STAFFORDSHIRE UNIVERSITY

NEXT GEN EDUCATION

ENGINEERING

WELCOME TO ENGINEERING

Start your journey towards an exciting and rewarding career as an Engineer. Thrive in a range of industries and become a leader in the development of tomorrow's world with an engineering degree from Staffordshire University.

We have a long history in supporting students to develop the skills and expertise they need to flourish in a variety of engineering sectors. We combine traditional and tested methods with an innovative and forward-thinking approach to give you the best chance of making a difference in your future engineering career.

Choose from specialisms in:

- **Aeronautics**
- **Electrical and Electronic**
- **Automotive and Motorsport**
- **Mechanical**

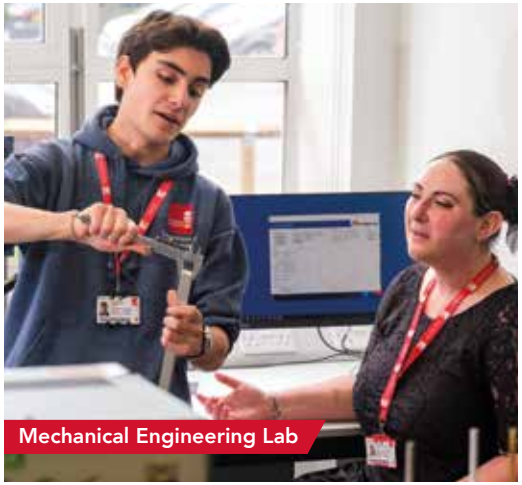
With flexible pathways that include part-time, foundation and placement years.

Whichever degree you choose, you'll study in state-of-the-art learning facilities as you develop the technical, professional and hands-on engineering skills necessary to solve real-world problems. Our engineering degrees are mapped to the standards set by the Engineering Council and will put you on the right path towards Chartered Engineer status.

You'll learn from world-class researchers and supportive staff with considerable industry experience. Thanks to our extensive business links, you'll be immersed in up-to-date thinking, real-world expertise, and leading-edge innovation throughout your studies.

Automotive Workshop

TAKE A TOUR OF OUR ELECTRICAL ENGINEERING AND TELECOMS LAB



Mechanical Engineering Lab

Automotive and Motorsport CAD

Automotive and Motorsports Workshop

Mechanical Engineering Lab

WHY CHOOSE **STAFFORDSHIRE UNIVERSITY?**

TOP 5
UK UNIVERSITY
StudentCrowd University Awards 2022

TOP 10
FOR JOB PROSPECTS
StudentCrowd University Awards 2022

TAUGHT BY **EXPERTS WITH INDUSTRY EXPERIENCE**

NO A-LEVEL MATHS? GET TAUGHT ALL THE MATHS FOR ENGINEERING YOU'LL NEED

GRADEX:
SHOWCASE YOUR WORK TO **INDUSTRY AND VIPS**

STATE-OF-THE-ART, DEDICATED LABORATORIES AND WORKSHOPS

PLACEMENTS:
SPEND A YEAR IN INDUSTRY TO BOOST EXPERIENCE

Electrical Engineering and Telecoms Lab

Smart Zone collaboration break out space

WHY CHOOSE STAFFORDSHIRE UNIVERSITY?

Our students have won multiple awards for their projects exploring creative, technological and digital innovation.

Now we've set our ambitions even higher as we aim to be globally recognised for our interdisciplinary work within the School of Digital, Technologies and Arts.

As a student here, you'll benefit from our superb industry links. Many of our Engineering students do year-long placements and get to work with nationally recognised companies such as Boeing, Bentley and the National Grid.

Students from across all Engineering disciplines can also join our award-winning IMechE Formula Student team. It's just one of the ways you'll get practical experience to develop your skills, subject knowledge and confidence. We'll encourage you to find novel solutions to real-world problems.

You'll be using the University's professional-standard facilities too. These include our advanced flight simulator for Aeronautical Engineering and our £1.3m Smart Zone which has high-end equipment, 3D printers and design workshops.

As Engineering underpins everything from robotics and self-driving cars to renewable energy systems, you could be at the forefront of emerging industries. Our School also covers a range of other academic disciplines, including Art and Design, Games, Computer Science and Film Production.

No matter what course you study, our career-focused approach means you'll graduate with transferable skills and the ability to think creatively. You'll be ready to shape the future of the world around us.

FACILITIES

ENGINEERING LABS
Work in our professional industry-standard labs, packed with state-of-the-art software and hardware resources that reflect current trends in the development of engineering and technology subjects.

RENEWABLE ENERGY LAB
Use the latest equipment in our range of renewable energy focused laboratories, including a state-of-the-art Power Systems Lab, that provides real-time testing and development facilities for use in electrical engineering, and other areas such as the Thin Film Lab (work for plastic electronics), our wind tunnel, and our high voltage cage.

FLIGHT SIMULATOR
Our flight simulator runs XPlane software and has a professional PFC flight console and radio stack system. It can be used for flying training and practicing advanced procedures, as well as learning aircraft systems and their operations.

INNOVATION ENTERPRISE ZONE
Our new £20m Innovation Enterprise Zone is a manufacturing and digital hub for the development of specialist advanced materials. Through this, students will be able to access strong industry links that will provide unique networking opportunities for the future. Our SAMPID / SAMIAC programmes aim to drive innovation, collaboration and growth across the region's advanced manufacturing sectors, with dedicated R&D facilities and specialist support. So, you'll never be far from the latest advancements in technology.

THERMOFLUIDS AND AERONAUTICAL LAB
Understanding the interaction between air and objects, particularly at their surfaces, is key to the design and operation of aircraft. Facilities in this laboratory allow practical measurement which is then augmented by computer-based flow simulation and modelling.

REVERSE ENGINEERING LAB
Our Reverse Engineering Laboratory contains 3D scanning capability, additive manufacturing machines featuring PolyJet, FDM, 3DP processes, as well as laser engraving ability.

AUTOMOTIVE WORKSHOP
Our fully equipped Automotive Workshop is where you'll be able to get hands on experience using our industry-standard rolling road and Ricardo WAVE engine simulation, as well as our road, track and race vehicles.

TAKE A TOUR OF OUR £30M SMART ZONE – THE GATEWAY TO THE NEXT GENERATION TECHNOLOGIES


Automotive Workshop


Wind Tunnel in the Aeronautical Lab


3D scanner


Innovation Enterprise Zone

I'm super excited to see what next chapter brings and **I'm grateful that Staffs has given me all these opportunities** and has helped me in my path towards this career. I'm just so thankful for the opportunity and **I honestly don't think I could have done it without Staffs**.

KAID MILLER

BENG (HONS) ELECTRICAL AND ELECTRONIC ENGINEERING

It's a good time to be an engineer. There's tons of stuff out there at the moment popping off. I think engineering is a great thing to get into. **It allows you to go into hundreds of different types of sectors.**

VINESH CHAUHAN

FINAL YEAR AERONAUTICAL ENGINEERING STUDENT

MEET THE EXPERTS

Our academics are not only active researchers within their specialist Engineering fields, but they are also experienced industry professionals who bring relevant and live real-world expertise to your learning to back your theoretical knowledge.

ANDY CASH

COURSE LEADER (AUTOMOTIVE AND MOTORSPORT ENGINEERING)

Andy has years of experience training automotive professionals. His interests include emerging automotive technologies, including Hybrid, BEV's and FCEV's, and the future of the motorsport industry. The changing landscape of the automotive industry means he's widened his interests to cover autonomous transport and personal mobility.

DR ANAS AMJAD

COURSE DIRECTOR (ELECTRICAL AND ELECTRONIC ENGINEERING)

Anas has taught a wide range of modules in electronics, signal processing and telecommunications since joining us in 2012, and has integrated digital tools in his teaching to enhance the student learning experience. His expertise lies in the use of smart systems for a diverse range of applications, such as smart healthcare, smart cities and more.

DEBI ROBERTS

COURSE DIRECTOR (TRANSPORT ENGINEERING)

Debi has a keen interest in transport aerodynamics, engine design and transport engineering history, especially that of Boulton Paul Aircraft Ltd. The changing landscape of transport engineering means she's branched out to investigate areas of autonomous, connected and future automotive engineering.

TAMOOR SHAFIQUE

COURSE LEADER (ELECTRICAL AND ELECTRONIC ENGINEERING)

Tamoor is an Electrical Engineer with over 12 years of experience in both engineering industry and academia. His field of teaching includes Robotics, Automation, PLCs, Mechatronics and more. Tamoor also brings a wealth of research knowledge with interests including Smart Cities, Internet of Things and Wireless Sensor Networks.

DR SIVA MARIMUTHU

SENIOR LECTURER (AERONAUTICAL ENGINEERING)

Siva obtained his aeronautical engineering related academic & research experiences from India, Malaysia & UAE. His main area of interest is the implementation of biomimetic surface patterns to solve problems in the fluid regime.

MARTIN FIDDLER

COURSE LEADER (AERONAUTICAL ENGINEERING)

Martin's specialism is simulated flight and pilot studies. He has worked within the aeronautical industry as an aircraft designer and has taken an advanced type rating on the Boeing 737. He's also a qualified 737 simulator instructor.

CHRIS WAYMAN

SENIOR LECTURER (ENGINEERING DESIGN)

Chris has worked as an Automotive Design Engineer in the UK and abroad. He's been involved in a range of education roles, delivering innovative and challenging projects. His priority is to encourage creative engagement in the learning process and his specialism lies in Applied Design within engineering, utilising creativity to develop effective solutions.

OUR COURSES

Course title	Award	UCAS Code	UCAS Offer	Duration in years
Aeronautical Engineering	BEng (Hons)	H410	112-120	3
Aeronautical Engineering (with placement year)	BEng (Hons)	H411	112-120	4
Automotive and Motorsport Engineering	BEng (Hons)	H110	112-120	3
Automotive and Motorsport Engineering (with placement year)	BEng (Hons)	H111	112-120	4
Electrical and Electronic Engineering	BEng (Hons)	H629	112-120	3
Electrical and Electronic Engineering (with placement year)	BEng (Hons)	H630	112-120	4
General Engineering (with foundation year)	BEng (Hons)	H100	48	4
Mechanical Engineering	BEng (Hons)	H300	112-120	3
Mechanical Engineering (with placement year)	BEng (Hons)	H301	112-120	4

APPRENTICESHIPS
WITH STAFFORDSHIRE UNIVERSITY

If you're looking to study alongside work, Staffordshire University can support you in achieving a higher-level qualification by combining practical on and off-the-job training with studying for a university qualification through a degree or higher apprenticeship.

Staffordshire University is a leading provider of apprenticeships, working with over 200 employers across various sectors. Apprenticeships provide many benefits such as earning while you learn and enhancing career prospects. They are suitable for anyone looking to start or progress within their chosen career.

The apprenticeship level will depend on the needs of your employer and the apprenticeship you are interested in, with entry requirements of Level 2 maths and English (GCSE, functional skills or equivalent) and for some programmes a level 3 or qualification in a relevant subject. You will also require a relevant contract of employment for a minimum of 30 hours per week.

CURRENT ENGINEERING DEGREE APPRENTICESHIP OPPORTUNITIES:
EMBEDDED ELECTRONIC SYSTEMS DESIGN DEVELOPMENT ENGINEER

The Embedded Electronic Systems Design Development Engineer apprenticeship is a 5-year programme designed to provide the skills, knowledge, and behaviours needed to operate effectively in the Electronic Systems Engineering sector. The apprenticeship includes a BEng (Hons) Electrical and Electronic Engineering degree and is aligned with the Engineering Councils UK Standard for Professional Engineering Competence (UK-SPEC), allowing apprentices to register as an Incorporated Engineer (IEng).

The role of an Embedded Electronic Systems Design and Development Engineer is to design circuits or devices that are cost-effective, safe, and reliable for use. This requires a combination of knowledge of electronics and electronic principles, as well as an understanding of the final product's end use.

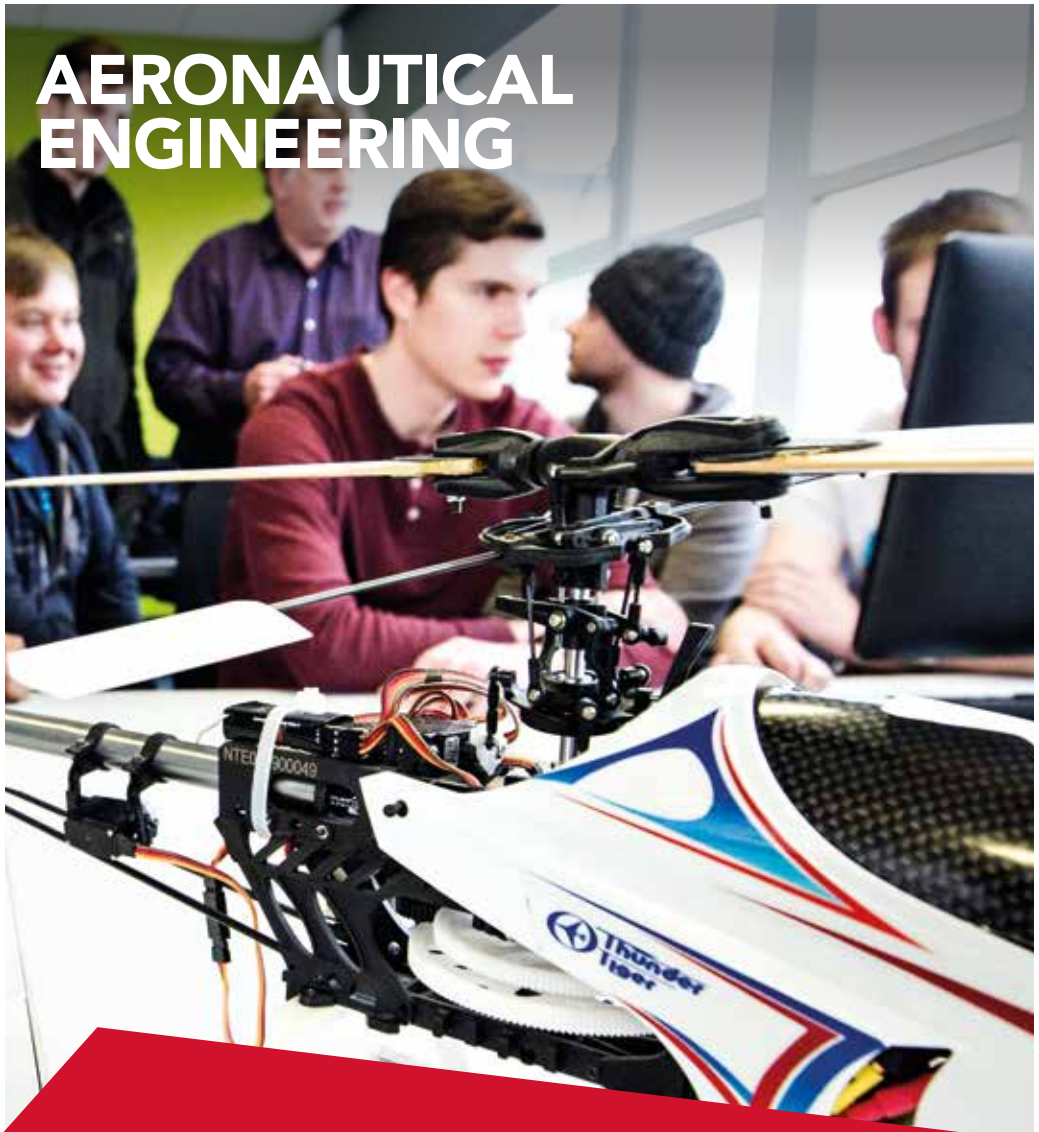
The programme includes modules such as:

- Introduction to Engineering Design and Practice
- Fundamentals of Electrical and Electronic Engineering
- Emerging Technologies and Innovation in Engineering

The apprenticeship aims to equip students with the necessary skills to make a successful application for professional recognition as an IEng.

The Embedded Electronic Systems Design Development Engineer apprenticeship is an excellent opportunity for individuals seeking a career in the Electronic Systems Engineering sector to gain the skills and knowledge required to succeed in this field.

AERONAUTICAL ENGINEERING



Whether you aspire to a career as an airline pilot or as an aeronautical engineer working in the aeronautical industry, our course will give you the skills and techniques used by professional practitioners in the aviation sector. We place an emphasis on understanding flight deck design and the relationship between pilot and modern fly-by-wire interfaces as well as the aeronautical engineering fundamentals that aspiring engineers need.

IET Accredited Programme

Accredited Degree

Institution of MECHANICAL ENGINEERS

Find out more about the course here

WHY CHOOSE US...

- Gain hands-on experience in our state-of-the-art labs, which include a computerised wind tunnel and two advanced flight simulators that can simulate Boeing and Airbus systems.
- Learn from a hands-on, practical approach to aviation, applying your skills and knowledge to a real aircraft engineering design brief.
- Choose to apply for a paid placement in industry. Recent placements have been at Airbus, Boeing, Marshall Aerospace, Airbus and Swift Aviation.
- Take part in our annual GradEX graduate exhibition in your final year, showcasing your work to leading industry experts, VIPs and members of the public.
- Visit our local gliding club, access a commercial 737 simulator and consider applying for the regional RAF University Air Squadron.

WHAT YOU'LL LEARN...

Understand the fundamentals of mechanical, thermodynamics, fluids, electronic as well as propulsion systems in gas turbine, rocket and internal combustion engines. Learn computer-aided design (CAD) techniques used by professionals, including finite element analysis and computational fluid dynamics, and understand aeronautical engineering principles such as aerodynamics and aircraft design.

Module examples:

- Mechanical Structures
- Aeronautical Principles
- Aircraft Propulsion
- Aerodynamics
- Flight Dynamics
- Aircraft Design Project
- Pilot Studies

WHAT YOU COULD DO NEXT...

Many of our graduates have gone on to secure pilot roles. We have had graduates gain jobs with the RAF, and airlines such as Virgin, Jet2 and British Airways. Others have secured engineering roles with companies such as Rolls Royce, Leonardo Helicopters, Airbus, Boeing, QinetiQ, and British Aerospace.

AUTOMOTIVE AND MOTORSPORT ENGINEERING

Our popular Automotive and Motorsport Engineering degree offers you the chance to work with suppliers, manufacturers and sector specialists to put yourself in pole position for successful career as a successful Engineer at the forefront of this exciting industry.

Accredited Degree

Accredited Programme

Institution of MECHANICAL ENGINEERS

Find out more about the course here

WHY CHOOSE US...

- Learn in state-of-the-art workshops and engineering labs, featuring industry-standard equipment, such as rolling road, computational fluid dynamics (CFD), finite element analysis (FEA), Ricardo WAVE engine simulation and analysis software, and race vehicles.
- Put your practical skills to the test by getting involved in our IMechE Formula Student team, run the Formula Renault in competitive races and take our track day car to Oulton Park race circuit.
- Access our strong industry links and work placement opportunities with automotive and motorsport suppliers and manufacturers, such as Slidesports Race Engineering and Ginetta
- Choose to apply for a paid placement year in industry to enhance your employability.
- Take part in our annual GradEX graduate exhibition in your final year, showcasing your work to leading industry experts, VIPs and members of the public.

WHAT YOU'LL LEARN...

Apply mechanical engineering principles to automotive and motorsport applications, developing the skills needed to analyse complex automotive systems. Develop theoretical knowledge, using computer-based models to design, implement and test your work. Create virtual environments to run your designs and simulations. Take specialist modules in engine design, computational fluid dynamics (CFD) and finite element analysis (FEA).

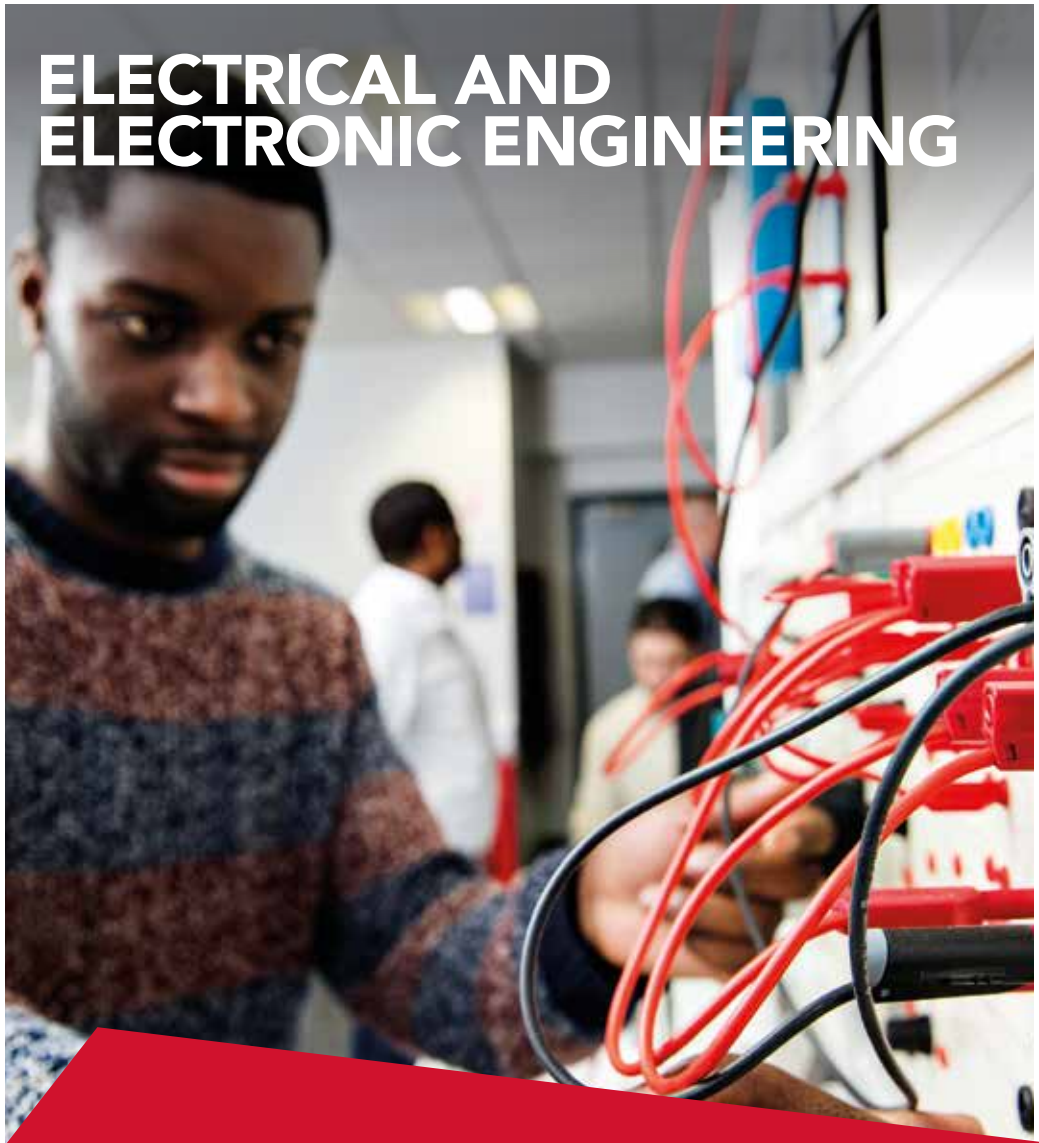
Module examples:

- Aerodynamics
- Automation and Control Engineering
- Automotive and Motorsport Principles
- Design Engineering
- Fundamentals of Mechanics and Thermo-fluid

WHAT YOU COULD DO NEXT...

Many graduates now work for companies such as Ford, Jaguar Land Rover, Bentley, Cummins and JCB. Some of our graduates enter employment as technicians, race engineers and vehicle safety engineers in the motorsport industry, competing in BTCC, World Rally and F1.

ELECTRICAL AND ELECTRONIC ENGINEERING



Gain a career advantage by developing practical and transferrable engineering skills using cutting-edge technologies to solve real-world problems. Grasp the opportunity to join our accredited BEng (Hons) Electrical and Electronic Engineering course to prepare yourself for one of the world's most in-demand professions.

IET Accredited Programme

Find out more about the course here

WHY CHOOSE US...

- Study in state-of-the-art workshops and labs on an IET accredited course. Tailor your studies to specialise in a range of areas whilst gaining a solid grounding in engineering principles.
- Access our strong industry links and work placement opportunities.
- Take part in events arranged by the professional body, IET, and benefit from the expertise of guest industry speakers.
- Take part in our annual GradEx graduate exhibition in your final year, showcasing your work to leading industry experts, VIPs and members of the public.
- Access our £1.3m Smart Zone which provides state-of-the-art fabrication and collaboration spaces with augmented and blended reality facilities. Plus, benefit from the technologies of tomorrow in our new £20m Innovation Enterprise Zone - a manufacturing and digital hub for the development of specialist advanced materials.

WHAT YOU'LL LEARN...

Learn about the design, fabrication and use of a wide range of electronics, circuits, devices and power systems. Our Electrical and Electronic Engineering degree offers flexible pathways to specialise your learning in Electrical Engineering, or Electronic and Telecommunication Engineering.

Module examples:

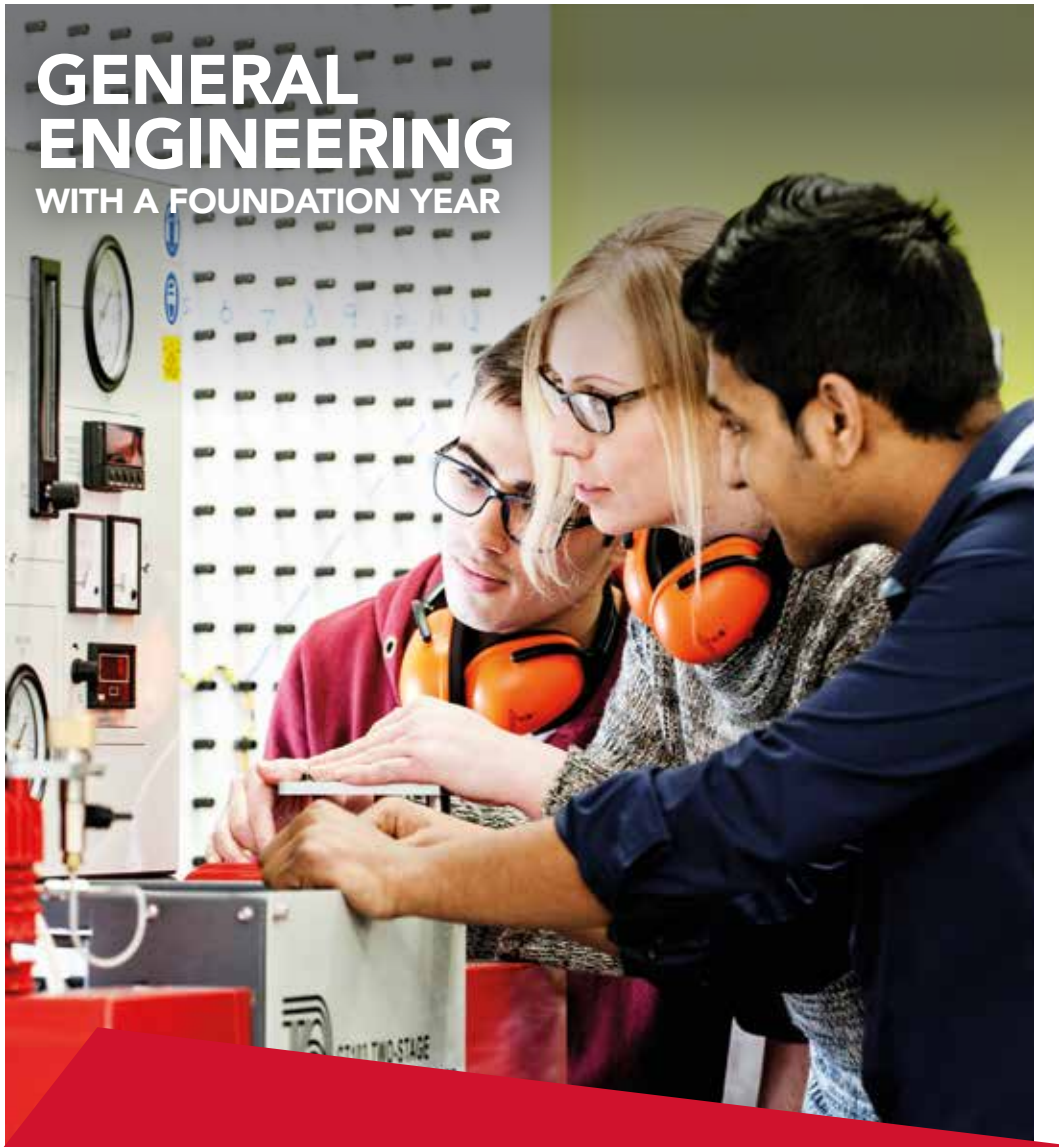
- Circuit Design and Manufacture
- Automation and Control Engineering
- Electrical Rotating Machines
- Electrical Power Systems Engineering
- Real-time Embedded Systems with DSP Applications
- Advanced Communication System Design

WHAT YOU COULD DO NEXT...

Our graduates work in a variety of organisations in electrical power generation, transmission and distribution, renewable energy, rail and road transport networks, industrial manufacturing, and telecommunications. There is also scope to work in defence related industries, including the Ministry of Defence.

GENERAL ENGINEERING

WITH A FOUNDATION YEAR



Build a solid foundation of engineering fundamentals across a range of disciplines before progressing on to your chosen specialist area of study in engineering.

Find out more about the course here

WHY CHOOSE US...

- Gain engineering knowledge and skills, as well as hands-on experience in our electronics, mechanical, automotive, aeronautical and product design labs.
- Develop your technology skills, knowledge and experiences with projects based on real-world engineering problems.
- A Level Maths is not a pre-requisite – we will teach you the Mathematics you need for Engineering.
- Access our strong industry links and work placement opportunities to expand your network connections and develop your employability skills and work in groups on live projects designed to mirror industry.
- Access our £1.3m Smart Zone which fuses state-of-the-art fabrication and collaboration spaces with augmented and blended reality facilities. Plus, benefit from the technologies of tomorrow in our new £20m Innovation Enterprise Zone - a manufacturing and digital hub for the development of specialist advanced materials.

WHAT YOU'LL LEARN...

Get to grips with everything from Newton's Laws of Motion to Archimedes' Principle. Develop the skills needed to study at degree level including essential mathematics, CAD and problem-solving. Progress onto one of our BEng (Hons) degree courses once you have passed the foundation year.

Module examples:

- Foundation Quantitative Methods
- Engineering Science
- Design and Communication
- Engineering and Technology Applications
- Principles of Materials

WHAT YOU COULD DO NEXT...

Our graduates leave with a well-rounded practical knowledge of the engineering world and have secured careers across different sectors including telecommunications, mechanical design, manufacturing, automotive, consultancy and aeronautical. Our graduates are also ideally placed to become specialists in their chosen fields via postgraduate study.

MECHANICAL ENGINEERING

Experience different aspects of mechanical engineering and develop the knowledge and skills you need to plan, design, problem solve and analyse mechanical engineering systems. Model mechanical engineering systems, predict system behaviour and understand manufacturing processes, including how they influence design.

IET Accredited Programme — Accredited Degree — Institution of MECHANICAL ENGINEERS

Find out more about the course here

WHY CHOOSE US...

- Gain hands-on experience in our state-of-the-art engineering workshops and labs equipped with the latest technology including, 3D scanners and printers, rapid prototyping, laser cutters, and the latest CAD, CFD and FEA software.
- Access our strong industry links and work placement opportunities to expand your network connections and develop your employability skills.
- Choose to take a paid placement year to further enhance your employability prospects upon graduation.
- Showcase your work to leading industry experts, VIPs and members of the public at our annual GradEX graduate exhibition.
- Access our £1.3m Smart Zone which fuses state-of-the-art fabrication and collaboration spaces with augmented and blended reality facilities. Plus, benefit from the technologies of tomorrow in our new £20m Innovation Enterprise Zone - a manufacturing and digital hub for the development of specialist advanced materials.

WHAT YOU'LL LEARN...

Develop skills that underpin engineering and collaborate, communicate and be creative through examples and problem-based learning. Learn the key engineering skills used in mechanical design and manufacturing processes, mechanical structures, automation and control, FEA and CFD, and emerging technologies.

Module examples:

- Mechanical Structures
- Manufacturing Systems and Quality
- Automation and Control Engineering
- Vibration Analysis
- Computational Fluid Dynamics (CFD)

WHAT YOU COULD DO NEXT...

Graduates have gone on to work in a variety of roles in companies including Alstom, E.ON, Network Rail, Bombardier, Rolls-Royce, Bentley, AstraZeneca, Jaguar Land Rover and Siemens. Roles include designing reactor safety systems for nuclear powered submarines, project managing new production lines in the pharmaceutical industry, optimising engine ventilation and cooling systems, and conducting renewable fuel substitution tests.

IMPORTANT INFORMATION

SUBJECT TO APPROVAL/VALIDATION

We're always striving to deliver the most current and relevant degrees, both by creating new courses and regularly reviewing our current offering.

Each time we make changes, the course goes through a rigorous approval process to ensure that it's the perfect fit for our students, employers and other relevant stakeholders.

Some of the courses inside this guide may be marked as 'subject to approval' or 'subject to validation', but don't worry, this just means some of the details of the course won't have been finalised yet. As soon as new courses are approved and validated, up-to-date information will be provided on the online course pages at **www.staffs.ac.uk/courses**

If you have been offered a place and there is a significant change to the course, or for any reason, the course doesn't run – we will contact you immediately and fully support you in finding the best suitable alternative.

At the time of printing in May 2023, the courses listed in this guide represent those we intend to offer for the 2023/2024 academic years. Very occasionally, however, we need to make changes to our courses, including their content and the way in which they are delivered. In some instances, courses can be discontinued or combined with other courses.

Reasons for withdrawing courses can include insufficient student numbers and courses not receiving the necessary accreditation or approval. Changes to course information may include operational and academic reasons.

If circumstances beyond our control mean we cannot provide particular educational services, all reasonable steps will be taken to minimise any disruption to those services. However, the University will have no liability for any loss or damage suffered by any prospect or student as a result.

As a prospective student of Staffordshire University, it's your responsibility to ensure you have fully reviewed up-to-date course information before you apply, and that your chosen course fully meets your requirements. You should also check the course still meets your requirements before accepting an offer to study with us.

Student satisfaction scores have been provided by Unistats and are correct at the time of going to print. For more information, visit: **discoveruni.gov.uk**

If we discontinue a course or programme and you're not happy with the alternative offered, or if a programme is changed and you're not happy with the changes, you'll be given the opportunity to withdraw from the programme. Up-to-date course information can be found on our website (**www.staffs.ac.uk**), or by calling us on **01782 294400**.

If you're offered a place at Staffordshire University, your offer will be subject to the University's Terms and Conditions of Offer. If you become a student of Staffordshire University, you will enter a contract with us and be bound by our rules and regulations. These, too, may vary from time to time (**www.staffs.ac.uk/rulesandregs**).

2ND

IN THE UK FOR QUALITY EDUCATION

Sustainable Development Goal 4
THE Impact Rankings 2023

TOP 10

FOR CAREER PROSPECTS

Whatuni Student Choice Awards 2023

TOP 20

FOR FACILITIES

Whatuni Student Choice Awards 2023

TOP 10

FOR SOCIAL INCLUSION

The Times and The Sunday Times Good University Guide 2023

87%

OF RESEARCH IMPACT IS 'OUTSTANDING' OR 'VERY CONSIDERABLE'

Research Excellence Framework 2021

68%

OF RESEARCH IS 'INTERNATIONALLY EXCELLENT' OR 'WORLD LEADING'

Research Excellence Framework 2021

For more detailed information on courses or studying at Staffordshire University visit:
www.staffs.ac.uk/undergraduate

Find us on: **www.staffs.ac.uk/socialmedia**

STAFFORDSHIRE UNIVERSITY

103644T 10/23