



# UCD Engineering Programmes

ME (Mechanical Engineering)

6<sup>th</sup> March, 2025



UCD School of  
Mechanical and Materials Engineering



*UCD Taught Masters Programmes*

## **ME in Mechanical Engineering**

Programme Director

**Dr Malachy O'Rourke**

**[malachy.orourke@ucd.ie](mailto:malachy.orourke@ucd.ie)**



## Programme Overview

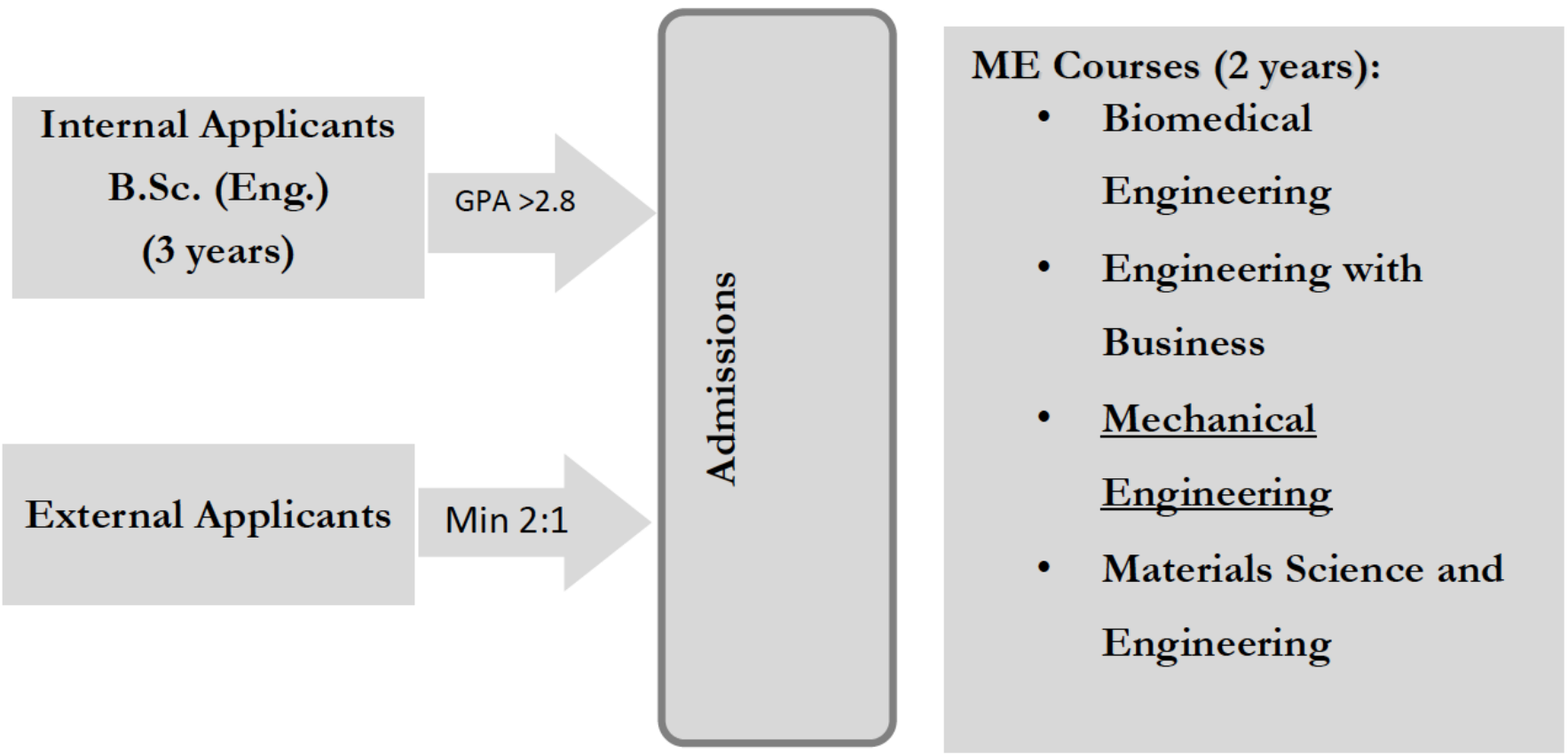
*Aims to provide students with the opportunity to gain advanced theoretical, conceptual and practical knowledge in the application of Mechanical Engineering*

Emphasis is placed on:

- core subject areas such as continuum mechanics, solid mechanics and fluid dynamics
- acquiring the skills required to generate new knowledge through research
- independent and project-based learning while working with UCD academics and researchers on contemporary research projects
- professional engineering practice during work placement



## Entry Requirements





## Programme Structure

### ***2-Year Full Time Programme (120 ECTS Credits)***

#### Stage 1/Year 1

- 30 credits (6 taught modules) in autumn trimester
- 30 credit work placement in spring trimester

*or*

4 taught modules in spring trimester + 10 credit work placement either during spring trimester or summer trimester

#### Stage 2/Year 2

- Year long 30 credit research project + research skills and techniques
- 30 credits (6 taught modules) distributed across spring/autumn trimesters



## Summary by Credits

- 11 Core Taught Modules (x 5 credits)      55 credits
- 2 Option Taught Modules (x 5 credits)      10 credits
- Work Placement      30 credits
- ME Mechanical Thesis      25 credits

Total Credits = 120



## Module Choice

### ***Core Modules (11)***

- Computational Continuum Mechanics I
- Computational Continuum Mechanics II
- Mechanics of Solids III
- Mechanics of Fluids II
- Mechanics of Fluids III
- Fracture Mechanics
- Engineering Thermodynamics III
- Manufacturing Engineering II
- Professional Engineering Management
- Research Skills and Techniques
  
- Control Theory or Process Control

### ***Option Modules (2)***

- Energy Systems and Climate Change (A)
- Technical Ceramics (A)
- Materials Kinetics & Thermodynamics (A)
- Technical Communications (A)
- Data Analytics for Engineers (A)
- Quantitative Methods for Engineers (A)
  
- Advanced Metals Processing (S)
- Advanced Polymer Engineering (S)



# UCD School of Mechanical and Materials Engineering

## Stage 1 (Year 1)

### Autumn Trimester

- Engineering Thermodynamics III\*
- Mechanics of Fluids II\*
- Manufacturing Engineering II\*
- Computational Continuum Mechanics I\*
- Fracture Mechanics
- Mechanics of Solids III

### Spring Trimester

- Professional Work Experience (30 credits)

## Stage 2 (Year 2)

### Autumn Trimester

- Computational Continuum Mechanics II
- Research Skills and Techniques

### Spring Trimester

- Mechanics of Fluids III
- Professional Engineering (Management)

### Year Long Module

- ME Mechanical Thesis (25 credits)

### Autumn or Spring

- Control Theory/Process Control
- Option module 1
- Option module 2

All trimesters are 30 credits.  
All modules are 5 credits unless otherwise stated.





# UCD School of Mechanical and Materials Engineering

## Work Placement



- Takes place during spring trimester of stage 1
- Students apply for positions during autumn trimester of stage 1

Companies involved in work placement to date include:



- Accenture (Dublin & UK)
- BD Medical
- BMR
- Boston Scientific
- Caterpillar (UK)
- CCM (Delaware, USA)
- CTS (USA)
- De Puy
- Dublin Port
- Eirecomposites



- Element 6
- Henkel
- Irish Rail
- Jaguar Landrover
- MSD
- Nypro Healthcare
- PCH (China)
- ProCut
- Tech Eng Tools
- Technology from Ideas





Module Code	Module Name	Semester	ECTS Credits	Module Coordinator	Lecture Hours	Tutorial Hours	Practical Hours	Autonomous Student
MEEN40700	ME Mechanical Thesis	Year Long	25	Dr Malachy O'Rourke	0	0	0	600
MEEN40560	Research Skills and Techniques	1	5	Prof Lizbeth Goodman	0	10	65	30

## Project Assessment

- Interim report (10%)
- Interim presentation (5%)
- Final presentation (15%)
- Final report & oral examination (70%)



# UCD Engineering Programmes

ME (Mechanical Engineering)

6<sup>th</sup> March, 2025