Welcome

Materials is a discipline which influences every aspect of our lives, from the packaging that contains our breakfast cereals, to the cars, buses, trains and cycles that get us around, and to the very fabric of the buildings that we work and live in.

Developments in new materials are helping to solve grand challenges, such as providing us with more abundant and cleaner energy and advanced bioactive coatings to provide better healthcare solutions.

Materials science and engineering has been a core strength at Loughborough for over 50 years and we are one of just a few dedicated Materials departments in the UK. Over this time, we have developed a significant reputation for innovation and quality with leading industrial partners, who have high regard for our students and graduates, their degrees and our research.

Throughout your time at Loughborough, you will be part of a thriving, friendly teaching and research community. Upon graduation, you'll be equipped with all the knowledge and skills which are in demand by both industry and academia. Our excellent graduate recruitment figures are testament to this.

The department is housed in a newly-refurbished building with an impressive polymer processing plant, laboratories, teaching spaces, as well as a suite of world-class materials characterisation equipment. During your studies, you may choose to undertake a year working in industry, which will provide you with the opportunity to gain vital paid-work experience in a professional environment boosting your graduate employability prospects.

Studying at Loughborough is an enriching and valuable experience that opens routes to many career possibilities. We aim to realise the potential of all our students, and to help you find your place in the busy, exciting and fulfilling world of engineering.
Why study Materials at Loughborough?

Our fully accredited courses are proven and established within the field of Materials Engineering, meeting the specific requirements of the industry and relevant professional bodies.

We aim to provide you with an understanding of key functional and engineering materials, from the atomic scale upwards, including their processing and resultant properties. We pride ourselves in making high specification equipment available to our students, complimented by expert tuition and support.

Our reputation for high quality research feeds directly into the teaching you’ll receive. You’ll also get the chance to spend a year of your degree developing real-world expertise in industry, all whilst earning a salary.

Women in Engineering
In 1919, four female engineering students were admitted onto an entirely male dominated engineering programme at the then Loughborough Technical College. 100 years on and Loughborough University continues to celebrate women in engineering – through our annual memorial lecture dedicated to Claudia Parsons, one of the original four students. The University is a strong advocate for women in Science, Technology, Engineering and Mathematics (STEM) – creating a professional network of female engineers, celebrating women in engineering and showcasing what can be achieved in the field to future engineers.

The Loughborough Women’s Engineering Society (WES) offers support, networking and volunteering opportunities for all students. Many of our engineering departments have achieved Athena SWAN awards, recognising our commitment to advancing women’s careers in engineering.

Read more at: lboro.ac.uk/engineering/engineering-centenary

GOLD TEACHING EXCELLENCE FRAMEWORK 2017

ALL OUR COURSES ARE ACCREDITED

TOP 10 IN THE UK FOR OVERALL SATISFACTION NSS 2019

LOUGHBOROUGH UNIVERSITY

LOUGHBOROUGH UNIVERSITY
Engineer your career

If you are looking for hands-on industry experience with some of the world’s top companies, our School is the place for you.

All students are given the opportunity to undertake industrial training with a year in industry. During your placement year, you will work towards one of three Diplomas: Diploma in Industrial Studies (DIS) or Diploma in Professional Studies (DPS), both of which count as an additional qualification to your degree. Some students may opt to complete a Diploma in International Studies (DIntS) for work completed outside the UK.

This year of practical work gives you a clearer understanding of the industry, helping with the later stages of your study and deciding your future career direction.

You will be supported by dedicated staff in securing a placement that best suits your skills and professional aspirations.

During the placement year, your employer will nominate an industry specialist who will supervise you. You will also be visited by your University tutor at your place of work and will be required to write reports on your progress and experience.

The value of a placement year:

• Improved career prospects. A placement gives you real life experience that will help you stand out when applying for jobs. It can often lead to sponsorship during the final year of your course and a job offer upon graduation.
• Salary. Most placements are fully salaried, with average salaries from £15,000 to £20,000.
• Additional qualification. An additional diploma is awarded upon successful completion of a placement year.
• Professional skill development. A placement year helps you develop your skills in time management, team working, presentation skills and project management that will be essential for your future career.
• Put your knowledge to the test. It is your chance to put your knowledge gained during your degree into practice within a professional environment and get a feel for your future role.

A selection of the companies providing recent placements include:

- Bentley
- Caterpillar
- Deloitte
- GSK
- Horiba
- Innova Films
- Jaguar Land Rover
- Johnson & Johnson
- Meggitt
- Perkins Engines Company Ltd
- Sky
- Smiths Medical
- Virgin Media

We also offer a variety of postgraduate degrees in the Department of Materials. Find out more: lboro.ac.uk/materials

£17,500 AVERAGE PLACEMENT SALARY

DEDICATED UNIVERSITY STAFF TO HELP YOU FIND A PLACEMENT

MORE ENGINEERING STUDENTS ON PLACEMENTS THAN ANY OTHER UK UNIVERSITY

HESA UK STUDENT RECORD 2016/2017: ENGINEERING & TECHNOLOGY
Inspiring graduates

Your time at Loughborough will form a launchpad from which you can build an exciting career. With so many opportunities available, you’ll never be short of ways to improve your employability prospects.

Engineers have some of the top earning starting salaries due to the unique and specialist skill set. Chartered Engineers and Commercial Managers command even higher salaries and once you have reached this status you can expect to earn a salary of over £50,000 per year.

Our degree programmes provide you with a diverse skill set that include project management, communication, teamwork, leadership, critical thinking and analysis. These skills, combined with your specific, technical expertise, will set you up for a successful career.

The University holds its own engineering-specific careers fair. In recent years, this has had over 70 companies attending specifically to employ our students. This includes major consulting and contracting companies as well as more local and specialist firms.

Careers Network

Our award-winning Careers Network team is here to help and support you, offering everything from CV workshops, one-to-one advice sessions and mock interview practice sessions to delivering high-profile employer events. We’ve got everything you need for a successful future.

Find out more: lboro.ac.uk/services/careers

Anastasia

Materials Engineering graduate

Anastasia discusses how her experiences at Loughborough helped to shape her passion for engineering, manufacturing and business, leading to a career in consultancy after working in the aerospace sector during her studies.

“Materials Engineering at Loughborough truly managed to explain a lot about how products are made and why they work. Significant engineering expertise came from the course and internship experiences. More importantly, however, the degree taught me to not fear difficult problems, diving straight into projects and working hard to achieve high standards. The group of academics and supervisors in the Materials Engineering department proved to be not only great scientists and engineers, but also fantastic life mentors and friends – I doubt many students at other institutions can say the same.

On my year-long placement at Airbus, I got to perform research into next-generation wing spar alloys, manage subcontracted work and travel abroad to improve supplier quality. The complexity of the aerospace sector made me very interested in global manufacturing and entrepreneurship, leading me to pursue a master’s degree.

Now, I work at one of the world’s leading management consultancies helping companies leverage their skills and optimise their manufacturing processes for better productivity. Loughborough taught me the importance of sustainability, helping others and our responsibility for making the world a better place. In 10 years, I hope to find myself working alongside fellow alumni, building initiatives towards using ‘technology for good’.”
Outstanding facilities

The department is well equipped, with extensive laboratories containing state-of-the-art equipment in materials processing, testing, analysis, simulations and characterisation.

Our courses have a very practical focus and include considerable hands-on experience within our world-class laboratories. We have invested significantly in the quality of our equipment and laboratory spaces to offer our students an enhanced learning experience, extensive practical teaching and the opportunity to gain essential skills for future careers in industry.

New materials manufacturing facilities
We have fully refurbished the facilities on the west side of our campus, including the S-Building, home to our Materials department. This has made new laboratory space and equipment available to students including:

- A new IT-seater IT laboratory for taught sessions, but also available for project work and private study.
- Newly refurbished research laboratories including a new third floor suite of bioscience and biotechnology labs.
- An interactive learning facility – the ‘Igloo’ – that uses state-of-the-art software to create simulations of real-life engineering scenarios, e.g. working in hazardous areas of industrial plants. This allows small groups of students to engage with realistic situations in a safe and accessible environment.
- Extensive, state-of-the-art pilot materials engineering manufacturing facilities housing new industrial-scale equipment, with the addition of new mezzanine floors with experimental test facilities, providing flexible student space for computational/modeling work and project activities.

"Both the teaching quality and facilities are world-class. The new STEMLab is incredible. The lecturers are world-leading in their respective fields and are all more than willing to provide extra help to you during your time at Loughborough should you need it."

Oscar
Materials Science and Engineering BEng

STEMLab

STEMLab is a £17 million investment in new state-of-the-art laboratory facilities and part of a wider £25 million investment in our campus which includes an adjacent student learning and teaching hub.

STEMLab allows us to offer new ways to learn and collaborate, for example a ‘drop-in’ engineering workshop, alongside teaching laboratories, workshops, computer-aided design facilities, a design studio and informal learning spaces. Many of our Materials students’ laboratory and practical classes are taught in these facilities. Take an interactive tour of STEMLab lboro.ac.uk/stemlab

West Park Teaching Hub

Newly refurbished with superb modern facilities for teaching small to large student groups, the West Park Teaching Hub forms another part of the fantastic student learning experience we offer.

Loughborough Materials Characterisation Centre (LMCC)

The LMCC is a facility within the department that contains cutting-edge analytical instruments and is considered to be one of the best centres of its kind in Europe. We are continually investing in new equipment to ensure we are providing state-of-the-art facilities for all users.
Automotive Materials provides a comprehensive materials engineering programme designed to meet the needs of today’s automotive and transport sector to prepare you for an exciting career in one of the largest and most important industrial markets in the world.

It offers a special blend of materials engineering knowledge, linked to an appreciation of vehicle and engine design, plus the management skills and the awareness that is required of professional engineers.

Loughborough has a long-established history of teaching and research in automotive materials engineering and has been recognised by major automotive companies such as Ford, Jaguar Land Rover and Rolls-Royce, as leaders in education and research in the field.

About the course
Modern vehicles are built from a wide variety and complex mix of materials and every component must meet very stringent guidelines for safety, performance and environmental impact. The course is designed to provide in-depth knowledge of materials with a specific emphasis on applications within the automotive sector so that graduates are able to tackle these challenges and balance competition priorities.

Whilst the broad philosophy of the MEng and BEng is the same, MEng students are required to study a wider range of technical subjects with additional depth, including an additional group project in their final year.

Year 1
This year is made up of compulsory modules, providing you with an introduction to Materials and a solid grounding for the rest of your studies. Modules include Computer Aided Engineering, Thermodynamics, and an Introduction to Materials Science and Processing. In common with other Materials courses, Automotive Materials has a common first year allowing greater flexibility and mobility.

Year 2
This year allows more focus for you to develop your understanding of materials and automotive engineering. You’ll focus on the Fracture Materials Processing, Statistics, Materials Characterisation, and Vehicle Loading and Suspensions, as well as Vehicle Design and Development, to name a few.

Optional placement year/study abroad
Year 3 MEng/final year BEng
This year sees the introduction of optional modules, allowing you to specialise in your preferred areas of automotive engineering. Modules typically cover materials Modelling, Nanomaterials, and Entrepreneurship and Innovation. Compulsory modules include Functional Engineering, Vehicle and Component Design, and Automotive Crash Protection, and you’ll also work on your individual project.

MEng final year
This year comprises a number of optional modules with the majority of the year spent working on your group design project, a great opportunity to develop your project management skills. You’ll also work on other compulsory modules such as Materials Modelling, Vehicle Engine Analysis and Energy Materials, as well as optional modules to help you specialise in your chosen area.

Typical offers
A level: AAA (MEng) or ABB (BEng) including two from Maths, Physics and Chemistry
IB: (MEng) 37 (6,6,6 HL) or (BEng) 34 (6,5,5 HL) including any two from Maths, Chemistry or Physics at HL
BTEC Level 3 National Extended Diploma: D*DD (MEng) or DDM (BEng) with distinction in Maths units
GCSE: GCSE Maths grade 4/C

Typical offers correct at the time of print. Please check our website for the latest versions and other qualifications.

Please note that optional modules are subject to availability and timetable permitting.

The BSc in Materials Engineering is accredited by:

*Accredited in Industrial/Professional/International Studies

*Optional in Industrial/Professional/International Studies

Adam
Automotive Materials BEng

“Loughborough is well respected for the quality of its engineering courses and graduates, standing me in great stead when looking for a job in the future.”
We are ranked 2nd in the UK in the Engineering: Materials and Mineral category (Guardian University Guide, 2020) meaning we are one of the very best places to study this exciting subject area. It builds on our strengths in materials and bio-related disciplines across campus and offers students with a leaning towards bioscience and biotechnology a route into this important and growing area of materials. Application areas are in the health, sport and lifestyle sectors, in regenerative medicine, and in the context of a world-wide ageing population, biomaterials and medical device technology are developing fields that are set to continue to grow for many years.

About the course

Through a careful balance of lectures, practical sessions and case studies, you will develop a thorough understanding of the properties and capabilities of an extensive range of engineering materials. These can then be applied to a wide range of industrial contexts including: healthcare, regenerative medicine and medical devices, as well as aerospace, automotive, power generation and manufacturing amongst many others. You will also learn how to develop and process new materials so that they can be used within engineered systems and effectively drive new developments in products and technology. The management modules and project work form an important part of this course, preparing you for the workplace by developing crucial transferable skills.

This course not only teaches the theory and practice of Biomaterials Engineering, it is also designed to produce graduates trained in professional skills such as team working, presentation skills, project management and report writing. There are excellent career prospects for Biomaterials graduates, spanning the healthcare sector, sport, electronics, food and retail.

Year 1

This year is made up of compulsory modules, providing you with an introduction to Materials and a solid grounding for the rest of your studies. Modules include CAD and Engineering Drawing, Product Design, Mathematics and Thermodynamics. In common with other Materials courses Automotive Materials has a common first year allowing greater flexibility and mobility.

Year 2

This year allows more focus for you to develop your understanding of biomaterials and engineering. You’ll focus on more biology-focused modules such as Anatomy and Physiology, and Chemical and Biochemical Processes, as well as Materials Processing and Materials in Service.

Optional placement year/study abroad

Year 3 MEng/year 4 final year BEng

This year sees the introduction of optional modules, allowing you to specialise in your preferred areas of biomaterials engineering. Modules typically cover Project Management, Entrepreneurship and Innovation. Compulsory modules include Biomedical Component Design, Biomaterials for Drug Delivery and Composites Materials.

MEng final year

This year comprises a number of optional modules with the majority of the year spent working on your final year dissertation. The dissertation is a great opportunity for you to explore the topic of your choice, and to show that you have project management skills – an important transferable skill. You’ll also work on other compulsory modules such as a group design project, Materials Modelling and Advanced Chemical Engineering, as well as optional modules which will allow you to focus on areas of biomaterials that interest you the most.

Typical offers

A level: AAA (MEng) or ABB (BEng) including two from Maths, Physics, Chemistry and Biology

IB: (MEng) 37 (6,6,6 HL) or (BEng) 34 (6,5,5 HL) including any two from Maths, Biology, Chemistry or Physics at HL.

BTEC Level 3 National Extended Diploma: D*DD (MEng) or DDM (BEng) in a relevant subject with distinctions in Maths units

GCSE: GCSE Maths grade 4/C

*A diploma in Industrial/Professional/International Studies

Typical offers correct at the time of print. Please check our website for the latest version and other qualifications.

Please note that optional modules are subject to availability and timetable permitting.
We are one of the very best places to study this exciting subject area, being ranked 2nd in the UK for the Engineering: Materials and Minerals category in the Guardian University Guide 2020.

Covering the fundamentals, this degree will give you the opportunity to explore – while deepening your knowledge and understanding of the scientific, engineering and design aspect of materials, their structure, properties, processing, in-service behaviour and environmental impact.

About the course
The course delivers both the theory and the essential industrial relevance employers seek from graduates. The course content encompasses all aspects of materials; their selection, manufacture, testing, assembly and environmental impact both during production and at the end of life.

Through a careful balance of lectures, practical sessions and case studies, you will develop a thorough understanding of the properties and capabilities of metals, polymers, ceramics and composites, which can then be applied to a wide range of industrial contexts including aerospace, automotive, power generation and distribution, IT and manufacturing amongst many others.

You will also learn how to develop and process new materials so that they can be used within workable components and effectively drive new developments in products and technology.

Whilst the broad philosophy of the MEng and BEng is the same, MEng students are required to study a wider range of technical subjects with additional depth, including an additional group project in their final year.

Year 1
This year is made up of compulsory modules, providing you with an introduction to Materials and a solid grounding for the rest of your studies. Modules include Computer Aided Engineering, Thermodynamics, and an Introduction to Materials Science and Processing. In common with other Materials courses, this course has a common first year allowing greater flexibility and mobility.

Year 2
This year allows more focus for you to develop your understanding of materials science and engineering. You’ll focus on the Fracture Mechanics of Materials, Materials Characterisation, Materials Modelling and Mathematics for Materials.

Optional placement year/study abroad
Year 3 MEng/final year BEng
This year sees the introduction of optional modules, allowing you to specialise in your preferred areas of materials science. Modules typically cover Project Management, Entrepreneurship and Innovation. You’ll also get the chance to study Biomedical Component Design and Automotive Crash Protection. Compulsory modules include Composite Materials, Vehicle and Component Design and Functional Materials, and Advanced Processing Methods and you’ll also work on your individual project.

MEng final year
You’ll be working on a group design project in this academic year, allowing you to develop project management skills, but you’ll also focus on optional modules meaning that you can explore topics of your choice. Further compulsory modules include Plant Engineering, Materials Processing, and Materials Modelling.

Typical offers
A level: AAA (MEng) or ABB (BEng) including two from Maths, Physics and Chemistry
IB: (MEng) 37 (6,6,6 HL) or (BEng) 34 (6,5,5 HL) including any two from Maths, Chemistry or Physics at HL
BTEC Level 3 National Extended Diploma: D*DD (MEng) or DDM (BEng) with distinction in Maths units
GCSE: GCSE Maths grade 4/C

*Up to 5 September 2021

"I recommend my course to anyone seeking academic challenges. It will definitely support and influence your future career."
If you don’t have a scientific background, or the relevant grades to enrol onto one of our Materials courses straight away, then a foundation year is for you.

Our Foundation Studies course is primarily for those who wish to embark on an exciting career in Materials Engineering but are missing prerequisite subjects required or whose existing qualifications are not usually considered directly relevant for entry onto the core degree.

Our International Foundation course is designed for high-calibre international students who have successfully completed 12 years of education but need an extra year of study to apply for a UK undergraduate degree.

Loughborough also offers an Elite Athletes pathway for students who perform at a very high standard in their chosen sport and wish to study at Loughborough, but do not have the required qualifications due to sporting commitments.

About the course
If this is your situation, then one of our Foundation Studies courses could be what you require to bridge the gap in your studies and provide the platform for successful progression into the world of materials engineering. Completing your foundation year will enable you to progress onto the first year of a course within the department, provided the relevant progression criteria are met.

You will be taught by University staff, including specialist Foundation Studies teaching staff. You will be a full member of the Loughborough family, with the same access to the Students’ Union, clubs, societies, sports facilities and support.

Completing a foundation year can be a real attribute to your overall degree success. It not only opens doors to courses that may have previously looked closed, but also provides a sound base on which to establish a successful academic career. Many who have completed the foundation year also said how beneficial it was, supporting their transition into University life.

Module overview
The Foundation Studies programme provides a background of mathematical and physical sciences, along with other essential subjects in materials engineering, designed to prepare you for successful progression onto the first year of your chosen degree programme.

Upon successful completion of this foundation course, you’ll be able to progress onto the following courses:

- Automotive Materials BEng
- Automotive Materials MEng
- Biomaterials Engineering BEng
- Biomaterials Engineering MEng
- Materials Science and Engineering BEng
- Materials Science and Engineering MEng

Oscar
Materials Science and Engineering BEng with Foundation Year

“Loughborough University offered the best possible Materials Engineering course. As my A levels did not go to plan, I had the option of choosing another university, with a lower course ranking and entry requirements. However, I chose to go through the foundation year route at Loughborough to confirm to myself that going to Loughborough was the right choice for me.”
This brochure was written several months in advance of the academic year to which it applies (2021). Every effort has been made to ensure that the information contained within is accurate at the time of publishing, but updates (for example to course content) are likely to occur due to the time between publication and the course start date. It is therefore important to visit our online prospectus at www.lboro.ac.uk/study before applying to check for any updates, as this will be the most up-to-date repository of information.