

Product Design and Management MSc (Eng)

COURSE DETAILS

- Full-time: 12 months

KEY DATES

- Apply by: [29 August 2025](#)
 - Starts: 22 September 2025
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Course overview

The aim of this MSc programme is to provide you with advanced training in all major aspects of product design from conceptual design, and product modelling to prototyping to a high level of competence. This programme will train you to develop reliable, high-quality products with true market appeal, within the budgets and tight timescales demanded by competitive businesses.

INTRODUCTION

You'll gain detailed expertise in product design's key concepts, tools and methodologies.

There's a strong practical element and you'll develop your skills through individual and group projects, using facilities that include:-

- CAD (CREO)
- Rapid prototyping
- Reverse engineering

As well as receiving excellent tuition from our world-renowned academics you'll be able to listen to visiting product designers and professors from the Royal Academy of Engineering talk about advanced concepts and case studies.

WHAT YOU'LL LEARN

You'll gain detailed expertise in product design's key concepts, tools and methodologies, including:-

- Innovative product development and design techniques
- 3D modelling
- Materials selection

- Industrial design
 - Rapid prototyping
 - Total quality management
 - Marketing.
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ACCREDITATION

This programme is fully accredited by the Institution of Mechanical Engineers.

Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

SEMESTER ONE

Your first semester will introduce you to additive manufacturing, 3D tool and techniques used by designers, processes used during the initial stages of new product development, and the relationships between materials properties and the influence of processing on them.

UK students are exempt from **Technical Writing for Engineers** and should instead take **Project Management**. EU/International students with strong English language skills can be exempt as well, subject to Programme Director's approval.

COMPULSORY MODULES

MATERIALS PROCESSING AND SELECTION (MATS520)

Credits: 15 / Semester: semester 1

This module introduces the relationships between materials properties and the influence of processing on them. A range of manufacturing processes is considered for ceramics, polymers, metals and composites. The Granta – Cambridge Engineering Selector software is used to inform the selection of materials processing and the inter-relationships with design.

COMPUTER AIDED DESIGN (MNFG604)

Credits: 7.5 / Semester: semester 1

To introduce the student to the latest 3D tools and techniques used by designers.
To develop a wider knowledge and understanding of integrated systems design.
To stimulate an appreciation of modern design and development methodologies.

EARLY STAGE NEW PRODUCT DEVELOPMENT (MNFG601)

Credits: 15 / Semester: semester 1

The module introduces students to tools and processes used during the initial stages of new product development. It is taught using occasional lectures, intensive sketch modelling studio classes and a comprehensive coursework assignment. Successful individuals will have acquired knowledge and understanding at mastery level of the tools and processes involved and how they are executed in a modern industrial environment.

TECHNICAL WRITING FOR ENGINEERS (ENGG596)

Credits: 7.5 / Semester: semester 1

To develop technical writing skills for engineers. English Language Centre deliver the module for non-native English speakers, Engineering staff deliver identical syllabus, assessments and learning outcomes for other students.

ADDITIVE MANUFACTURING (MNFG603)

Credits: 15 / Semester: semester 1

This module aligns our graduates with the market needs. The UK additive manufacturing market was valued at 0.54 billion pounds sterling in 2022 and is predicted to reach 2.01 billion pounds sterling by 2030, with a compound annual growth rate of 18.0% from 2023 to 2030.

GROUP ENGINEERING DESIGN (MECH401)

Credits: 15 / Semester: whole session

To present the fundamental principles of Engineering Product Design according to the Total design methodology.

To engage students in a multi-disciplinary group project to develop and justify an innovative engineering solution/product that is part of a grand challenge which is formulated from complex and uncertain factors.

To develop students team working, communication, project management, problem solving and critical evaluation skills.

To formulate a theoretical novel solution that is supported by valid evidence and meets an authentic need.

OPTIONAL MODULES

PROJECT MANAGEMENT (MNGT502)

Credits: 7.5 / Semester: semester 1

Project Management is a core skill for professional engineers of all types and a sound education in this subject area is required by the professional accrediting bodies. The knowledge and skills developed in this module will equip students for their future UG project work and for their careers ahead.

This module teaches students the theory of fundamental techniques in project management, risk management, and cost management.

In this modules student undertake a group "virtual project" in which they undertake all stages of project management involved in a major construction projects. The five virtual project tasks require students to apply their theoretical learning; and they provide an opportunity to develop key professional skills.

Any optional modules listed above are illustrative only and may vary from year to year. Modules may be subject to minimum student numbers being achieved and staff availability. This means that the availability

of specific optional modules cannot be guaranteed.

SEMESTER TWO

In your second semester, you will learn the principles of advanced manufacturing techniques using lasers, the tools and methods of Eco-design, energy generation and usage, and the concepts of Entrepreneurship, Intrapreneurship, Company Infrastructure and Investment Proposals.

You'll get a good understanding of a wide range of aspects of the design function in a manufacturing company, in particular a comprehensive understanding of the Design Process. You will even get hands-on with modelling software to learn what it takes to bring a new product off the drawing board, through virtual development, and into a modern pre-tooling 'pre-sales' promotional environment.

COMPULSORY MODULES

ADVANCED MANUFACTURING WITH LASERS (MECH607)

Credits: 15 / Semester: semester 2

This module provides an understanding of the principles of advanced manufacturing techniques using lasers and how these are being explored through current/recent research and adopted by industry.

ENTERPRISE STUDIES (MNGT414)

Credits: 7.5 / Semester: semester 2

The module teaches the concepts of Entrepreneurship, Intrapreneurship, Company Infrastructure and Investment Proposals. It is taught using lectures, class questions, case studies and a comprehensive coursework assignment. Successful students will have acquired knowledge and understanding at mastery level of the process and how it is executed in a modern industrial environment.

MANAGEMENT OF DESIGN (MNGT413)

Credits: 7.5 / Semester: semester 2

To enable students to develop a general understanding of a wide range of aspects of the design function in a manufacturing company and its management, and in particular a comprehensive understanding of the Design Process. The core of the module is a detailed study of a six-phase model of the Design Process derived from several authors and BS7000: Product Planning and Feasibility; Design Specification; Conceptual Design; Embodiment Design; Detail Design; Post-Design-Release.

PRODUCT MODELLING & VIRTUAL REALITY (MNFG608)

Credits: 15 / Semester: semester 2

Welcome to Product Modelling & VR.

This module provides a continuance to the subjects and topics covered in Product Design 1 and an opportunity to apply them to a detailed project. This module also includes an overview and introduction to the area of modelling and virtualisation in design on a practical level. During the next 12 weeks, modelling and simulation will be examined, discussed and analysed by relating theories to practice in a 12 week long product design and development project.

Students will examine what it takes to bring a new product off the drawing board, through virtual development. Students will also be encouraged to examine how this process is inextricably linked to achieving success in the development of new products.

Students will learn:

Through Discussion: Perhaps the most important mechanism, discussion involves everyone. Moreover, without discussion, we cannot identify that you have grasped the basic principles. Sharing is an important learning mechanism. Do it often.

Through Written Assignments: Written assignments help us to look at you individually. You can sometimes "hide" in the group, but with individual written assignments, we are able to judge your compliance with learning outcomes and see where you have strengths and weaknesses.

The development of exceptional design modelling and visualisation skills has become increasingly crucial to sustaining economic growth in the dynamic global economy.

The ability to confidently use leading design and simulation tools is now considered key to long-term organizational success. Students nearing graduation must therefore learn the keys to this approach in order to become effective managers in the 21st Century. Once managers adopt a posture which includes these modern tools and techniques, they will be able to better deliver true market opportunities and exploit those opportunities with speed and confidence.

GROUP ENGINEERING DESIGN (MECH401)

Credits: 15 / Semester: whole session

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To develop students team working, communication, project management, problem solving and critical evaluation skills.

To formulate a theoretical novel solution that is supported by valid evidence and meets an authentic need.

Any optional modules listed above are illustrative only and may vary from year to year. Modules may be subject to minimum student numbers being achieved and staff availability. This means that the availability of specific optional modules cannot be guaranteed.

FINAL PROJECT

Over the summer you will have the opportunity to plan, carry out and control a research project at the forefront of your academic discipline, where you will work independently to answer a research question based on your specialism area.

You'll use your research, literature searching and specific skills you have learned during the previous semesters to highlight your abilities.

You'll present an outline to your supervisor, create an interim report, and finally a dissertation.

COMPULSORY MODULES

MSC(ENG) PROJECT (60 CREDITS) (ENGG660)

Credits: 60 / Semester: summer

The purpose of the project is to provide students with the opportunity to plan, carry out and control a research project at the forefront of their academic discipline, field of study or area of professional practice. The student will report findings both orally and in writing. Detailed instructions are provided in the PG handbook distributed at the outset of the programme.

Any optional modules listed above are illustrative only and may vary from year to year. Modules may be subject to minimum student numbers being achieved and staff availability. This means that the availability of specific optional modules cannot be guaranteed.

HOW YOU'LL LEARN

You'll learn across a variety of teaching methods, like lectures, seminars, and tutorials. You'll also get hands-on experience designing sketch models and using micromachining lasers to build your portfolio.

You'll either work on these assignments on your own or in a group project. After that, you'll present your findings to the other students and the module leader, which will lead to a group discussion. This is a formative exercise, so you may even get feedback from your peers on your presentation.

HOW YOU'RE ASSESSED

Across your modules, you'll be assessed in a number of different ways, including exams, lab activity, case studies, business plans, and project journals.

Your final project work will be based on a topic of industrial or scientific relevance, and will be carried out in laboratories in the University or at an approved placement in industry. You'll examine this project in your dissertation and show evidence of in-depth understanding, mastery of research techniques, ability to analyse assembled data, and assessment of outcomes.

LIVERPOOL HALLMARKS

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

Careers and employability

We equip our students for rewarding careers and our graduates have found jobs in a wide range of industries and organisations, both in the UK and abroad.

This programme includes a strong practical element and incorporate the latest academic and industry research, enabling you to work effectively at the forefront of engineering.

Career support from day one to graduation and beyond

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Career planning

[Our Careers Studio and career coaches can provide tailored support for your future plans.](#)

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From education to employment

Employability in your curriculum for a successful transition

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Networking events

[Make meaningful connections with like-minded professionals](#)

YOUR FUTURE

We've consistently achieved the highest grades in research assessments and many of our research programmes are supported by industrial companies such:-

- Agusta Westland
- Airbus
- BAE Systems
- QinetiQ
- Unilever
- Jaguar
- Ford

- National and international bodies such as EPSRC and the European Commission.
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Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

TUITION FEES

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)	
Full-time place, per year	£13,300

International fees	
Full-time place, per year	£29,900

Fees stated are for the 2025-26 academic year.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support.

- You can [pay your tuition fees in instalments](#).
- All or part of your tuition fees can be [funded by external sponsorship](#).
- International applicants who accept an offer of a place will need to [pay a tuition fee deposit](#).

If you're a UK national, or have settled status in the UK, you may be eligible to apply for a Postgraduate Loan worth up to £12,167 to help with course fees and living costs. [Learn more about fees and funding](#).

ADDITIONAL COSTS

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This could include buying a laptop, books, or stationery.

Find out more about the [additional study costs](#) that may apply to this course.

SCHOLARSHIPS AND BURSARIES

We offer a range of scholarships and bursaries that could help pay your tuition and living expenses.

We've set the country or region your qualifications are from as United Kingdom. [Change it here](#)

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POSTGRADUATE GLOBAL ADVANCEMENT SCHOLARSHIP – ACHIEVEMENT

- [International students](#)

[If you're an international student joining a master's course with us, you could be eligible to receive a tuition fee discount of £2,500, based on your prior academic achievement, choice of course, and you not having studied with us before.](#)

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POSTGRADUATE GLOBAL ADVANCEMENT SCHOLARSHIP – COUNTRY

- [International students](#)
- [Antigua and Barbuda](#)
- [Australia](#)
- [Bangladesh](#)
- [Barbados](#)
- [Belize](#)
- [Brunei](#)
- [Canada](#)
- [China](#)
- [Cyprus](#)
- [Dominica](#)
- [Egypt](#)
- [Ghana](#)
- [Grenada](#)
- [Guyana](#)
- [India](#)
- [Jamaica](#)
- [Japan](#)
- [Kenya](#)
- [Malaysia](#)
- [Mauritius](#)
- [Mexico](#)
- [New Zealand](#)
- [Nigeria](#)
- [Pakistan](#)
- [Saint Kitts and Nevis](#)
- [Saint Lucia](#)
- [Saint Vincent and The Grenadines](#)
- [Singapore](#)
- [South Africa](#)
- [South Korea](#)
- [Sri Lanka](#)
- [Tanzania](#)
- [Thailand](#)
- [Trinidad and Tobago](#)

- [Turkey](#)
- [Uganda](#)
- [Vietnam](#)

[If you're an international student joining a master's course with us, you could be eligible to receive a tuition fee discount of £2,500, based on your nationality, choice of course, and you not having studied with us before.](#)

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GRADUATE LOYALTY ADVANCEMENT SCHOLARSHIP

- [Home and international students](#)

[If you're a University of Liverpool graduate starting this master's degree with us, you could be eligible to receive a loyalty discount of up to £2,500 off your master's tuition fees.](#)

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CHILEAN NATIONAL AGENCY FOR RESEARCH AND DEVELOPMENT (ANID) SCHOLARSHIP

- [International students](#)
- [Chile](#)

[If you're a Chilean student joining a master's degree, you could be eligible to apply for a 20% discount on your tuition fees with a Chilean National Agency for Research and Development \(ANID\) Scholarship. Scholarship.](#)

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CHEVENING SCHOLARSHIPS

- [International students](#)
- [Albania](#)
- [Algeria](#)
- [Anguilla](#)
- [Antigua and Barbuda](#)
- [Argentina](#)
- [Australia](#)
- [Azerbaijan](#)
- [Bangladesh](#)
- [Barbados](#)
- [Belize](#)
- [Bolivia](#)
- [Brazil](#)
- [British Virgin Islands](#)
- [Brunei](#)
- [Canada](#)
- [Cayman Islands](#)
- [Chile](#)
- [China](#)
- [Columbia](#)
- [Costa Rica](#)
- [Cuba](#)
- [Dominica](#)

- [Ecuador](#)
- [Egypt](#)
- [El Salvador](#)
- [Ghana](#)
- [Guatemala](#)
- [Guyana](#)
- [Honduras](#)
- [Hong Kong](#)
- [Iceland](#)
- [India](#)
- [Indonesia](#)
- [Iraq](#)
- [Jamaica](#)
- [Japan](#)
- [Jordan](#)
- [Kazakhstan](#)
- [Kenya](#)
- [Libya](#)
- [Malaysia](#)
- [Mauritius](#)
- [Mexico](#)
- [Moldova](#)
- [Mongolia](#)
- [Montserrat](#)
- [Morocco](#)
- [Nepal](#)
- [New Zealand](#)
- [Nicaragua](#)
- [Nigeria](#)
- [Pakistan](#)
- [Panama](#)
- [Paraguay](#)
- [Peru](#)
- [Philippines](#)
- [Russia](#)
- [Saint Kitts and Nevis](#)
- [Saint Lucia](#)
- [Saint Vincent and The Grenadines](#)
- [Serbia](#)
- [Singapore](#)
- [South Africa](#)
- [South Korea](#)
- [South Sudan](#)
- [Sri Lanka](#)
- [Sudan](#)
- [Taiwan](#)
- [Tanzania](#)
- [Thailand](#)

- [Trinidad and Tobago](#)
- [Turkey](#)
- [Turks and Caicos Islands](#)
- [Uganda](#)
- [Ukraine](#)
- [Uruguay](#)
- [Venezuela](#)
- [Vietnam](#)
- [Zimbabwe](#)

[If you're an international student from an eligible country, joining a one-year master's course, you could be eligible to apply for a Chevening Scholarship. If your application is successful, you could expect to have your master's fees paid, up to a maximum of £18,000, and receive additional help with living costs.](#)

CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA (CONACYT) AWARD

- [International students](#)
- [Mexico](#)

[If you're a Mexican student joining a master's degree, you could be eligible to apply for a 30% discount on your tuition fees with a CONACyT Award.](#)

FUND FOR THE DEVELOPMENT OF HUMAN RESOURCES (FIDERH) AWARD

- [International students](#)
- [Mexico](#)

[If you're a Mexican student joining a master's degree and you're in receipt of a FIDERH graduate loan, you could be eligible to benefit from a 20% discount on your tuition fees with a FIDERH Award.](#)

FUNED AWARD

- [International students](#)
- [Mexico](#)

[If you're a Mexican student joining a master's degree and you're in receipt of a FUNED loan, you can apply to be considered for a 20% tuition fee discount. A total of up to 50 awards will be available to master's and PhD students per academic year.](#)

FUNED SCHOLARSHIP FOR WOMEN IN STEM SUBJECTS

- [International students](#)
- [Mexico](#)

[If you're a female Mexican student joining an eligible master's course in a science, technology, engineering or maths \(STEM\) subject and you're in receipt of a FUNED loan, you can apply to be considered for a 25% tuition fee discount. Up to five awards are available in each academic year.](#)

- **HRH PRINCESS SIRINDHORN UNIVERSITY OF LIVERPOOL SCHOLARSHIP (THAILAND)**

- [International students](#)
- [Thailand](#)

[If you're a student from Thailand joining a one-year master's degree, you might be eligible to apply to have your tuition fees paid in full and receive help with living costs. One award is available and only students who are new to the University will be considered.](#)

- **HUMANITARIAN SCHOLARSHIPS FOR MASTER'S PROGRAMMES**

- [International students](#)

[Do you have recognised status as a refugee or person with humanitarian protection outside the UK? Or are you a Ukrainian who's sought temporary protection in the EU? You could be eligible to apply for the full payment of your master's fees and additional financial support.](#)

- **JOHN LENNON MEMORIAL SCHOLARSHIP**

- [Home students](#)

[If you're a UK student, either born in or with strong family connections to Merseyside, you could be eligible to apply for a fee discount of up to £4,500. You'll need to demonstrate an active interest in global, community and environmental issues to be considered.](#)

- **JUVENTUDES GTO SCHOLARSHIP**

- [International students](#)
- [Mexico](#)

[If you're a resident of the state of Guanajuato in Mexico joining a master's degree, you could be eligible for a 10% discount on your tuition fees with a JuventudEsGto Scholarship.](#)

- **KAPLAN DIGITAL PATHWAYS EXCELLENCE SCHOLARSHIP**

- [International students](#)

[Completed a Kaplan Digital Pathways Pre-Master's? We're offering a £5,000 fee discount off the first year of master's study for a maximum of two high achieving students joining one of our non-clinical master's courses from an online Kaplan Pre-Master's programme.](#)

- **MARSHALL SCHOLARSHIP**

- [International students](#)
- [United States](#)

[If you're a USA student joining an eligible master's with us, you could be eligible to apply for a Marshall Scholarship. If your application is successful, your master's tuition fees will be paid in full. One Marshall Scholarship for master's study is available in each academic year.](#)

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POSTGRADUATE OPPORTUNITY BURSARY

- [Home students](#)

[If you're a UK University of Liverpool graduate joining a master's degree with us, you could be eligible to receive £3,000 off your tuition fees. You must have graduated in the last two years and received a widening access scholarship during your undergraduate studies.](#)

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SPORT LIVERPOOL PERFORMANCE PROGRAMME

- [Home and international students](#)

[Apply to receive tailored training support to enhance your sporting performance. Our athlete support package includes a range of benefits, from bespoke strength and conditioning training to physiotherapy sessions and one-to-one nutritional advice.](#)

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TURKISH MINISTRY OF EDUCATION SCHOLARSHIP

- [International students](#)
- [Turkey](#)

[If you're a Turkish student joining a master's degree, you could be eligible to apply for a 20% discount on your tuition fees with a Turkish Ministry of Education Scholarship.](#)

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UNIVERSITY OF LIVERPOOL INTERNATIONAL COLLEGE EXCELLENCE SCHOLARSHIP

- [International students](#)

[Completed a Pre-Master's at University of Liverpool International College \(UoLIC\)? We're offering a £5,000 fee discount off the first year of master's study to some of the highest achieving students joining one of our non-clinical master's courses from UoLIC.](#)

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UNIVERSITY OF LIVERPOOL INTERNATIONAL COLLEGE IMPACT PROGRESSION SCHOLARSHIPS

- [International students](#)

[If you're a University of Liverpool International College student awarded a Kaplan Impact Scholarship, we'll also consider you for an Impact Progression Scholarship. If selected, you'll receive a fee discount worth £3,000 off the first year of your master's course.](#)

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VICE-CHANCELLOR'S INTERNATIONAL ATTAINMENT SCHOLARSHIP FOR MAINLAND CHINA

- [International students](#)
- [China](#)

[Are you a high-achieving graduate from the People's Republic of China with a degree from a Chinese university? You could be eligible to apply for a £5,000 fee discount if you're joining an eligible master's course. Up to 15 eligible students will receive this scholarship.](#)

Entry requirements

The qualifications and exam results you'll need to apply for this course.

Your qualification	Requirements About our typical entry requirements
GCSE	4/C in English and 4/C in Mathematics
Postgraduate entry requirements	We accept a 2:2 honours degree from a UK university, or an equivalent academic qualification from a similar non-UK institution. This should be in Engineering or Science with appropriate knowledge of core engineering science topics at bachelor degree level.
International qualifications	Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College , means you're guaranteed a place on your chosen course.

THE ORIGINAL

REDBRICK