There are a range of taught or research postgraduate opportunities available for architectural, civil and environmental engineering.

Find out more about postgraduate study

Meet Thomas...

Graduate in civil and environmental engineering

Now working as a Water Engineer, at WSP

I would definitely encourage everyone to explore the possibility of a career in civil and environmental engineering

The opportunities for employment are great and it is a really rewarding and engaging career path, where every day is different, and you get to take on a wide range of projects.

Studying at Cardiff University helped my career in a multitude of ways

The culture at Cardiff encouraged students to ask questions and to converse and collaborate in group sessions. The skills I learnt from this have been invaluable in a professional environment. Furthermore, I found that the lecturers at Cardiff were inspiring and led me to decide to follow a career in engineering.

Since I left Cardiff, I took some time out before starting my career

There are lots of options for off-cycle start dates (hiring outside the busy recruitment period) which I took advantage of. I am now on a graduate scheme working as an engineer with a focus on water. I have started working towards chartership and I'm set up to make good progress in my career.

I love the variety that comes with my role

Whilst I am still very new, I have managed to get involved with many different projects. I never know what will be presented to me to help with and I think that is really exciting. I also like the social aspect of my role, there are many opportunities to meet colleagues outside of the office and there are always events being thrown by social committees.

During my degree there were many modules that contained project work

They've really prepared me for the role I am currently in. As a water engineer, I think that I found the water based modules more useful but I am sure that if I had followed a different career path, I would have found that other modules would have been just as beneficial for experience.

Unlock a world of career opportunities with: electrical and electronic engineering

Our graduates succeed across a wide range of industries, making significant contributions in electronics, automotive, IT, telecoms, manufacturing, power, transport, utilities, and construction.

With diverse roles such as electronics engineer, electrical engineer, network engineer, systems analyst and lighting engineer, our alumni are advancing in organisations including Tata Steel, Network Rail, Rolls Royce, UK AEA, Saudi Airlines, Collins Aerospace, and the National Grid.

Other graduates have also forged exciting paths in sectors like finance, media, and marketing, landing positions at prestigious companies like Chanel, PwC, and Virgin.

Many of our graduates choose to pursue postgraduate study. There are a range of taught or research postgraduate opportunities available for electrical and electronic engineering.

Find out more about postgraduate study

Meet Peter...

Graduate in electrical and electronic engineering

Now working as a HV Power Systems Engineer at Arup

Hear more from Peter about his experience

I wholeheartedly encourage pursuing a career in electrical and electronic engineering

The field offers a multitude of opportunities for personal and professional growth, as well as the chance to make a real impact on society. The skills acquired are highly sought after in today's job market, opening doors to a truly wide range of industries. It also intersects with other engineering disciplines enabling interdisciplinary collaborations and a variety of work.

The university's curriculum equipped me with the ability to independently solve problems

These skills, along with analysing results and writing concise reports to a publishable standard, have proven invaluable in my professional journey as a HV power systems engineer, allowing me to communicate complex ideas to clients more effectively.

After graduation from university, I joined Arup and my career has seen significant progress and exciting opportunities

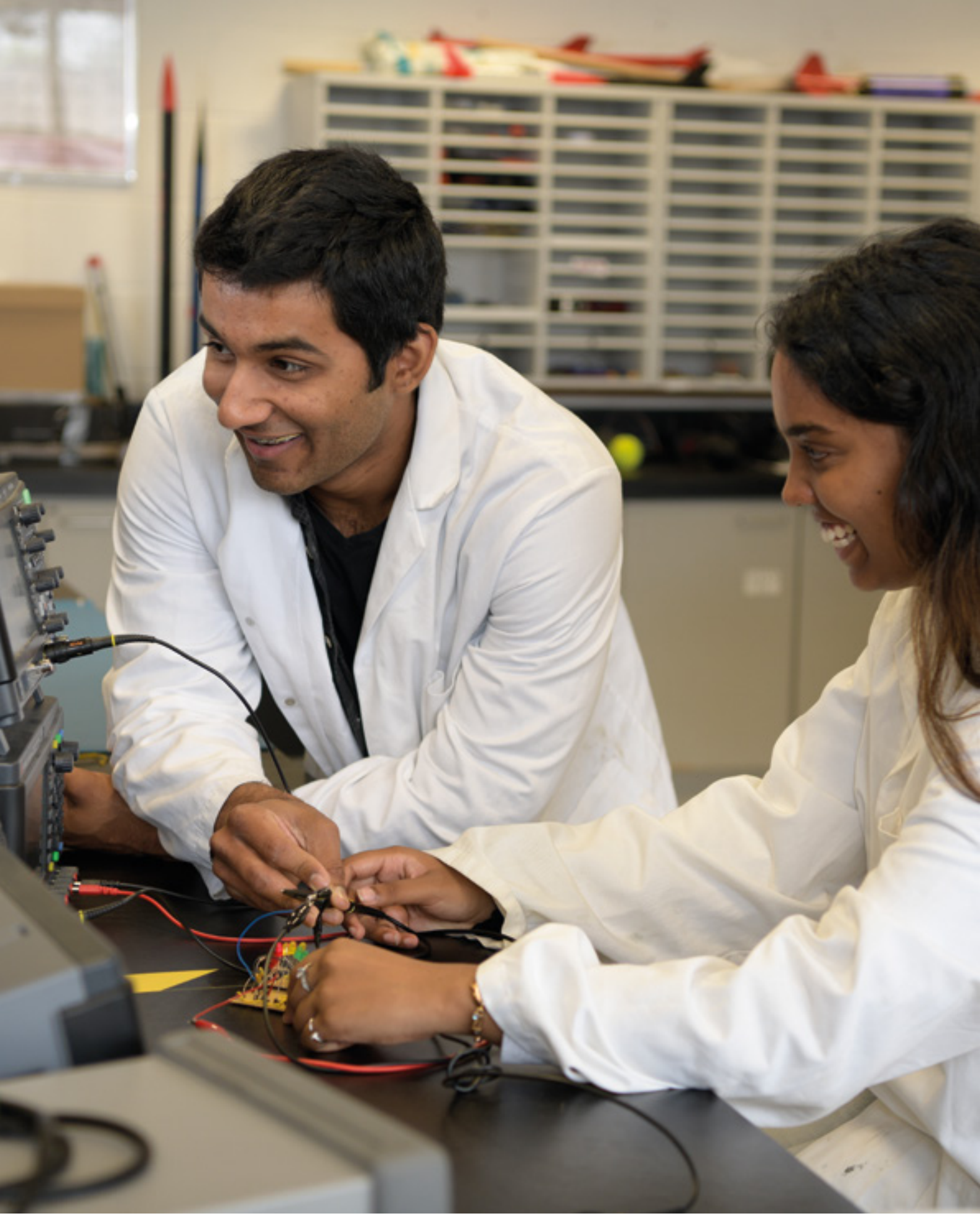
With a continued drive for innovation and a passion to foster inclusivity in engineering, I have been fortunate to work on remarkable projects. I have been involved in the Transpennine Route Upgrade (TRU), contributing to the electrification of rail in the north as well as carrying out feasibility studies for tram charging stops in Cardiff and tram battery solutions for a tram transit project from Cardiff Central to Cardiff Bay.

I am currently working on East Anglia Three

It's a 1.32 GW Offshore Wind Farm located off the coast of Norfolk. This project, set to commence production in 2026, is truly exhilarating as it will generate clean energy to power 1.3 million UK homes. Being involved in a real-world wind farm project of this scale feels surreal and immensely fulfilling.

I did many projects during my degree that greatly influenced my career path

A notable project was the Severn Estuary wind farm feasibility study, where I had the opportunity to work alongside students from various disciplines. The experience felt very real, specifically when working with an interdisciplinary group with different roles on the same project. Everybody was bringing a different discipline and needs to the table. This made me understand optimisation for wind farms', its complexities and sparked my fascination with the field, inspiring my decision to pursue a career in offshore wind farms and HV power systems.



Unlock a world of career opportunities with: mechanical and medical engineering

Mechanical engineering

Our graduates help to shape the future of industries and lead on new advancements.

A substantial number of mechanical engineering graduates work in product design for the automotive, aeronautical, communications and energy industries. Others are employed in medical engineering, some are exploring the globe within the petrochemical industry and others are delving into development, production or general management.

Our graduates excel in esteemed organisations like Vantage Power, General Electric, BP, Ricardo, and Triumph Motorcycles. Some students choose to use their degrees to explore diverse disciplines such as the Forces, financial sector, the legal profession, chartered accountancy, or computing.

Medical engineering

As a graduate medical engineer, opportunities are available both in the medical and broader mechanical engineering sectors. Many medical engineer graduates join organisations like Johnson and Johnson, Huntleigh Medical, and the National Health Service. Our alumni often embark on a rewarding career in the healthcare sector, shaping the future of patient care.

Graduates in medical engineering are highly sought after in various unrelated fields too such as accountancy, finance, government, and education.

Many of our graduates choose to pursue postgraduate study. There are a range of taught or research postgraduate opportunities available for mechanical and medical engineering.

Find out more about postgraduate study

Meet Jordan...

Graduate in mechanical engineering

Now working as a Graduate Engineer at Jaguar Land Rover

I would definitely encourage others to study mechanical engineering

There are huge opportunities to develop as engineers with academic staff who are more than willing to facilitate this. As cliché as it might sound, a student will get out of the degree exactly what they put in. If you are someone who wants to truly innovate and improve, then there are ways to achieve this at Cardiff, for sure.

Cardiff University was really good at providing meaningful opportunities

The mechanical engineering degree with year in industry was structured to develop key skills that are highly sort after in the working world. The placement year was great preparation for myself now that I am working towards professional accreditation in the form of chartership.

Since graduating from Cardiff University, I have been employed by Jaguar Land Rover

I'm a Graduate Engineer on their Graduate Training Scheme. During this time, I have completed my first placement under the Chassis team and I am currently on my second placement in Off-Road Capability.

My current role gives me an opportunity to experience the vehicles we're working on through various calibration and test events

It's been a great opportunity to appreciate the collaborative efforts from different commodities in producing successful products.

Throughout my time at Cardiff University I was part of the Formula Student team

In my final year I took on the position of overall Team Lead. In itself, this was invaluable experience in both leadership, project management and people skills. The team is set up to be accessible to all students at Cardiff University, not just those in engineering. This is very much representative of the kind of structure you can come to expect in industry. It provided me with another great opportunity to experience an industrial style working environment with the support from the academics, should I have needed it.


AIR 1
AIR 2
X11

Entry requirements

To be considered for entry onto one of our undergraduate courses, please apply through UCAS.

Typical entry requirements

These typical requirements are for guidance. Please check our website for the latest information:
www.cardiff.ac.uk/ugcourses

A-levels

BEng: AAB-BBB, MEng: AAA-ABB.
Must include maths at A-level.

WBA

The Welsh Baccalaureate Advanced Skills Challenge Certificate will be accepted in lieu of one A-level (at the grades listed above), excluding any specified subjects.

IB

For BEng, this is 31-34 overall or 665-666 at higher level (to include HL maths).

At MEng, it's 32-36 overall or 665-666 HL (to include HL maths).

BTEC

DD in BTEC Diploma in any subject and A-Level maths at grade A or B depending on course.

Other

Applications from those offering alternative equivalent qualifications are welcome, as are those who may have other relevant work/life experience.

Specific subjects

A-level maths (or equivalent). Also grade C/ grade 4 or higher in GCSE maths and English (or equivalent).

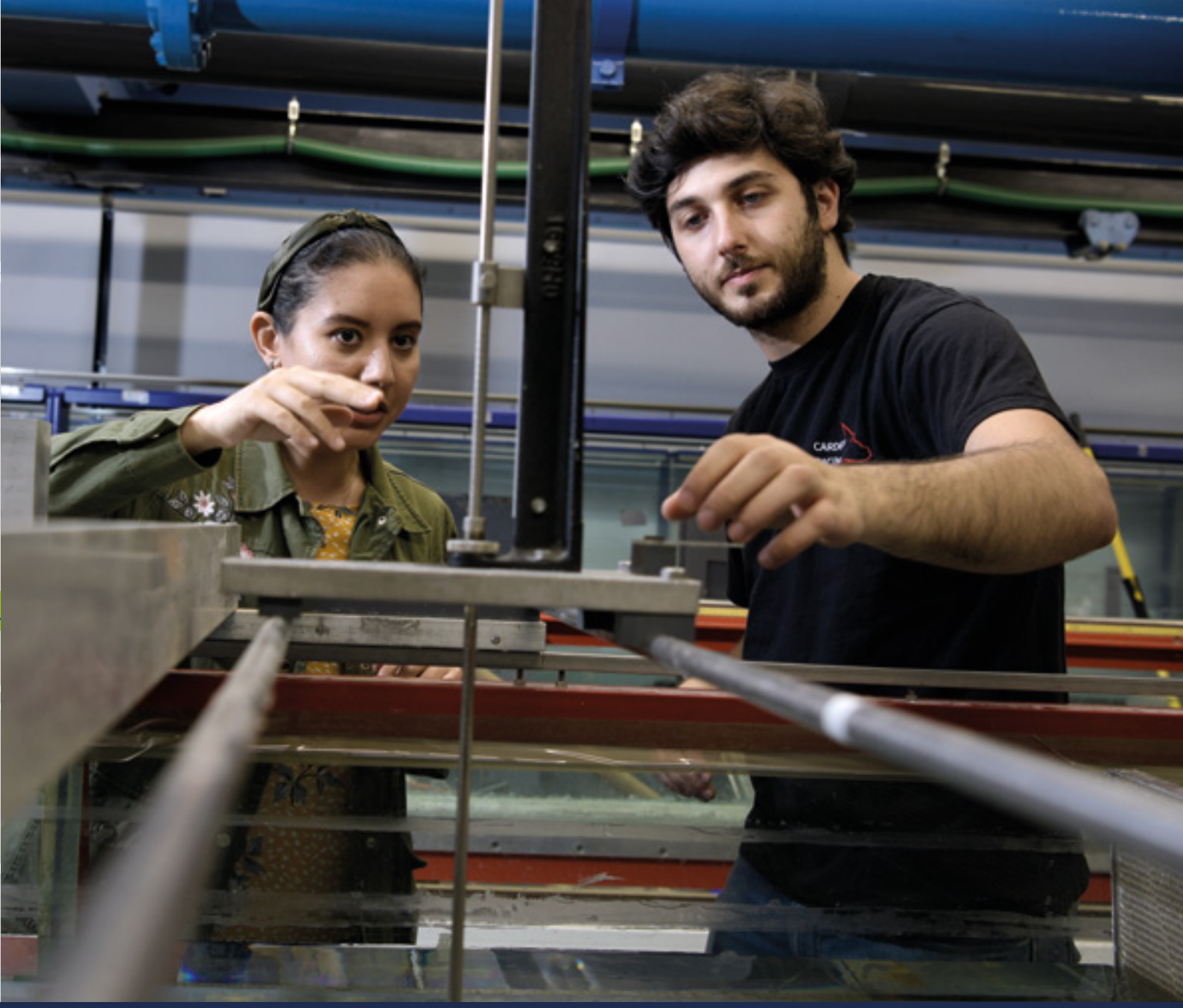
Foundation year

If you have a GCSE pass in mathematics and good A-level passes in non-mathematical subjects, the foundation year would be an ideal route for you to enter engineering. If you wish to apply for the foundation year, enter H101 in the choices section of your UCAS application, plus the code for the degree programme you wish to follow after the foundation year. This is an integrated degree programme (foundation year, plus chosen degree programme).

International Students

We welcome applications from international students and accept a wide range of qualifications. Check our course pages for information about your country.


How to find us
Key
School of Engineering
University and NHS buildings
Student residences
HEATH PARK
ROATH PARK LAKE
MYNACHDY
CATHAYS CEMETERY
PEN-Y-LAN
MAINDY
GABALFA
ROATH PARK
CATHAYS
PONTCANNA FIELDS
BLACKWEIR FIELDS
ROATH
CATHAYS STATION
PONTCANNA
BUTE PARK
RIVER TAFF
CITY CENTRE
QUEEN ST. STATION
CANTON
RIVERSIDE
NINIAN PARK
CARDIFF CENTRAL
ATLANTIC WHARF
EASTERN AVENUE
WESTERN AVENUE
RHYDHELIG AVENUE
CAERPHILLY ROAD
WHITCHURCH ROAD
CLODIEN AVENUE
WEDAL ROAD
ALLENSBANK ROAD
LAKE ROAD WEST
LAKE ROAD EAST
LADY MARY ROAD
BRANDRETH ROAD
TY GWYN ROAD
TY-DRAW ROAD
NINIAN ROAD
PEN-Y-LAN ROAD
NORTH ROAD
CROWN WAY
FAIROAK ROAD
SHIRLEY ROAD
MONTHERMER ROAD
DAVIOT STREET
MACKINTOSH PLACE
WELLFIELD ROAD
ALBANY ROAD
MAINDY ROAD
CRWYS ROAD
CATHAYS TERRACE
CATHERINE ST.
WOODVILLE ROAD
BASIL PLACE
COLUM DRIVE
COLUM ROAD
QUEEN ANNE SQUARE
CORBETT ROAD
COLLEGE ROAD
KING EDWARD VII AVENUE
MUSEUM AVENUE
CITY HALL ROAD
MUSEUM PL
ST. ANDREWS PL
BENGEWORTH ROAD
PARK PLACE
CORBURN STREET
RICHMOND ROAD
LOWTHER ROAD
SALISBURY ROAD
GORDON ROAD
CITY ROAD
NEWPORT ROAD
FITZALAN PLACE
CENTRAL LINK
CATHEDRAL ROAD
LLANDAFF ROAD
COWBRIDGE ROAD EAST
WELLINGTON STREET
LOWER CATHEDRAL RD.
CLARE STREET
NINIAN PARK ROAD
TUDOR STREET
LECKWITH ROAD
SLOPER R
BOULEVARD DE NANTES
STUTTGART STRASSE
GREYFRIARS ROAD
DUMFRIES PLACE
STATION TERRACE
QUEEN STREET
THE FRIARY
KINGSWAY
CASTLE STREET
DUKE ST.
CHURCHILL WAY
CHARLES STREET
BRIDGE ST.
ST. MARY STREET
THE HAYES
WESTGATE STREET
ADAM STREET
BUTE TERRACE
WOOD STREET
CALLAGHAN SQUARE
HERBERT STREET
TYNDALL STREET
BUTE STREET
FOOTBRIDGE
MAINDY CENTRE
SOPHIA GARDENS
CARDIFF CASTLE
CARDIFF ARMS PARK
PRINCIPALITY STADIUM
A48
A470
A469
A4161
A4119
A4160
A4232
A4161
B4267
B4258
B4261



Important Legal Information

The contents of this brochure relate to the Entry 2024 admissions cycle and are correct at the time of going to press in September 2023. However, there is a lengthy period of time between printing this brochure and applications being made to, and processed by us, so please check our website at: **www.cardiff.ac.uk** before making an application in case there are any changes to the course you are interested in or to other facilities and services described here. Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence and represent the basis on which we intend to deliver our services to you.

Your degree: Students admitted to Cardiff University study for a Cardiff University degree.

This brochure is printed on paper obtained from well managed sources using vegetable-based inks. Both the paper used in the production of this prospectus and the manufacturing process are FSC® certified. The printers are also accredited to ISO14001, the internationally recognised environmental standard.

Mae'r ddogfen hon hefyd ar gael yn Gymraeg.
This document is also available in Welsh.

This prospectus can be made available in alternative formats, including large print (text), Braille and on audio tape/CD.

To request an alternative format please contact Laura Roberts:

Tel: **029 2087 4455**
Email: **RobertsL9@cardiff.ac.uk**

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

To find out more about the School of Engineering please visit our website:
www.cardiff.ac.uk/engineering

Contact us

Tel: **029 2087 9999**
Email: **engin-admissions@cardiff.ac.uk**

School of Engineering
Queen's Buildings
The Parade
Cardiff
CF24 3AA

Stay in touch

cardiffuniversityschool ofengineering

@EngineeringCU

Student life

Got questions about student life? Get them answered at:

www.cardiff.ac.uk/studentbloggers

Want to know more about life at Cardiff University? Our student bloggers are recording their experiences and are happy to answer your questions.

Our student bloggers are real students studying on a range of courses. They are here to answer any questions you have about life at Cardiff University. What's a typical day like? What clubs and societies are there? Is Cardiff's music scene any good? It can be almost anything.

Mae'r ddogfen hon hefyd ar gael yn Gymraeg.
This document is also available in Welsh.

ENGIN/0923