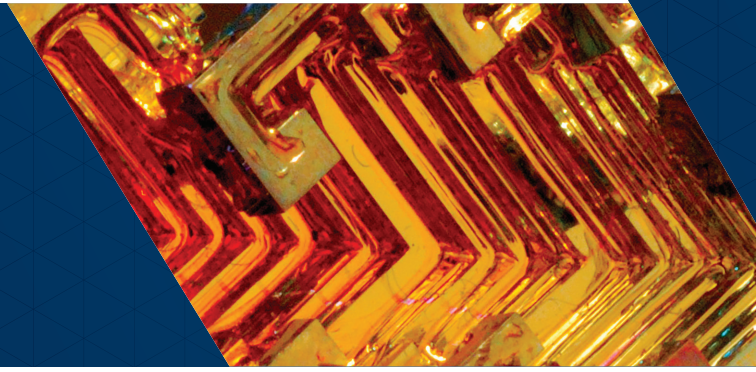


# MEngSc Materials Science & Engineering

## One Year 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. 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.

### Course Highlight

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.

### Course Content and Structure

- 90 credits taught master's
- 60 credits taught modules
- 30 credits dissertation

#### Core modules include:

- Materials Science & Engineering II
- Technical Ceramics
- Research Skills and Techniques
- Advanced Metals Processing
- Materials Thermodynamics and Kinetics
- Advanced Polymer Engineering

#### Optional modules include:

- Chemistry of Materials
- Solid State Devices
- Computational Continuum Mechanics
- Fracture Mechanics
- Energy Systems & Climate Change
- Nanomaterials Chemistry
- Renewable Energy Systems Analysis
- Computational Continuum Mechanics II
- Advanced Characterisation Tech
- Professional Eng. (Finance)
- Professional Engineering (Mgt)
- Technical Communication
- Biomaterials
- Physics of Nanomaterials
- Medical Device Design

### Why study at UCD?



#### Tradition

Established 1854, with over 170 years of teaching & research excellence



#### Global profile

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



#### Employability

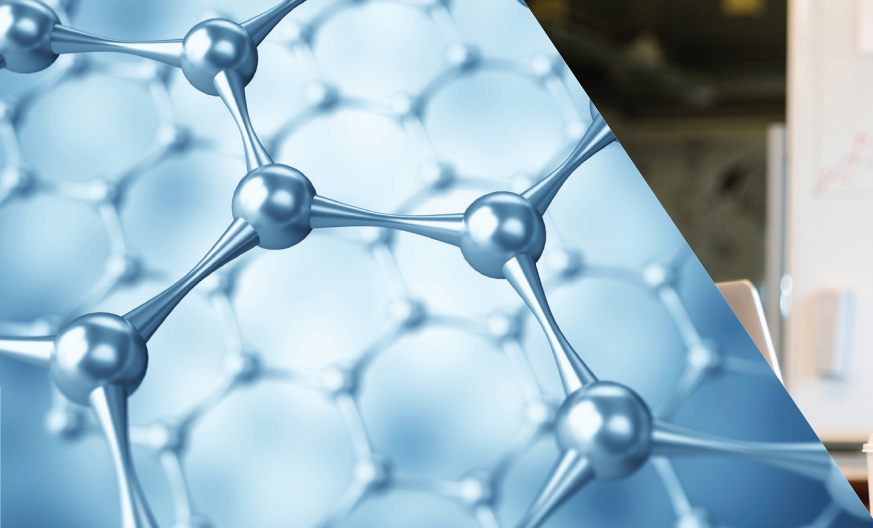
UCD is ranked in the top 100 worldwide at 88th globally for employability outcomes for graduating students.



#### Global careers

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





## Career Opportunities

Graduates of the MEngSc Materials Science and Engineering programme can look forward to vast career opportunities across the manufacturing, biomedical, aerospace, energy and electronics sectors. Manufacturing contributes 24% of Ireland's economic output and employs 20% of the workforce, while the aerospace and aviation industry adds €4.1 billion annually, with 250 companies employing 42,000 people. Ireland also hosts 18 of the world's top 25 medtech companies and Intel's major semiconductor facility, together employing over 40,000 people. UCD materials graduates have secured roles such as data scientist, manufacturing engineer, development engineer and research engineer with leading firms including General Electric, Rolls Royce, Lockheed Martin, Intel, Boston Scientific, Stryker, DePuy Synthes and Siemens.

## Graduate Profile

Susan Nace  
PhD Candidate



This 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.

## Entry Requirements

- 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/](http://www.ucd.ie/alc/programmes/pathways/)

### International Fees and Scholarships

Tuition fee information is available on [www.ucd.ie/fees](http://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 master's programme. Please see [www.ucd.ie/global/scholarships/](http://www.ucd.ie/global/scholarships/) for further information.

### Related Master's Programmes of Interest

- ME Biosystems & Food Engineering
- ME Engineering with Business

### CONTACT US

Website: [www.ucd.ie/eacollege/contact/](http://www.ucd.ie/eacollege/contact/) or [www.ucd.ie/global/enquire/](http://www.ucd.ie/global/enquire/)  
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### APPLY NOW

This programme receives significant interest so please apply early online at [www.ucd.ie/apply](http://www.ucd.ie/apply)