



Engineering
Undergraduate Degrees 2026

Engineering *drives innovation* **and solves real world** *problems, building* **the technologies and** **infrastructure that** *shapes our daily lives.*

In the School, our expert researchers work to unlock sustainable solutions to a range of complex challenges themed around energy, health, manufacturing and next-generation services including communications and robotics. Our research informs what we teach, and our excellent team of academic staff will inspire you, bringing the subject to life with insight and examples drawn from their research, much of which has been undertaken with industrial partners. Our strong industry links will benefit you in your projects and placement opportunities.

We have expanded our School to add another building with brand new teaching facilities including design and computing labs, a new student workshop and a student-led maker space. Whilst our new building provides new facilities, we are a mid-sized school and our strength lies in our smaller scale, friendliness, accessibility and diversity. We support each other and are well placed to embrace your individuality. We also recognise the transition to university can be daunting. The School aims not just to teach technical and soft skills but also provide pastoral support through our technical and programme support teams as well as our small group tutorial sessions.

The teaching methods we use are deliberately varied to develop your creativity, innovation and problem-solving skills. They include face-to-face lectures, small group workshops, laboratory classes and computer-based design activities. We always seek to provide forward-thinking course content delivered by experts within their field and listen to and engage with student feedback and comments.

Engineering is a discipline that really can take you to wherever you want to go and at Lancaster's School of Engineering, you are limited only by your ambition.



Head of School

Professor Raffaella Villa

BSc MSc PhD PGCert



The course *for you*

At Lancaster, we take great pride in the engineering education we deliver. All our undergraduate courses are accredited by the relevant professional institution (IET, IMechE or IChemE) and as such either partially (Bachelor's) or fully (Integrated Master's) meet the educational requirement for Chartered Engineer (CEng) registration.

The modern world no longer distinguishes the historical boundaries found within engineering science. Engineering careers are fast paced and interdisciplinary, moving with the technology and requirements of an interconnected world. Our common first year, focused on the general engineering principles will make the difference in securing a successful and fulfilling career. You will develop the common language of engineering which enables effective communication and decision-making. You will also develop professional skills that will enable you to become a well-rounded engineer.

All our specialisms are designed to prepare you for a successful career in engineering. Alongside the theory and practical skills you would expect from a university education, you will also be exposed to interdisciplinary, real world engineering problems. You will be invited to solve these problems using a mixture of the design, engineering knowledge and practical and analytical skills that you have gained during your degree. We will encourage you to develop solutions that are economic, ethical, safe and sustainable.

All of our academics are research active, and this provides you with a broad range of opportunities to work on group projects related to their fields. The topics will be at the cutting-edge of research and may also involve external organisations. Your work will therefore contribute positively to the local and wider community.

We look forward to welcoming you to Lancaster.



Director of Undergraduate Teaching, School of Engineering














































Dr David Cheneler













Engineers help build a sustainable future, extend scientific progress, and improve global economies. The mission of our School of Engineering is to develop forward-thinking innovators who are able to overcome challenging problems using teamwork, originality, and a rigorous scientific acumen.

Our professionally accredited degrees are flexible, allowing you to change specialisation and to transfer between the BEng and MEng degrees. You can also opt for the industrial placement or study abroad schemes. During later years you can select optional modules and determine your project topic, linked to and informed by our excellence in research.

Our relatively small size and collegiate campus gives our School a friendly atmosphere that helps to foster a community spirit and positive interactions between staff and students. The expertise of our academic staff expands across a broad range of fields, reflecting the interdisciplinary nature of the challenges modern engineers face. We adopt a “learning-through-doing” approach, supported by our exceptional team of experienced technical and support staff.

Our graduates enjoy a diverse range of exciting careers, rewarded by our interdisciplinary approach, solving real-world problems and sustainably meeting the needs of future generations.

Degree title		Degree (Hons)	UCAS code	Course duration (years)	Typical A level offer
 	Engineering	BEng	H100	3	ABB
 	Engineering	MEng	H102	4	AAA
 	Engineering (Study Abroad)	 BEng	H103	4	ABB
 	Engineering (Study Abroad)	 MEng	H104	5	AAA
 	Engineering with Placement Year	 BEng	H106	4	ABB
 	Engineering with Placement Year	 MEng	H105	5	AAA
	Engineering (with a Foundation Year)	BEng	H10F	4	CCC
	Chemical Engineering	BEng	H800	3	ABB
	Chemical Engineering	MEng	H811	4	AAA
	Chemical Engineering (Study Abroad)	 BEng	H812	4	ABB
	Chemical Engineering (Study Abroad)	 MEng	H813	5	AAA
	Chemical Engineering with Placement Year	 BEng	H814	4	ABB
	Chemical Engineering with Placement Year	 MEng	H815	5	AAA
	Chemical Engineering (with a Foundation year)	BEng	H80F	4	CCC
 	Electronic and Electrical Engineering	BEng	H607	3	ABB
 	Electronic and Electrical Engineering	MEng	H606	4	AAA
 	Electronic and Electrical Engineering (Study Abroad)	 BEng	H608	4	ABB
 	Electronic and Electrical Engineering (Study Abroad)	 MEng	H609	5	AAA
 	Electronic and Electrical Engineering with Placement Year	 BEng	H610	4	ABB
 	Electronic and Electrical Engineering with Placement Year	 MEng	H611	5	AAA
	Electronic and Electrical Engineering (with a Foundation Year)	BEng	H60F	4	CCC

Degree title		Degree (Hons)	UCAS code	Course duration (years)	Typical A level offer
M E Mechanical Engineering		BEng	H300	3	ABB
M E Mechanical Engineering		MEng	H303	4	AAA
M E Mechanical Engineering (Study Abroad)		BEng	H305	4	ABB
M E Mechanical Engineering (Study Abroad)		MEng	H306	4	AAA
M E Mechanical Engineering with Placement Year		BEng	H307	4	ABB
M E Mechanical Engineering with Placement Year		MEng	H308	5	AAA
N Mechanical Engineering (with a Foundation Year)		BEng	H30F	4	CCC
M E Mechatronic Engineering		BEng	HH63	3	ABB
M E Mechatronic Engineering		MEng	HHH6	4	AAA
M E Mechatronic Engineering (Study Abroad)		BEng	HH64	4	ABB
M E Mechatronic Engineering (Study Abroad)		MEng	HHH7	5	AAA
M E Mechatronic Engineering with Placement Year		BEng	HH65	4	ABB
M E Mechatronic Engineering with Placement Year		MEng	HHH8	5	AAA
N Mechatronic Engineering (with a Foundation Year)		BEng	HH6F	4	CCC
M E Nuclear Engineering		BEng	H820	3	ABB
M E Nuclear Engineering		MEng	H821	4	AAA
M E Nuclear Engineering (Study Abroad)		BEng	H822	4	ABB
M E Nuclear Engineering (Study Abroad)		MEng	H823	5	AAA
M E Nuclear Engineering with Placement Year		BEng	H824	4	ABB
M E Nuclear Engineering with Placement Year		MEng	H825	5	AAA
N Nuclear Engineering (with a Foundation Year)		BEng	H82F	4	CCC



Study abroad available



Industry placement available



New course for 2026



IChemE accredited

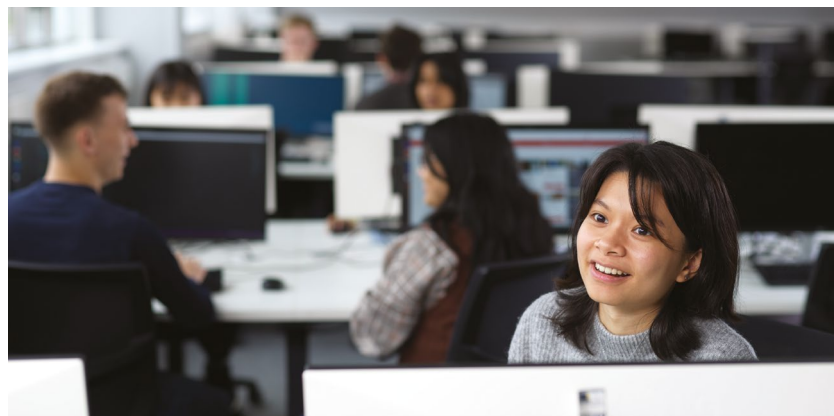


IET accredited



IMechE accredited

With a broad set of degree specialisms and entry to our programmes at three different levels we recognise that things can be confusing. We accept a wide variety of qualifications but have minimum prerequisite levels in mathematics and prefer a technical/scientific bias. Our experienced admissions team will evaluate your entire educational history and you may be asked to participate in a short informal interview so that we can ensure the most appropriate entry point and to enable us to recognise the value in all qualifications and experience being presented.





Our *research*

Whilst no engineering degree can teach every aspect of engineering, we're proud to have world-leading researchers who comprise our teaching staff and will provide you the opportunity to develop your key skills and immerse yourself in active research embedded into your studies. We will equip you with the key transferrable skills to tackle unfamiliar challenges by working across our research fields:

Electronic Engineering

We are leading cutting-edge research in areas encompassing high frequency electronics, flexible electronics, photonics, sensing, microwaves to terahertz, the Internet of Things (IoT), vacuum electronics, particle accelerators, wireless communications for 5G and 6G, microfluidic and novel artificial functional materials.

Energy

Research includes: the supply and demand of energy, work on hydropower and fluid machinery, work on renewable wave, tidal, solar and wind energy, energy storage, bioenergy utilisation, condition monitoring, smart grids and energy efficiency.

Structures, Materials & Manufacturing

This Research is multidisciplinary and includes: smart sensors for structural integrity, composite and sustainable materials, additive manufacturing and laser-based production techniques, and multiscale modelling of materials and production processes.

Nuclear Science & Engineering

Lancaster is internationally-recognised for capabilities in radiation detection and safeguards, decommissioning and waste management, nuclear process chemistry, control and robotics, fusion, environmental behaviour and nuclear safety and policy.

Chemical Engineering

This research covers a wide range of internationally important aspects of chemical and biochemical engineering including electrochemical energy storage, battery technology, heterogeneous catalysis, fuel cells, electrolyzers, plasma gasification, valorisation of biomass, chemical kinetics for renewable and alternative fuels, carbon capture and utilisation, sustainable process engineering, biomaterials for biomedical applications, bioprocesses and membrane technologies for biomolecule recovery.

This all may sound rather daunting but the application areas are often very simple such as designing an artificial home for bees or ensuring wind turbine blades work better in the rain; we've even used carrots to improve concrete!



Laura, *third year*

MEng Nuclear Engineering

Studying Nuclear Engineering at Lancaster has really opened my eyes to the range of opportunities and careers available in this diverse field.

I particularly enjoyed the nuclear modules and got the opportunity in my third year to work on simulating radiation damage in high temperature superconducting fusion magnets. Not only was the process thrilling in an academically challenging way, but it also sounds cool when showing off to my friends!

I feel that, during my studies at Lancaster, I have been constantly pushed to develop my skill set, both in terms of engineering skill and soft, transferable skills. My individual project has given me particular insight into more research based careers and, furthermore, I was lucky enough to get the opportunity to pursue my research project further through a summer internship, which I am really looking forward to!



Daniel, fourth year

MEng Mechanical Engineering with Placement Year

BAE Systems

“

The connections I made and experience I gained helped me secure two further internships and an offer for a graduate role.

”

Propulsion Engineer

I spent most of my placement working as a mechanical engineer in Barrow as a Propulsion Engineer. This involved many different aspects surrounding engineering design, manufacture, and testing of different mechanical systems.

I enjoyed being able to visit suppliers and see what different engineering facilities and environments looked like. I learnt a lot by seeing things in person and it was interesting to learn from other people who had more experience.

Spending a year in industry gave me a better understanding of what a role as an engineer looks like, experience of working in a real-world setting and applying the skills I learnt during my studies.

The connections I made and experience I gained helped me secure two further internships and an offer for a graduate role at BAE Systems. It improved my understanding of engineering chartership, and the significance of becoming a chartered engineer. It also helped me find my course more interesting when returning into my third year, as I now have practical examples I can link modules to when learning new content.

Grow *with your* placement

Increase your employment prospects by opting for a Placement Year. All of our degree schemes offer a one year placement where you will undertake full-time, paid employment with an organisation of your choice. Establish yourself as a young professional, just like Daniel.

Placement Year

Placement opportunities are available with a range of organisations all over the UK and world-wide, including large multinational corporations and start-up businesses. You will be fully supported by the School and Careers Service in finding an organisation with an appropriate role. We provide support throughout the placement process, from helping you to source opportunities and to prepare you for interviews and assessment centres, as well as the duration of your placement.

Many Lancaster graduates gain employment with their placement company. Whatever your future career, a placement degree is guaranteed to bestow you with a range of new knowledge, skills and experience, giving you that competitive edge and readiness for work once you graduate.

Recent Engineering students have undertaken placements with:

Summer Placements

We recognise that a placement year isn't the best fit for all of our students and will support you with facilitating summer internships and placements to complement your studies.

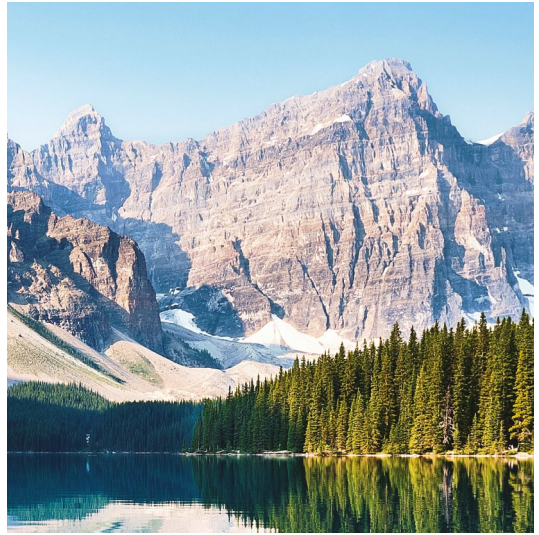
Jack, fourth year

MEng Mechanical Engineering

I've had summer placements with RED Engineering, Balltec Engineered Solutions and Mott Macdonald Bentley.

The skills gained from entering a professional environment and contributing to active engineering projects are difficult to find anywhere else. The technical understanding obtained from working alongside engineers in their field is invaluable and complements the university experience exceedingly well. Being able to apply this alongside academic knowledge significantly improves your ability to approach problems and create impactful solutions.





Your global *experience*

Lancaster is a truly international university, with students and staff from over 100 different countries and partner institutions around the world. Your global experience is about living and learning with people from different cultures whether through your course, your college or your Students' Union.

Study abroad

Many multi-national engineering companies recruit graduates with international awareness and a willingness to travel. If you want to kick-start your international career by having actual experiences to talk about with future employers then the Study Abroad route is something that you should strongly consider and it is open to all our engineering programmes regardless of selected specialisation.

Vacation travel

Alternatively, there are often shorter options in the Easter or summer vacation to destinations such as China, Germany, Ghana, India and Malaysia. These programmes include meeting local students and businesses as well as some academic study and cultural discovery. You may also be able to attend a summer school at one of our many overseas partner universities.

Scan the QR code to find out more.



“

If you're considering study abroad, my advice would be go for it! You won't regret it.

”

McMaster University
Canada

Julia, fourth year
MEng Chemical Engineering
(Study Abroad)

Lancaster University

I had the incredible opportunity to study at McMaster University in Canada. Stepping out of my comfort zone has helped me gain independence and the ability to thrive in unfamiliar environments which will benefit me throughout my life!

My academic advisor provided exceptional support even before my arrival in Canada, helping me create a study plan which ensured a smooth transition.

Reflecting on my time, I can confidently say that studying abroad has changed my life for the better. I now have friends across the world and my time was filled with memorable experiences such as trips to Niagara Falls and visiting New York. If you're considering study abroad, my advice would be go for it! You won't regret it.

Supporting your studies

We have a strong focus on industrial projects, internships and work experience and pride ourselves on our wide range of services and support. Here's how we enable you to achieve your career aspirations.

Industrial placements and internship opportunities are commonly offered within the School, usually in collaboration with an external organisation, allowing you the opportunity to put into practice aspects of your learning from your degree programme and to gain experience, whilst earning a wage. We also work collaboratively with our students to facilitate the placements and internships that work for you. If there is an opportunity you are interested in, our Engagement and Careers team can help you to make it happen!

The School is fully engaged in both the **University and Faculty of Science and Technology Careers Fairs**, held annually on campus. Both events attract top recruiting companies and organisations from the private and public sectors. One-to-one meetings with employers give you the opportunity to learn first-hand what the expectations are from recruitment processes, and what might be involved in assessment centres, workplace-based exercises and interviews.

Industrial Links

Guest speakers are invited to participate in academic modules associated to their industrial sector, to provide practical insight to applications of engineering within their business setting, and highlight what employment opportunities may look like within that industry.

Industrial projects are incorporated within all programmes in the School. These may take the form of intensive, short projects undertaken in collaboration with an external stakeholder, to year-long individual and group-based projects in the third and fourth years of study (depending on degree level). These projects offer another opportunity for you to engage with engineering in the real world and to develop those key skills employers are looking for in graduates.

The School of Engineering has dedicated **Academic Employability Champions**, able to work with you to prepare applications for placements and graduate roles, and to provide information about upcoming opportunities. Centrally, the University's Careers Service provides a dedicated **Careers Advisor** to the School, offering access to a range of resources including CV checks, mock interviews, and example recruitment exercises. Employability skills are fostered throughout your degree and we offer lifetime support, help and advice to all our students.





Wellbeing and Support

Lancaster has a range of specialist support services that work in partnership with the School and your college to offer you the right support at the right time.

Many students have medical conditions or impairments that can impact upon university life. If you have a condition that is classified as a disability, the **Disability and Inclusive Practice Service** can help put in place various forms of support.

Our **Counselling and Mental Health Service** can provide short-term support to help you to continue to engage in your studies if you experience emotional and/or mental health issues. We have a medical practice on campus, pre-school centre and multi-faith chaplaincy.

There is a team of professionals to help develop your academic writing, critical thinking, exam technique and management of your studies. The University has a full time dedicated **maths tutor** who works closely with the School of Engineering to help provide extra support through **workshops, tutorials, and one-to-one sessions**.



Scholarships and Bursaries

A number of University Scholarships and Bursaries are available to help support your studies. These are reviewed annually with details available on our website.

As a School we have the Tom Millen Engineering Scholarship to enable two outstanding first year Engineering students to benefit from a bursary and in later years there are a number of project awards sponsored by external companies, charities and the Professional Engineering Institutions.

Engineers are in high demand and we will often post details of external bursaries to our applicants so please keep in touch.



Our General Engineering Approach

Our School is one of only a handful of general engineering schools in the country offering an interdisciplinary experience typical of what you will face in industry. We design our courses to be flexible and adapt to your needs.

We teach the first year of all our courses as a general engineering year equipping you with the fundamental learning and skills needed to move into any of our degree specialisms subject to progression requirements.

There remains significant collaboration between the disciplines through project work reflecting modern industry. Our alumni will often report that the broad, interdisciplinary nature of our degree has allowed them to easily change career trajectory.

If you're unsure which area of specialisation you'd like to go into when applying, you can apply for any of our General Engineering degrees (see page 4 for more information on our General Engineering courses).

We encourage all students towards the MEng courses subject to achieving a 2:1 standard or higher in second year, providing fantastic career opportunities and flexibility to build the degree as your learning matures.

Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future.

Information within this publication with respect to courses and modules is correct at the time of publication, and the University will make every reasonable effort to offer courses and modules as advertised. In some cases, changes may be necessary and may result in new modules or some modules and combinations being unavailable, for example as a result of student feedback, timetabling, staff changes and new research.

Year 1

Engineering Science

Discover how physical principles associated with energy transfer, forces, kinetics, and atomic behaviour shape the function of structures, processes, and components laying the foundation for all engineering disciplines.

Engineering Skills

Use industry standard Computer Aided Design software to realise designs and learn the formal design process so that your designs are innovative and robust. This module teaches you the basics of C programming.

Fundamental Engineering Mathematics

This module covers key analytical techniques providing a foundation for all engineering courses and bringing everyone to the same level of understanding using tools such as MATLAB.

Engineering Thermofluids

Build your understanding of thermodynamics, heat transfer and fluid dynamics, core principles that drive engineering solutions across all disciplines. Reinforce theoretical concepts through observation and experimentation.

Engineering Systems

This module bridges the gap between engineering science and real-world application, enabling you to design and implement industrially relevant systems.

Applied Engineering Mathematics

Building on the skills in Fundamental Engineering Mathematics, this module will strengthen and apply your mathematical skills to real engineering scenarios.



Accreditation

All our degrees are externally accredited, offering a mark of assurance that the degree programme meets the standards defined and set out by the Engineering Council. Our three year, BEng degrees meet partial fulfilment of the educational requirements for Chartered Engineer (CEng) status, whereas our four year, MEng degrees meet the full educational requirements.

All our Chemical Engineering degrees are accredited by The Institution of Chemical Engineers and our remaining programmes are accredited by both the Institution of Mechanical Engineers and The Institution of Engineering and Technology in collaboration.

We are also proud to, as a School, have achieved a Bronze Award from the Athena Swan Charter and to be rated TEF Gold for the quality of our teaching.



Interdisciplinary Projects

Our students put their interdisciplinary skills to use in a range of projects engaging directly with research and industry. Examples of projects from 2025 include:

- **Heat Pump Systems:** Working with an external organisation to develop ground source heat pumps for their facilities.
- **Cancer Diagnosis Tools:** Developing a quartz sensor to be used as a diagnostic tool for lung cancer using breath composition.
- **Green Hydrogen Production:** Using wave energy from the North Sea to assess technical and economic feasibility of large scale hydrogen production.
- **Molten Salt Reactors:** Nickel electroplating of steel to improve corrosion resistance for molten salt reactors - a GenIV nuclear reactor type, produced in collaboration with a Canadian company leading in this field.
- **Resin and Polymer Production:** Designing a plant for the production of Vinyl Acetate Monomer, used in the production of many resins and polymers.



Chemical Engineering

BEng, MEng Hons

Chemical engineers are employed across a huge variety of sectors requiring technical knowledge of chemistry, biochemistry, engineering, materials science and IT as well as skills in management, safety and the environment. This diversity offers a broad spectrum of career opportunities.

Studying Chemical Engineering provides the opportunity to study process technology, which will help solve some of the world's greatest challenges, such as freedom from hunger, clean water, and equitable access to energy. You will gain insights into current environmental issues and development of new technological solutions such as carbon capture, climate change, sustainable energy production, and environmental conservation.

You will gain hands-on experience with access to cutting-edge facilities and an array of high-quality equipment in our state-of-the-art laboratories. Team projects allow you to acquire creative, entrepreneurial and analytical skills which will improve your employability.

For MEng students we offer a diverse range of individual project opportunities that are guided by our research strengths. Previous projects have examined fuel cells, nutraceuticals, catalysis, bioprocesses and materials. Our Chemical Engineering programmes are accredited by the Institution of Chemical Engineers on behalf of the Engineering Council.

Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future.

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Year 2

Fluid Mechanics and Mass Transfer

Explore the nature of fluids and their fundamental properties. You will develop a solid understanding of how fluids behave at rest and in motion and test your understanding in the lab.

Thermodynamics and Heat Transfer

Gain an integrated understanding of energy exchange mechanisms, focusing on heat and work transfer across different states and phases of matter. Acquire a competitive edge in shaping future sustainable energy solutions.

Chemical Engineering Practice

This module is lab-based and prepares you for challenges in chemical engineering by strengthening your ability to assess risks, operate equipment and interpret engineering data in a structured and scientific manner.

Chemical Engineering Design

Put your skills into practice, designing distillation columns using simulation programmes such as Aspen whilst considering technical aspects, legislation, Codes and Standards and costing.

Chemical Reaction Engineering

Discover key concepts essential for designing and analysing reactors with a focus on kinetics and learn to classify reactions based on their characteristics.

Particle Technology & Separation Processes

Explore key concepts of how power interacts with fluids and the interdependence of mass transfer-based systems through hands-on experience with industrial practical examples, preparing you for work in the chemical process industry.



Year 3

Chemical Engineering Project

Dive deep into the design of traditional chemical processes, tackling real-world engineering challenges. Apply your knowledge to solve industry-relevant problems that will test your ability to think critically and collaborate.

Engineering Management and Entrepreneurship

Cover key areas to real-world engineering - scheduling, project risk management, quality, cost and resource management. Explore entrepreneurial topics including business model generation and market segmentation.

Process Dynamics and Control

Explore two key themes (computational process simulation and control system design) through hands-on experience using software such as Aspen Plus and MATLAB to solve complex chemical engineering problems.

Sustainable Process Engineering

This module will equip you with a deep understanding of advanced chemical engineering principles, focusing on simultaneous momentum, heat and mass transfer for efficient process design.

Applied Reaction Engineering

Delve into advanced concepts and practical applications of reaction engineering to clean chemical synthesis, environmental protection and manufacture of commodity chemicals through the study of industrially relevant processes.

Year 4 (MEng only)

Core Modules

Individual Project

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Industrial Consultancy

Work in teams to apply your knowledge and skills in a real-world context, often linked to industry. Explore the role of engineering consultancy in solving problems, applying skills from previous modules and technical subject-specific knowhow.

Optional Modules

- + Hydrogen and Fuel Cell Technology
- + Electrochemical Engineering
- + Interfacial Phenomena and Microfluidics
- + Biomaterials and Tissue Engineering
- + Control and Machine Learning
- + Nuclear Fuels Engineering



Electronic and Electrical Engineering

BEng, MEng Hons

Electronic and electrical engineers are at the heart of shaping smarter, more efficient systems for the future from healthcare and clean energy to transport, communications, and environmental solutions.

Our degrees will develop your knowledge whilst reflecting modern industry requirements, developing specialisation in electrical, digital and high frequency systems applied to practical and professional settings.

Our academic staff are leading experts in the areas of radio frequency and wireless technologies, robotics, energy storage systems, sensors and instrumentation and renewable energy. All our students will complete an individual project linked to one of these areas and past projects have included developing amplifiers and antennas for 5G communications, FPGA systems for nuclear detection, studies on harmonics in the power electronics of wind turbines and design of next generation, nanoelectronic devices.

Our programmes are accredited by the Institution of Engineering and Technology on behalf of the Engineering Council and we are a university partner within the UK Electronic Skills Foundation who connect the most capable electronics students at top UK universities with leading employers through scholarship schemes.

Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future

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Year 2

Control and Robotics

Explore the fundamentals of control engineering and apply your knowledge to developing an autonomous robotic system in the laboratory. You will work as a team to refine your robot to complete tasks.

Digital Electronics and Software

Discover how digital systems power the world around us, exploring digital electronics and learning how to design and implement them using industry standard hardware languages like VHDL and Verilog.

Electrical Circuits and Analogue Electronics

Learn about fundamental components of electrical circuits and examine how they behave when connected in various configurations. You will be introduced to diodes and bipolar junction transistors.

Electromagnetism and Communications

Explore electric and magnetic fields, their influences on circuits and their relation to voltage and current. You will learn about electromagnetic waves including antennas and transmission lines and look at communication systems.

Power Engineering

Examine the fundamental concepts of electrical machines, power electronic converters and power systems. This module focusses on a range of AC and DC machines and how electrical power systems work from generation to distribution.

Electronics Materials and Manufacturing

Gain an understanding of industrial solutions for high-volume, low-cost systems and low volume, high reliability products. Learn about semiconductors, industrial manufacturing and the challenges associated with high power and frequencies.

Year 3

Engineering Management and Entrepreneurship

Cover key areas to real-world engineering - scheduling, project risk management, quality, cost and resource management. Explore entrepreneurial topics including business model generation and market segmentation.

High Frequency Circuit Engineering and Communications

Study a range of RF circuits and high frequency systems and components that find application in modern wired and wireless communication, with a focus on practical circuit design and 5G and 6G advancements.

Power Electronics and Applications

This module introduces electronic switching devices and their role in single-phase and three-phase converters and inverters. You will have the opportunity to design medium and high frequency transformers for isolated power convertors.

Digital Signal Processing

Explore essential techniques for processing signals in digital systems using MATLAB. Beyond theory, apply your understanding to digital CMOS circuits, bridging the gap between theory and real-world embedded systems.

Group Project (MEng only)

Collaborate in a multidisciplinary team to address a research problem or challenge set out by the School's industrial collaborators. Combine theoretical research with practical solutions and draw on your wealth of experiences from prior study.

Individual Project (BEng only)

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.



Year 4 (MEng only)

Core Modules

Individual Project

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Industrial Consultancy

Work in teams to apply your knowledge and skills in a real-world context, often linked to industry. Explore the role of engineering consultancy in solving problems applying skills from previous modules and technical subject-specific knowhow.

Optional Modules

- + Mechatronics and Control Engineering
- + Electric Vehicles
- + Advanced Embedded Systems
- + Control and Machine Learning
- + Electrical Power Systems
- + Advanced RF Engineering



Mechanical Engineering

BEng, MEng Hons

Mechanical Engineering is a field covering any industry that uses mechanical systems, from construction to transport; medicine to manufacturing; renewable energy to consumer technology.

As a mechanical engineering student, you will specialise in the core competences required for a modern mechanical engineer. Group projects are a strong feature of both the second year and the third years. You will enhance your team working and presentation skills in a multi-disciplinary robot project and a business development project which is supported/mentored by industry experts.

Individual project work plays a significant role in the development of your analytical ability and practical skills. It also enhances your creativity for solving problems and producing innovative designs, key skills required by employers. Past projects have included high-lift aerodynamics for turbine blade design, microstructural design of steels for improving strength and toughness, design and testing of a novel concept in thermal management for electric vehicles and vibration energy harvest using piezoelectric sensors.

Our MEng programme builds upon the three year BEng scheme offering opportunities through more specialised pathways for you to develop your leadership, entrepreneurial and management potential through design, make and test group and individual project work.

Our Mechanical Engineering programmes are accredited by the Institution of Mechanical Engineers (IMechE) on behalf of the Engineering Council.

Enhancing your curriculum

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Year 2

Control and Robotics

Explore the fundamentals of control engineering and apply your knowledge to developing an autonomous robotic system in the laboratory. You will work as a team to refine your robot to complete tasks.

Fluid Mechanics and Mass Transfer

Explore the nature of fluids and their fundamental properties. You will develop a solid understanding of how fluids behave at rest and in motion and test your understanding in the lab.

Electrical Circuits and Analogue Electronics

Learn about fundamental components of electrical circuits and examine how they behave when connected in various configurations. You will be introduced to diodes and bipolar junction transistors.

Thermodynamics and Heat Transfer

Gain an integrated understanding of energy exchange mechanisms, focusing on heat and work transfer across different states and phases of matter. Acquire a competitive edge in shaping future sustainable energy solutions.

Engineering Mechanics

Learn the skills to analyse and design advanced mechanical systems subjected to general loads whilst focusing on the foundations of statics and dynamics with principles of structural mechanics.

Machine Design

Topics covered include bearings, gears, shafts, couplings and threaded fasteners. Understanding of tribology friction and wear will teach you to design safer and more efficient machines that are cost effective and sustainable.

Engineering Materials

Gain knowledge and skills critical to analysis of material behaviour and failure prediction whilst aligning with UN Sustainable Development Goals through exploring material structure, properties and real-world application.

Year 3

Engineering Management and Entrepreneurship

Cover key areas to real-world engineering - scheduling, project risk management, quality, cost and resource management. Explore entrepreneurial topics including business model generation and market segmentation.

Computer Aided Engineering

Get hands-on with this lab-based module immersing you in the practical application of Finite Element Analysis and Computational Fluid Dynamics. You will use industry standard software to engineer challenges with confidence.

Dynamic Systems

Explore the dynamic modelling of mechanical and mechatronic systems in time and frequency domain using a range of mathematical techniques with an emphasis on analytical and computational approaches.

Product Design

Develop your skills for taking in customer requirements, improve your creative thinking and delve into tools and modelling methods to generate conceptual system design solutions to ensure you're equipped with the skill to come to the correct solution to engineering problems.

Group Project (MEng only)

Collaborate in a multidisciplinary team to address a research problem or challenge set out by the School's industrial collaborators. Combine theoretical research with practical solutions and draw on your wealth of experiences from prior study.

Individual Project (BEng only)

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.



Year 4 (MEng only)

Core Modules

Individual Project

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Industrial Consultancy

Work in teams to apply your knowledge and skills in a real-world context, often linked to industry. Explore the role of engineering consultancy in solving problems applying skills from previous modules and technical subject-specific knowhow.

Advanced Materials in Design

Through hands-on learning and materials selection tools, you will analyse historic developments in materials and apply this knowledge to design next-generation alloys that enhance performance, reduce costs, and promote sustainability.

Optional Modules

- + Hydrogen Technologies and Fuel Cells
- + Control and Machine Learning
- + Renewable Energy Systems
- + Nuclear Fuels Engineering
- + Mechatronics and Control Engineering
- + Nuclear Fusion



Mechatronic Engineering

BEng, MEng Hons

Our Mechatronics degree programme was the first of its kind in the UK, set up in 1984 in response to employers' needs. Forty years later, we continue to be a leader in the field. Mechatronic engineering is a mix of mechanical, electrical, electronic, computer and control engineering topics.

Your course takes a multidisciplinary approach and focuses on product design, control and system integration using embedded microcontrollers, field programmable gate arrays (FPGAs) and PCs.

Upon graduating, as well having the skills necessary to design mechatronic systems, you will also have the knowledge and confidence to apply new technologies, promote advanced design and introduce new and more efficient production techniques or processes. The broad technical understanding and leadership skills gained within the MEng makes Mechatronic Engineering graduates particularly attractive to industrial employers and provides the skills to move into management roles.

A particular highlight of the degree is the individual project chosen from a wide range of topics. Most projects involve automation and control and examples include underwater robotic manipulators, navigation of unmanned aerial vehicles, autonomous firefighting robots and development of an off-road electric mobility platform for wheelchair users.

Our Mechatronic Engineering programmes are accredited by the Institution of Engineering and Technology (IET) and the Institution of Mechanical Engineers (IMechE) on behalf of the Engineering Council.

Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future.

Information within this publication with respect to courses and modules is correct at the time of publication, and the University will make every reasonable effort to offer courses and modules as advertised. In some cases, changes may be necessary and may result in new modules or some modules and combinations being unavailable, for example as a result of student feedback, timetabling, staff changes and new research.

Year 2

Control and Robotics

Explore the fundamentals of control engineering and apply your knowledge to developing an autonomous robotic system in the laboratory. You will work as a team to refine your robot to complete tasks.

Engineering Mechanics

Learn the skills to analyse and design advanced mechanical systems subjected to general loads whilst focusing on the foundations of statics and dynamics with principles of structural mechanics.

Digital Electronics and Software

Discover how digital systems power the world around us, exploring digital electronics and learning how to design and implement them using industry standard hardware languages like VHDL and Verilog.

Electrical Circuits and Analogue Electronics

Explore how components in electrical circuits interact and examine how they behave when connected in various configurations. You will learn to analyse these circuits in real time and frequency domains using mathematical equations and computer simulations.

Power Engineering

Examine the fundamental concepts of electrical machines, power electronic converters and power systems. This module focusses on a range of AC and DC machines and how electrical power systems work from generation to distribution.

Machine Design

Topics covered include bearings, gears, shafts, couplings and threaded fasteners. Understanding of tribology friction and wear will teach you to design safer and more efficient machines that are cost effective and sustainable.

Year 3

Engineering Management and Entrepreneurship

Cover key areas to real-world engineering - scheduling, project risk management, quality, cost and resource management. Explore entrepreneurial topics including business model generation and market segmentation.

Mechatronic Systems and Automation

Learn the building blocks necessary to ensure successful design, integrating mechanical engineering with electronic and intelligent computer control to control our bipedal robot, Bradley.

Dynamic Systems

Explore the dynamic modelling of mechanical and mechatronic systems in time and frequency domain using a range of mathematical techniques with an emphasis on analytical and computational approaches.

Group Project (MEng only)

Collaborate in a multidisciplinary team to address a research problem or challenge set out by the School's industrial collaborators. Combine theoretical research with practical solutions and draw on your wealth of experiences from prior study.

Individual Project (BEng only)

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Optional Modules

- + Power Electronics and Applications
- + Digital Signal Processing

Year 4 (MEng only)

Core Modules

Individual Project

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Industrial Consultancy

Work in teams to apply your knowledge and skills in a real-world context, often linked to industry. Explore the role of engineering consultancy in solving problems applying skills from previous modules and technical subject-specific knowhow.

Mechatronics and Control Engineering

Tackle real-world problems in automation, robotics, or smart manufacturing. Use tools including MATLAB/Simulink and dive into emerging trends such as AI-enhanced control.

Control and Machine Learning

Study control theory's role in ensuring stability and robustness in safety critical systems and explore machine learning with MATLAB and Python, equipping you with the skill for real-world implementation.

Optional Modules

- + Electric Vehicles
- + Advanced Embedded Systems



Nuclear Engineering

BEng, MEng Hons

Studying Nuclear Engineering at Lancaster will provide you with a detailed understanding of nuclear technology and its implementation in modern industry, enabling you to pursue a career in a wide range of exciting fields including energy generation, decommissioning, medicine and fusion. Nuclear applications cover a broad range of sectors from healthcare and cancer treatment through to power generation, national security and decommissioning activities.

You will study several nuclear specific topics including decommissioning and sustainability, nuclear medicine, nuclear instrumentation and nuclear fusion engineering. Throughout, you will develop practical skills, test and analyse your design ideas in the laboratory and explore computer simulation using engineering IT tools.

All our Nuclear Engineering degrees are guided by world-leading research in nuclear instrumentation, nuclear decommissioning, and fusion. Through our collaborations with the UK Atomic Energy Authority, Sellafield Ltd, Westinghouse Springfields Fuels Ltd and others, the School is an international leader in nuclear engineering systems. Our strong links with these industrial partners nuance your learning and help you gain insight into nuclear industries.

Enhancing your curriculum

We continually review and enhance our course curricula to ensure we are delivering the best possible learning experience, and to make sure that the subject knowledge and transferable skills you develop will prepare you for your future.

Information within this publication with respect to courses and modules is correct at the time of publication, and the University will make every reasonable effort to offer courses and modules as advertised. In some cases, changes may be necessary and may result in new modules or some modules and combinations being unavailable, for example as a result of student feedback, timetabling, staff changes and new research.

Year 2

Fluid Mechanics and Mass Transfer

Explore the nature of fluids and their fundamental properties. You will develop a solid understanding of how fluids behave at rest and in motion and test your understanding in the lab.

Thermodynamics and Heat Transfer

Gain an integrated understanding of energy exchange mechanisms, focusing on heat and work transfer across different states and phases of matter. Acquire a competitive edge in shaping future sustainable energy solutions.

Nuclear Engineering

Trace the history of nuclear engineering through key figures (Roentgen, the Curies, Hahn and Heisenberg), examine pivotal events such as the Manhattan Project and delve into nuclear chemistry to grasp the core concepts of nuclear engineering.

Power Engineering

Examine the fundamental concepts of electrical machines, power electronic convertors and power systems. This module focusses on a range of AC and DC machines and how electrical power systems work from generation to distribution.

Engineering Materials

Gain knowledge and skills critical to analysis of material behaviour and failure prediction whilst aligning with UN Sustainable Development Goals through exploring material structure, properties and real-world application.

Nuclear Decommissioning and Disposal

Explore how we decommission nuclear facilities and methods for the ultimate disposal of radioactive material focusing on the Monte Carlo code, associated organisations, land remediation and other important topics.

Year 3

Engineering Management and Entrepreneurship

Cover key areas to real-world engineering - scheduling, project risk management, quality, cost and resource management. Explore entrepreneurial topics including business model generation and market segmentation.

Nuclear Monitoring and Protection

Study radiation detection modalities, data analysis and interpretation, the detection and measurement of energy, count level, energy spectra and dose and safety issues in nuclear engineering through design of a radiation detection system.

Power Electronics and Applications

This module introduces electronic switching devices and their role in single-phase and three-phase converters and inverters. You will have the opportunity to design medium and high frequency transformers for isolated power convertors.

Nuclear Medicine

Explore how cutting-edge technology is used to diagnose and treat diseases, uncovering the science behind radiobiological effects. Gain insight into key imaging techniques and advanced nuclear therapies including proton and neutron therapy.

Group Project (MEng only)

Collaborate in a multidisciplinary team to address a research problem or challenge set out by the School's industrial collaborators. Combine theoretical research with practical solutions and draw on your wealth of experiences from prior study.

Individual Project (BEng only)

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Year 4 (MEng only)

Core Modules

Individual Project

Deepen your understanding of a specific engineering topic through a detailed review, which will serve as a foundation for enhancing the technical content of your project. Projects often feature computer simulation, mathematical analyses and/or practical experiments.

Industrial Consultancy

Work in teams to apply your knowledge and skills in a real-world context, often linked to industry. Explore the role of engineering consultancy in solving problems applying skills from previous modules and technical subject-specific knowhow.

Nuclear Fusion

Learn the fundamental concepts of fusion energy, the candidate fusion reactions and how to extract useful energy from them. You will learn how to treat complex fusion systems in a holistic way.

Advanced Nuclear Engineering

Gain an in-depth understanding of the fuel system of a fission reactor looking at how different fuels and cladding have been used in past, present and future reactors. You will also learn about nuclear regulation and accidents in the sector.

Optional Modules

- + Renewable Energy Systems
- + Control and Machine Learning



“

*Lancaster taught me
how to think, adapt and
take initiative.*

”

Aaron

BEng Mechatronics Engineering
2023 graduate

As a Junior Estimating Engineer at UK Power Solutions, I design tailored distribution networks for electricity, gas and water connections across large residential and commercial developments in the Midlands. My work combines technical design with strategic thinking, balancing engineering integration, financial viability, compliance, construction risk and client expectations. Each proposal culminates in a detailed letter and technical drawing that ensure clarity and fairness in contractual obligations.

My degree played a pivotal role in preparing me for this. The academic rigour, supportive staff and hands-on projects didn't just teach me engineering, Lancaster taught me how to think, adapt, and take initiative. I have been entrusted with projects typically reserved for engineers two to three levels my senior, managing over £20 million in risk per proposal, not because I knew everything, but because Lancaster taught me how to learn.

One of my favourite memories was the spontaneity of student life, where a message could turn into a midnight game of table tennis or an impromptu night out. Those moments are very rare in the working world and I encourage every student to treasure them.



Junior Estimating
Engineer

UK Power Solutions

Lancaster University



£29,000

Median starting salary for
Lancaster graduates

HESA Graduate Outcome

Survey, 2023

Your future career

Our graduates are keenly sought after by employers in a range of industries, from small local businesses to large international corporations. Throughout your time at Lancaster, you will engage with project work and placement and internship opportunities to help prepare you for an exciting career as a graduate. Don't just take our word from it, our alumni really do value their experiences at Lancaster.

Amrit

Mechatronic Engineering

2023 graduate

**MAHLE Powertrain
Development Engineer**

I did a placement at Toyota Motor Manufacturing in Derby where they make the Toyota Corolla. I thought the placement year was invaluable, it was absolutely fantastic. That wasn't necessarily because of the role - I found that manufacturing wasn't the place for me. But, the confidence I had coming back to university and belief in my own abilities directed my grad role applications. I knew what I wanted and what I didn't. I also found it a lot easier to work in final year. I think doing a placement year was one of the best things I did!

Hannah

Mechanical Engineering

2022 Graduate

**Fraser-Nash Consultancy
Senior Engineer**

The general first year was very useful to my career. The nature of consultancy means most of our projects are quite interdisciplinary. Having a grasp not only of the mechanical side of things, but also the electrical and chemical grounding is invaluable in a lot of the projects I do.



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The information provided in this publication relates primarily to 2026 entry to the University and every effort has been taken to ensure the information is correct at the time of printing in June 2025. The University will use all reasonable effort to deliver the course as described but the University reserves the right to make changes after going to print. You are advised to consult our website at: lancaster.ac.uk/study for up-to-date information before you submit your application. Further legal information may be found at: lancaster.ac.uk/compliance/legalnotice.