



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Mechanical and Manufacturing Engineering (BAI/MAI)

Department of
Mechanical, Manufacturing and
Biomedical Engineering



Programme Overview

The Mechanical and Manufacturing Engineering stream offers an undergraduate **M.A.I. in Mechanical and Manufacturing Engineering** master's degree (NFQ Level 9) after year five, or an undergraduate **B.A.I. in Mechanical and Manufacturing Engineering** honours bachelor's degree (NFQ Level 8) after year four. Optionally, students are also eligible for a B.A. ordinary bachelor's degree after successful completion of year three. The engineering programme is fully accredited by Engineers Ireland up to master's level (M.A.I) and offers excellent career prospects in Ireland and abroad.

Mechanical and Manufacturing Engineering is one of the streams available to students at the end of second year in the common entry Engineering programme at Trinity College Dublin. Mechanical Engineering is arguably the broadest of all engineering disciplines, which is reflected in the diverse range of topics covered in our programme in years three, four and five.

The Mechanical Engineering profession involves the application of principles of physics for design, manufacture, analysis, optimisation, and maintenance of mechanical systems. Key concepts include solid and fluid mechanics, kinematics and dynamics, thermodynamics and energy, design and sustainability, materials science and control theory.

Our graduates have taken jobs in diverse fields such as high-tech manufacturing (e.g., Intel, Pfizer, DePuy, Seagate, Siemens), automotive (e.g., Jaguar, Rover, BMW), engineering and business consultancy (e.g., Arup, Deloitte, Accenture), energy (e.g., ESB, Eirgrid, EDF), process engineering (e.g., Procter & Gamble, Glanbia, Kerry) and many other exciting international roles. Many of our graduates progressed on to master's and Ph.D. programmes in universities such as Imperial College, Brunel, Cambridge, ETH Zürich, KTH, Grenoble, and MIT.

www.tcd.ie/mecheng

Programme Content

Year three (Junior Sophister) focuses on the fundamentals of mathematics, statistics, as well as materials, fluids, computer aided design, kinematics and manufacturing technology as applied to mechanical engineering.

Year four (Senior Sophister) further refines essential skills such as mechanical dynamics, fluid mechanics and heat transfer, and computer aided engineering. However, it also offers several options for deeper specialisation within the mechanical engineering discipline, with optional modules on power generation and turbomachinery, robotics, vibration. In the second semester, many students choose for a full-time paid industrial internship with some of our partner companies (30 ECTS). There are also options to study abroad for the full year or the second semester only, through Erasmus, UNITECH or other programmes (<https://www.tcd.ie/Engineering/international/study-abroad/outgoing/>). Those students wishing to exit with a B.A.I. Degree after year four carry out a research project (15 ECTS).

Year five (M.A.I.) offers further options for specialisation with optional modules on renewable energy, low carbon power and transport technology, control theory, thermal design, computational fluid dynamics, transport and logistics. Each student carries out their own M.A.I. Research Project (30 ECTS) supervised by one of our academic staff. The project runs over both semesters and is aligned with some of our diverse research activities, allowing the student to work side-by-side with PhD or postdoctoral researchers, and occasionally with industry collaborators on new scientific advances or the development of next generation mechanical devices.

Programme Delivery

This programme is delivered in-situ on the Trinity College Dublin campus, using a combination of classroom lectures, and smaller group teaching in tutorials and lab sessions. Laboratory experiments and simulation work are conducted in a wide range of test facilities and well-equipped computer rooms, located primarily within the Parsons Building, home of the Department of Mechanical, Manufacturing & Biomedical Engineering.

Programme Requirements

Entry requirements for the common engineering programme are below. Students select their specific discipline at the end of second year.

Leaving Certificate	H4 Mathematics
Advanced GCE (A-Level)	Grade C Mathematics
International Baccalaureate:	HL Grade 5 Mathematics

Advanced entry and alternative admission routes are also available.

Application Details

<https://www.tcd.ie/mecheng/undergraduate/>

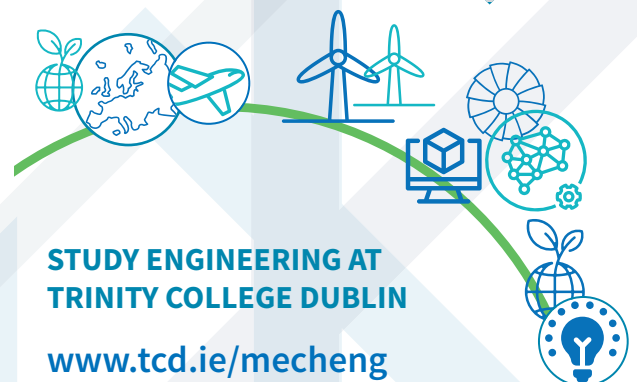
Contact Details

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QS subject rankings, 2023



STUDY ENGINEERING AT
TRINITY COLLEGE DUBLIN

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