



University College Dublin
Ireland's Global University

MEngSc MATERIALS SCIENCE & ENGINEERING (ONE YEAR 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. Materials Scientists and Engineers are at the centre of virtually every area of technology from optoelectronics to space materials and from automotive and automotive manufacturing to biomedical devices.

The core knowledge in this field is essential in currently evolving advanced technologies such as additive manufacturing (also known as 3D printing) and nanotechnology. Graduates will gain expertise in fundamental materials science and real-world engineering application of materials, including metals, ceramics, composites and semiconductors.

SCHOOL BOASTS A LONG HISTORY OF INNOVATION

This programme is delivered by a School with a long history of innovation, establishing its first spin-out company more than 40 years ago, attracting more than €5 million in research funding annually, and leading SFI's national centre for advanced manufacturing.

WHY STUDY AT UCD?



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

COURSE CONTENT AND STRUCTURE

90 credits
taught master's

60 credits
taught engineering modules

30 credits
research project

Core modules include:

- Technical Ceramics
- Research Skills and Techniques
- Advanced Metals Processing
- Materials, Thermodynamics and Kinetics
- Advanced Polymer Engineering

Optional modules include:

- Chemistry of Materials
- Solid-State Electronics I
- Computational Continuum Mechanics I
- Fracture Mechanics
- Energy Systems & Climate Change

- Energy Systems Integration
- Nanomaterials Chemistry
- Advanced Characterisation Tech
- Professional Eng. (Finance)
- Professional Engineering (Mgt)
- Technical Communication
- Biomaterials
- Physics of Nanomaterials
- Computational Continuum Mechanics II
- Medical Device Design





CAREER OPPORTUNITIES

If you are a graduate of the MEngSc Materials Science & Engineering programme you can look forward to limitless employment opportunities in a substantive array of industries. Most companies worldwide employ materials professionals and examples where UCD materials graduates now work are: General Electric or Rolls Royce (Aerospace), Astrium (Space), Boston Scientific or Stryker (Biomedical) or Siemens (Energy).



GRADUATE PROFILE

Susan Nace
PhD Candidate

As an undergraduate mechanical engineering student in the US, I was able to study abroad in Dublin for 6 weeks one summer, during which I lived on UCD's campus and fell in love with Dublin's historic-village-yet-international-city vibes. When it came time for me to decide where to pursue a postgraduate degree, I chose UCD based on both my previous positive experiences in Dublin—friendly people, good music scene, great burritos and pizza—as well as UCD's one year Master of Engineering Science in Materials Engineering degree programme. The programme offered me a chance to study a wide variety of engineering materials used worldwide, such that after finishing the programme, I would be able to use my new knowledge anywhere, not just in jobs or academia in Ireland or the US. The programme required both module and research credits, which allowed me to gain a specialisation in the materials field of mechanical engineering, as well as jumpstart my desired research career. After completing my degree at UCD, I received an Irish Research Council Employment-based Postgraduate Programme doctoral fellowship with a UCD engineering professor and a non-profit based in Dublin, and I am currently in my second year of that PhD programme. I believe that UCD was key to my academic journey and that the university is continuing to help me establish myself in the engineering research field.

APPLY NOW

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

ENTRY REQUIREMENTS

- A 4-year 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-Masters Pathway. Full details <https://www.ucd.ie/alc/programmes/pathways/>

SCHOLARSHIPS

- Dedicated scholarships for non-EU students
 - Apply for University Scholarship www.ucd.ie/global/scholarships/
 - Apply for College scholarship www.ucd.ie/eacollege/study/noneus-scholarships
- Approved by US Dept of Education for federally supported loans

WORK IN IRELAND

Option to stay in Ireland to seek employment and/or work for 2 years after graduating.

FEES

Fee information is available at www.ucd.ie/fees

RELATED MASTER'S PROGRAMMES OF INTEREST

- ME Materials Science & Engineering
- ME Mechanical Engineering

CONTACT US

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