



QUEEN'S
UNIVERSITY
BELFAST

MECHANICAL ENGINEERING

EXCELLENT INTEGRATION OF THEORETICAL AND PRACTICAL MODULES

Opportunity to participate in formula student competition to design and build a racing car and compete against other UK institutions at Silverstone

ACCREDITED PROGRAMME

Accredited by the Institution of Mechanical Engineers

INDUSTRY PLACEMENT OPTION

With unique support from our dedicated placement officer

SHAPING A
BETTER WORLD
SINCE 1845

MECHANICAL ENGINEERING



Why study Mechanical Engineering?

If you are fascinated by how machines work, Mechanical Engineering is the degree for you. As a Mechanical Engineer, you can use your skills in maths and science for designing medical devices, mobile phones, motorcycles, robots, Formula 1 cars or aircraft. In fact, virtually all man-made products have mechanical features designed and developed by mechanical engineers, so this degree can open up the door to opportunities across a large number of industries.

Our graduates enjoy success in challenging, rewarding and diverse professional roles, from designing and testing the latest vehicles to developing new sustainable forms of materials. You could go on to tackle some of the biggest eco-challenges of modern society by designing

mechanisms to reduce car emissions and fuel consumption or by finding alternative energy sources.

You'll benefit from our strong industry links with major employers, both locally and internationally, including Bombardier, Caterpillar, ExxonMobil, Ford, Jaguar Land Rover, Lotus, McLaren F1, Michelin and Rolls Royce. As well as equipping you with mechanical design and engineering skills, we'll also help you to develop a range of multidisciplinary skills such as numeracy and analytical ability, as well as presentational and team-working skills, which can be transferred to a number of other career fields. For this reason, our engineering graduates can more easily exploit their skills in the wider commercial, financial or public sectors and progress to senior management roles.



Course Director
Dr Gary Menary

Who will be teaching you?

Queen's School of Mechanical and Aerospace Engineering has a reputation for exceptional research and teaching that spans over 100 years. Through our research-led teaching you will be working with academics currently ranked 6th in the UK for research intensity (Times Higher Education rankings based on REF 2014), and you'll have the opportunity to engage with industry experts. Our exceptional teaching is reflected in our subject rankings: we're positioned joint 14th in the UK for manufacturing engineering in the Times and Sunday Times Good University Guide 2018. We're also ranked in the top 200 universities in the world for engineering and technology (QS World Rankings by Subject 2017).

Your study options

There are two course structures available: BEng Honours, and MEng Honours. The BEng degree is a three-year programme of study, while the four-year MEng programme extends study to in-

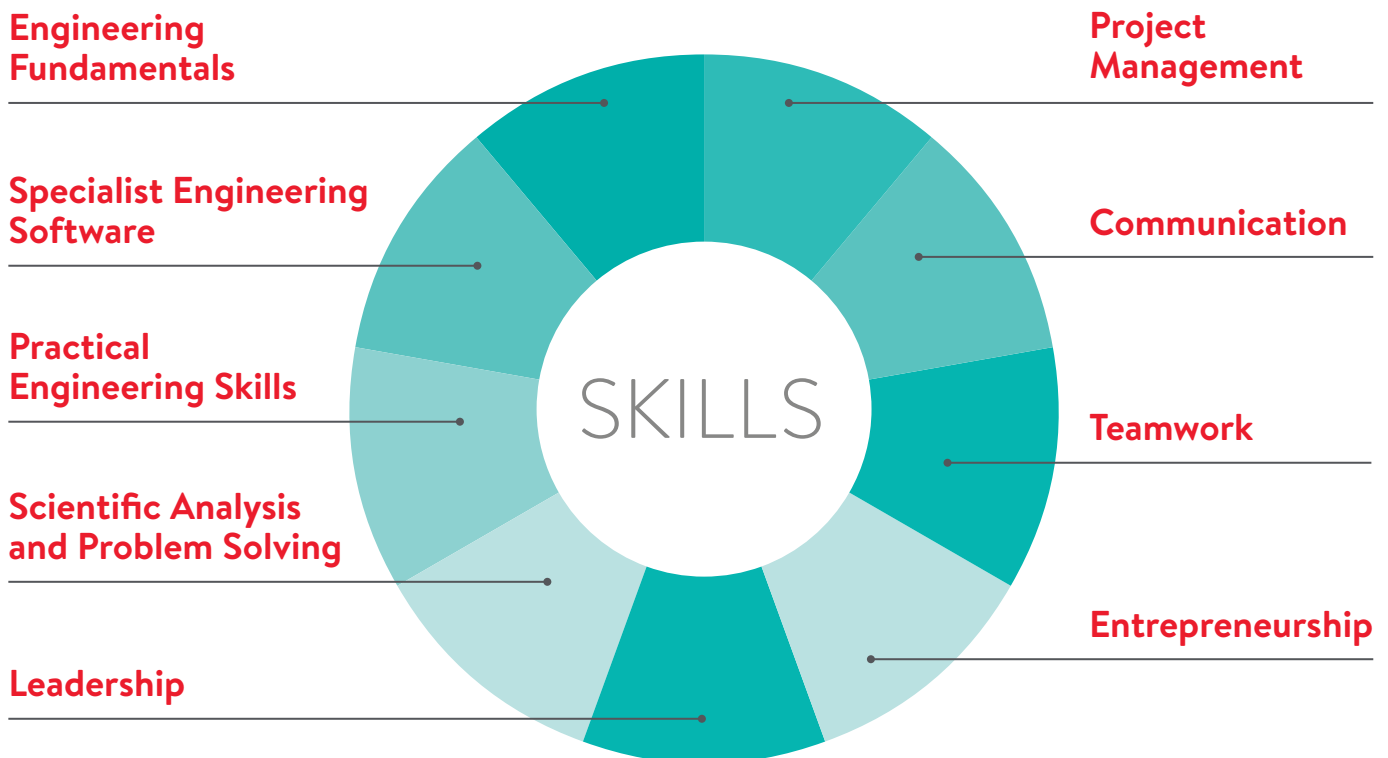
depth specialist topics, with the aim of producing future engineering leaders.

The first two years of the MEng are shared with the BEng, during which you will be introduced to the core Mechanical Engineering principles and the concept of professional engineering practice. At the end of the second year, BEng students have the opportunity to transfer to the MEng.

All of our Mechanical Engineering degrees come with the option of a sandwich year in industry. You can spend up to 12 months getting hands-on experience in a real engineering environment within a relevant engineering company. Past students have been placed with global giants including Airbus, Red Bull technology and Mercedes Benz High Performance Engines.

Additionally, there are opportunities to work or study abroad through the International Association for the Exchange of Students for Technical Experience (IAESTE), Erasmus, Study Abroad and Study USA

WHAT YOU'LL LEARN



exchange programmes. In recent years, students have undertaken placements in companies in Argentina, Brazil, Canada, Finland, France, Japan, Malaysia and the USA.

Our subject areas

Stage 1: Students are introduced to core mechanical engineering principles. They also undertake a team-based project, designed to introduce them to the concept of professional engineering practice. This is supported through modules in engineering design and a dedicated laboratory programme.

Stage 2: Stage 2 builds on the knowledge gained in Stage 1 with a series of more advanced engineering science subjects including dynamics, thermodynamics and fluid mechanics, and mechanics of materials. Mathematics and computing focuses on their application to engineering, while modules in Technology Design and Manufacturing provide hands-on practical experience of manufacturing processes and computer-aided design. Students

are also introduced to the legal aspects of engineering practice in the professional studies module, and are given the skills required for future work placements and careers in the employability module. BEng students who perform well during Stages 1 and 2 may be invited to transfer to the MEng at the end of Stage 2.

Stage 3: Optional modules in the areas of energy, materials, manufacturing and computer-aided engineering in Stage 3 give students the opportunity to tailor courses and projects to their particular interests. BEng students take core modules in engineering science and professional studies along with their chosen optional modules. They also complete a major individual project, which puts their engineering skills into practice in solving a technical problem. MEng students expand their engineering knowledge through a range of core modules in engineering science and professional studies, along with their chosen optional modules. They also undertake a major group design project, working within teams to

conceive, design, build and test an engineering product, enhancing mechanical design and engineering skills and developing professional, presentational and team-working skills.

Stage 4: MEng students extend their knowledge of engineering applications through further optional modules in advanced core topics and in professional studies. The other major focus is the individual project, where students also apply their engineering skills to an area of cutting-edge technology. These projects are closely associated with industry and with the School's current research interests.

Practical skills: You'll have the opportunity to understand what the role of a practicing Mechanical Engineer is and to bring module content to life through project-based learning. This is supported by a recent £17million investment in our state-of-the-art laboratory and teaching facilities including a dedicated design studio.

OUR PEOPLE



Through Queen's I've been lucky enough to get the opportunity to study for the summer in China, and return the following year to show a group project at an exhibition. I undertook a placement year as a project management intern with HeartSine Technologies, Stryker Belfast. With the support and guidance of my personal tutor and other academic staff I applied and was successful for the Royal Academy of Engineers Leadership Scholarship and won the Target Jobs Female Undergraduate of the Year 2019, for which the prize was a summer internship with Rolls Royce plc. This has led to my Master's project being sponsored by Rolls Royce and an offer for a Graduate job.

Judith Cameron

MEng Mechanical Engineering



My decision to study engineering was influenced by my interest in problem solving and working with numbers. It was my opportunity to develop skills and technical expertise in the design and creation of products and systems that impact modern day living.

Niall Hollywood

BEng Mechanical Engineering

Individual projects

One of the most fascinating parts of your degree is the opportunity to undertake an individual project in Stage 4. This gives you a chance to engage with the mechanical engineering design and development process, and bring your knowledge to life, while embedding core skills in project management, reporting and presentation skills. You'll develop your research skills in tandem with your technical and practical skills.

Your career prospects

Our Mechanical Engineering degrees are accredited by the Institute of Mechanical Engineers and our students benefit from our long-standing relationship with key industry players including Bombardier, Caterpillar, ExxonMobil, Ford, Jaguar Land Rover, Lotus, McLaren F1, Michelin and Rolls Royce.

We support you in gaining experience within an industrial company, either with a year in industry or as part of an internship or placement. Meanwhile, our

Engineering Leadership Programme will prepare you for the challenges of industry and business and ensure that you are capable of integrating seamlessly into a company after graduation, prepared to lead complex projects.

The result is versatile graduates who have the skills to succeed in a wide range of careers and who are valued by employers locally, nationally and internationally. You could go on to enjoy success as a chartered engineer, or transfer your skills into other sectors, for example, information technology or management consultancy.

Further study is also an option – students can choose from a range of Master's programmes as well as apply to do a PhD from a comprehensive list of research topics; see the School website for further information.



Why study Mechanical Engineering?

Our BEng/MEng degree programmes are accredited by the Institute of Mechanical Engineers providing you with a solid foundation for your career. A MEng degree in aerospace, from Queens, satisfies all of the academic requirements for registration as a Chartered Engineer (CEng). We have excellent links with the professional engineering institutions and benefit from their support.



To discuss your options in more detail
or if you have any questions contact:



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FIND OUT MORE ABOUT OUR MECHANICAL ENGINEERING COURSES:

<http://go.qub.ac.uk/mechanical>

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FACULTY OF
ENGINEERING
AND PHYSICAL
SCIENCES