QUEEN'S UNIVERSITY BELFAST

PRODUCT DESIGN ENGINEERING

ACCREDITED PROGRAMME
Accredited by the Institution of Mechanical Engineers.

TAUGHT IN-CONTEXT
The CDIO™ educational framework is applied.

HIGH EMPLOYMENT RECORD
High quality jobs in a variety of sectors.

SHAPING A BETTER WORLD
SINCE 1845

PRODUCT DESIGN ENGINEERING

Why study Product Design Engineering?

If you have a passion for understanding how things work or how you can make them better, then Product Design Engineering could be for you. This programme combines creative design skills with technical engineering skills to develop products from concept to working prototype.

A variant of our Mechanical Engineering degree, Product Design Engineering connects content from different modules through team-based and individual projects. We equip our graduates with the broad and balanced skillset required for product design and manufacture.

Our teaching is carried out in the context of conceiving, designing, implementing and operating products or systems, so you'll graduate prepared for professional practice. You'll be encouraged to be as innovative as possible throughout the design process but also to apply your engineering knowledge to design methodology, materials, manufacturing and analysis.

This combination of creative and technical skills will give you the edge in the graduate job market and our graduates are in demand by both manufacturing companies and design consultancies. You could go on to design and manufacture cars, domestic appliances, electronics or medical devices. Recent graduates have secured positions in industry giants like Dyson, Lotus and Intel, but our graduates fit in equally well in small, dynamic companies, thanks to their strong team-working skills.

Course Director
Dr Charles McCartan

Who will be teaching you?

Our Product Design Engineering course is based at the School of Mechanical and Aerospace Engineering, which 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).

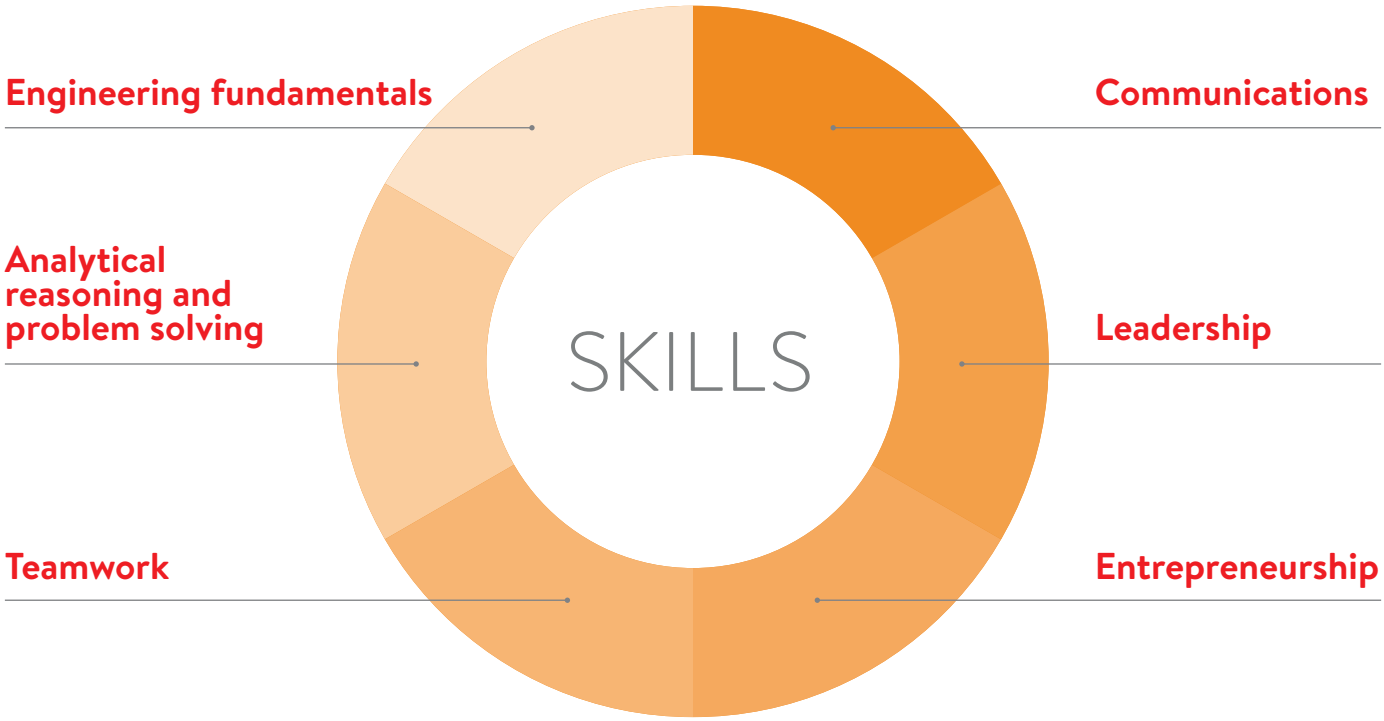
Your study options

There are two course structures available: BEng Honours, and MEng Honours. The BEng degree is a three-year programme of study, with an additional year on industrial placement if you choose the sandwich pathway. Likewise, the MEng degree is a four or five-year programme of study. Both courses develop engineering analysis and problem solving skills, underpinned with science and maths, and complimented with industry-standard computer-aided-engineering tools, equipment and facilities. There is a design spine throughout the courses, with practical hands-on experiences from start to finish.

The MEng degree further develops skills in creativity, innovation, teamwork, management and provides a critical appreciation of the product development process through a realistic, industrial project setting. It also provides a deeper knowledge of materials, software tools, manufacturing processes and business.

The first two years of the MEng are shared with the BEng, during which you will be introduced to design methodology and the production

WHAT YOU'LL LEARN



and testing of prototypes. At the end of the second year, BEng students who demonstrate a high level of performance have the opportunity to transfer to the MEng.

All of our Product Design 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 organisation. Placement students are supported in finding the right environment for their skills by our dedicated placement officer.

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 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: The emphasis is on engineering science fundamentals. Additionally:

- Computer-Aided Design (CAD) modules develop a key skill needed for project work in subsequent years
- Short design-built test projects concentrate on engineering fundamentals and teamwork
- The Introduction to Product Design module develops specific skills related to ideation, problem-solving and design methodology

Stage 2: Student projects form a significant part of Stage 2, focusing on the production and testing of prototypes, along with an understanding of the influence of manufacturing processes on design.

Supporting modules enable the application of relevant technical knowledge, professional skills and attributes.

Stage 3: In Stage 3, BEng students undertake a major individual project while MEng students work in groups on their major project.

Additional industry-focused project activities are supported by a number of external collaborators. Engineering science subjects focus on materials, manufacturing and computer-aided analysis.

MEng (Stage 4): Advanced modules focus on engineering design, analysis and materials. Students also carry out an individual project, where they apply their engineering skills to an area of existing or new technology. These projects are inspired by industry and the School's research interests.

Practical work: Project work forms an important part of our programmes with the opportunity to complete individual and group projects as well as industry-focused projects supported by industry leaders and employers. Our emphasis on hands-on, project-based learning is supported by our state-of-the-art facilities and flexible project spaces.

OUR PEOPLE

"Throughout my time on the course I was given many opportunities to put myself outside of my comfort zone, I feel that this has really prepared me for the world of work. This includes; working in teams for projects where every member must have a role, presenting the final idea at the end of the project to the company and having the opportunity to up sticks and move to a completely different country for six months."

Amy Brimage
Design Engineer at
Crossland Tankers

"The appreciation of the bridge between designers, engineers, and end users is fundamental and I don't think I would have fitted as well into my roles as I do if I had done any other course. In my current roles, my broad knowledge of manufacturing methods, materials, design methods and business functionality allows me to get on terms with all sorts of clients very quickly.

Paul W D McConaghie
Operations Manager
at Peak NDT Ltd.

"My degree was the perfect balance of classical engineering principles and modern design techniques. It allowed me to focus and refine the skills I had learnt in Art, Design and Technology into a practical and rewarding career. It also taught me valuable life skills in delivering presentations, practical 'hands-on' prototyping and leadership. Unlike some other design courses it provided the full suite of design process elements such as marketing, branding, project management and finance."

Thomas Ward
Senior Design Engineer
at James Leckey Design

Our International Reputation

The School has an international reputation for its contributions to the development of engineering education by playing a leading role in the CDIO™ initiative (www.cdio.org). This innovative educational framework for producing the next generation of engineers provides students with the ability to conceive, design, implement and operate real-world systems and products. Hence, our graduates are better prepared for professional practice.

Additionally, the curriculum is heavily informed by industry representatives who sit on an advisory board within the School.

Your Career Prospects

Our students benefit from our long-standing relationships with companies such as Bombardier, Caterpillar, ExxonMobil, Ford, Jaguar Land Rover, Lotus, McLaren F1, Michelin and Rolls Royce.

The majority of our graduates succeed in securing high-quality jobs in the field of product design engineering, working in manufacturing companies or design consultancies. They are in-demand across a variety of sectors including the automotive industry, domestic appliances, electronics, packaging, materials handling, polymers, renewable energy, aerospace and medical devices.

Companies employing recent graduates include Glen Dimplex, Dyson, Lotus, Survitec, Rockwell Collins, Terex, Leckey Design, Seven Technologies, Whale, Solmatix, Andor, Kingspan Environmental, Nacco, Intel and Accenture.

Whilst the vast majority of graduates are employed in product design or design engineering, others have successfully transferred their skills to develop careers in other sectors such as management and education. Further study is also an option – several students have gone on to study for a PhD. The course provides excellent preparation for Doctoral studies within the School, particularly in the areas of advanced materials and manufacturing. A few have chosen to study for a Postgraduate Certificate in Education (PGCE), becoming Technology or Mathematics teachers.

EMPLOYER COMMENTS

"The Product Design Engineering course at Queen's University Belfast has been tailored to better meet the needs of the employer. The course ensures the students study modules most suited to the real life Mechanical Product Design Engineer and hence the induction time for a new engineer is significantly reduced.

The work placement also has a big impact in giving the student a real life design environment. If this course had been available when I was a student it would have been my first choice"

Richard Bovill,
Design Engineering Manager,
Munster Simms Engineering Ltd

"All three (placement) students were talented individuals who were very capable of taking a short design brief, interpreting the key details and basically getting on with it with little or no intervention by the Manager.

The students on the PDE course that we have collaborated with have all come into the company and provided us with different design methodologies that we can embed within the company and utilise to our benefit."

Hugh Ross
Managing Director,
Canyon Europe Ltd

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

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FIND OUT MORE ABOUT OUR PRODUCT DESIGN ENGINEERING COURSES:

http://go.qub.ac.uk/productdesign

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FACULTY OF ENGINEERING AND PHYSICAL SCIENCES