



University College Dublin
Ireland's Global University

ME MATERIALS SCIENCE & ENGINEERING (TWO YEARS FULL TIME)

Materials Science and Engineering is an interdisciplinary field investigating the relationship between the structure of materials at atomic or molecular scales and their macroscopic properties. ME Materials Science and Engineering Programme assists manufacturing-based engineering by training students for work in industry sectors as diverse as biomedical, energy, electronic, automotive and aerospace. This programme's aim is to provide advanced engineering education in subject areas related to design and application of materials such as metals,

ceramics, polymers, composites and semi-conductors. The core knowledge in this field is essential in currently evolving advanced technologies such as additive manufacturing (also known as 3D-Printing) and nanotechnology.



ACCREDITED PROGRAMME



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WHY STUDY AT UCD?



Professional Work Experience

6-8 month Professional Work Experience internship opportunity



Tradition

Established 1854, with 160 years of teaching and research excellence



Global profile

UCD is ranked in the top 1% of higher education institutions worldwide



Global community

Over 8,500 international students from over 130 countries study at UCD



Global careers

Degrees with high employability; dedicated careers support; two-year stay-back visa (for non-EU students)



Safety

Modern parkland campus with 24-hour security, minutes from Dublin city centre

PROFESSIONAL WORK PLACEMENTS PROVIDED

The programme is professionally dual accredited by both the Institute of Materials, Minerals and Mining (IOM3) and Engineers Ireland. The programme provides professional work placements for a duration of 6-8 months in Irish industry which includes companies in biomedical (Ireland hosts 18 of the world's top 25 med-tech companies), aerospace (Ireland's aerospace industry worth over €4.1 billion to the Irish economy with more than 250 companies), energy and electronic sectors.

COURSE CONTENT AND STRUCTURE

120 credits
taught master's

60 credits
taught engineering modules

30 credits
professional work experience

30 credits
research project

Core modules include:

- Advanced Metals/Materials Processing
- Advanced Composites and Polymer Engineering
- Fracture Mechanics
- Kinetics & Thermodynamics of Materials
- Materials Science & Engineering II
- Materials Science & Engineering III
- Professional Engineering (Finance)
- Solid-State Electronics I
- Technical Ceramics

Optional modules include:

- Energy Systems and Climate Change
- Biomaterials
- Chemistry of Materials
- Computational Continuum Mechanics I
- Manufacturing Engineering II
- Medical Device Design
- Nanomaterials
- Physics of Nanomaterials
- Professional Engineering (Management)



