

ME Materials Science & Engineering

Two Years Full Time (September start)



Introduction

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.

Course Highlight

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, aerospace, energy and electronic sectors.

Course Content and Structure

● **120 credits**

taught master's

● **60 credits**

taught modules

● **30 credits**

Research Project

● **30 credits**

Work Experience

Modules may include:

- Advanced Polymer Engineering
- Fracture Mechanics
- Materials Thermodynamics and Kinetics
- Materials Science & Engineering
- Professional Engineering (Finance)
- Solid State Devices
- Technical Ceramics
- Bio-material Interactions
- Nanomaterials
- Advanced Metals Processing
- Energy Systems and Climate Change
- Biomaterials
- Computational Continuum Mechanics I
- Manufacturing Engineering II
- Medical Device Design
- Applied Chemistry: Selected Frontiers Areas
- Professional Engineering (Management)
- Professional Engineering (Finance)

Why study at UCD?



Graduate education

12,800 graduate students; 17% graduate research students; structured PhDs



Global profile

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



Global community

Over 11,000 international students from more than 152 countries



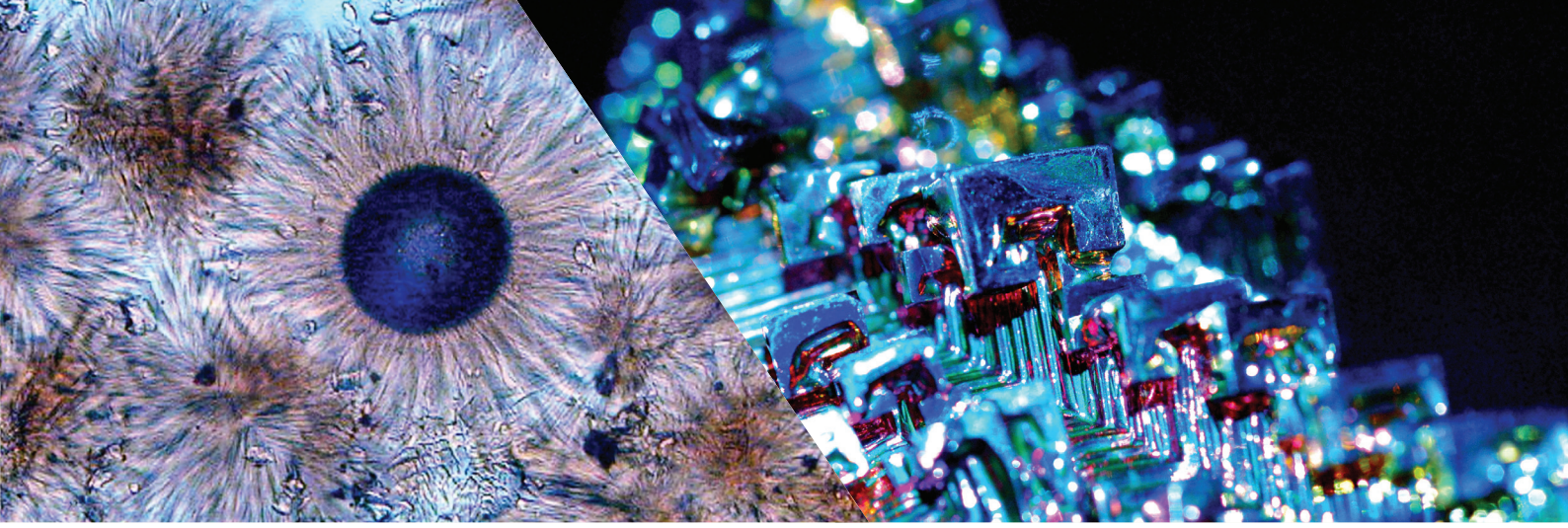
Global careers

Dedicated careers support; 2-year stayback visa to work in Ireland

I.M3 Accredited Programme



ACCREDITED PROGRAMME



Career Opportunities

Graduate of the ME Materials Science and Engineering programme can look forward to limitless employment opportunities in leading companies of the manufacturing, biomedical, aerospace, energy and electronic sectors. Manufacturing accounts for 24% of Irish economic output and employs 20% of the Irish workforce directly or indirectly. Ireland's aerospace and aviation industry is worth over €4.1 billion to the Irish economy, and there are more than 250 companies involved in the aerospace, aviation and space sectors in Ireland, providing employment for around 42,000 full-time workers. Moreover, Ireland hosts 18 of the world's top 25 medtech companies and a multi-national semi-conductor manufacturing company (Intel Leixlip), overall employing over 40,000 people. UCD materials graduates have taken up roles such as data scientist, manufacturing engineer, development engineer, and research engineer, in different industrial sectors including aerospace (General Electric, Rolls Royce, Lockheed Martin Aeronautics), electronics (Intel), biomedical (Boston Scientific, Stryker, DePuy Synthes) and energy (Siemens).

Graduate Profile

Stefano Palazzo
General Electric



I chose this programme because of its international nature and the wide range of modules offered, allowing me to tailor my academic experience to my envisioned education path. The broad exposure to different areas, from mechanics-oriented to health-related applications of materials, and from the energy sector to finance, provided me with an all-round education essential for a contemporary engineer and helped me move towards my career ambitions. The industrial placement helped me gain invaluable soft and hard skills that I could immediately put into practice in the job market and complemented the academic offer of the programme. There, I experienced first-hand how an innovative and high-tech company works, making it easier to transition to my first job at General Electric, where I currently work as a Materials Applications Engineer.

Applicant Profile

- Applicants must hold a bachelor's degree with a minimum upper second class honours (NFQ level 8) or international equivalent in a relevant Engineering, Science or Technology programme.
- Applicants whose first language is not English must also demonstrate English language proficiency of IELTS 6.5 (no band less than 6.0 in each element), or equivalent.
- Students who do not meet the IELTS requirement may wish to consider taking the Pre-Sessional or Pre-Master's Pathway. Full details www.ucd.ie/alc/programmes/pathways/

International Fees and Scholarships

Tuition fee information is available on www.ucd.ie/fees. Please note that UCD offers a number of graduate scholarships for full-time, self-funding international students, holding an offer of a place on a UCD masters programme. Please see www.ucd.ie/global/scholarships/ for further information.

Related Master's Programmes of Interest

- ME Mechanical Engineering
- MEngSc Materials Science & Engineering

CONTACT US

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APPLY NOW

This programme receives significant interest so please apply early online at www.ucd.ie/apply