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# Welcome to UCD

## Ireland's Global University

University College Dublin has a fantastic reputation, justified by its position as number one in Ireland across so many university facets.

As an **internationally recognised and research-intensive university**, UCD attracts talented students from around the world.

There are currently **7,500 students enrolled** in graduate study at UCD.

UCD is Ireland's **leader in graduate education** with 25% of all postgraduate students in Ireland studying at UCD.

UCD is Ireland's most popular University for International students with more than **6,000 international students** from over 120 countries.

UCD is the only Irish university with a **dedicated international student centre**. The UCD Global Lounge is a relaxed space for international and Irish students to meet and hang out during their time at UCD.



# UCD Engineering Graduate Taught Courses

Whether you are continuing your engineering and technical education directly following a bachelors degree, or have developed your experience as a professional engineer and now wish to complement that with additional qualifications, I am confident that you will find a relevant graduate degree programme within UCD Engineering.

Offering you opportunities to follow your interests across the agri-food, business, communications, energy, healthcare, materials, pharmaceuticals, physical infrastructure, transport or water sectors, there are options within UCD Engineering that will advance your knowledge and stimulate your passion for your chosen field.

With International leaders across the engineering disciplines, the programmes will provide you with core knowledge in the subject, an expectation of attaining excellence and the development of your capacity for independent and creative thinking, problem solving and leadership in your chosen speciality.

**Professor David FitzPatrick**  
Dean of Engineering

# Why Choose UCD Engineering For Graduate Studies?

Studying your Masters in Engineering at UCD, which is variously accredited by Engineers Ireland, the Institute of Chemical Engineers (IChemE) and the Institute of Materials, Minerals and Mining (IoM3), is highly attractive to students due to the exposure to world leading researchers and significant career prospects.

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## Research

The research activity in the UCD College of Engineering & Architecture is substantial with global recognition in a number of areas including: Energy, Food, Transport, Bioprocess & Pharmaceutical Engineering, Water, Biomedical Engineering, Materials, Advanced Manufacturing, Internet of Things, and The Built Environment.

## Career Prospects

The career prospects within the College of Engineering & Architecture are another attraction for students. Within the two year Master of Engineering programmes, UCD offers six to eight months of professional work experience and has a dedicated support unit to facilitate the placement of these students. UCD also hosts an annual Science, Engineering and Technology recruitment fair with 100+ national and international companies on campus to directly hire the engineering graduates.



### UCD CHEMICAL & BIOPROCESS ENGINEERING

graduates feed into the vibrant national pharmaceutical industry. Ireland is one of the leading locations for the pharmaceutical industry in Europe, 12 of the world's top selling medicines are manufactured here and 9 of the world's top pharma companies are based here.



### The ELECTRICAL & ELECTRONIC ENGINEERING GRADUATES

feed into the Irish ICT sector where Ireland has the highest concentration of ICT activity in OECD countries and is known as the internet and games capital of Europe. Three of the world's top gaming companies are here and Ireland is a top 5 exporter of software in the world. Eight out of the top 10 technology companies are based in Ireland while the majority of the global players in the ICT sector have chosen Ireland for their major operations. The economic contribution of the sector is substantial with the ICT industry currently responsible for approximately 25% of Ireland's total turnover.



### The UCD MECHANICAL & MATERIALS ENGINEERS

enjoy a 95% employment rate, the Irish Manufacturing sector is strong and remains a key contributor to Ireland's economy. There are over 200,000 people employed directly in manufacturing, with a further 200,000 employed indirectly. Growth estimates indicate that Ireland has the potential to achieve an increase in manufacturing employment of 43,000 jobs by 2020.





Many of the **UCD BIOMEDICAL ENGINEERING GRADUATES** enter the

medical device industry in Ireland. There are currently 250 medical technology companies in Ireland, exporting €7.2 billion worth of product annually and employing 25,000 people – the highest number of people working in the industry in any country in Europe.



The **BIOSYSTEMS & FOOD ENGINEERS** mainly enter the Irish Food industry. The

manufacture of food and drink products is Ireland's most important indigenous industry with a turnover approaching €24 billion.



**CIVIL ENGINEERING GRADUATES** are in

demand following on from the economic recovery in Ireland, with over 20,000 jobs created in the Irish construction industry in the last 24 months. Employment demands in this sector are set to rise even further as major engineering works are being planned for the future, including the €27 billion capital plan recently announced by the government which will also invest in improved school and hospital infrastructure as well as flood defences, all of which will create an increased demand for civil engineers. Exciting new applications within this sector also offer graduates the opportunity of very rewarding careers.



The **ENERGY SECTOR** offers substantial economic and job creation growth opportunities

for Ireland, with its competitive profile of substantial clean energy resources, a strong multi-national ICT sector, and an innovative and entrepreneurial culture and enterprise base. The Irish grid is itself a tremendous resource, as Ireland is home to an isolated network which services a fully industrialized economy with high penetrations of renewable energy, making it a uniquely desirable environment to explore novel technologies and market conditions. Indeed, around €1.5 billion is being invested in sustainable energy technologies and services in Ireland annually. Prospective energy employers in this field include ESB, EirGrid, GlenDimplex, Gaelectric, ElectroRoute, Climote, and many more.



University College Dublin  
Ireland's Global University



## ME Biosystems & Food Engineering (Two Years Full Time)

This Masters will provide graduates from an engineering or mathematical based science background the opportunity to specialise in the application of engineering science and design to biological materials and systems, especially in:

- Food process engineering
- Sustainable energy
- Environmental protection

Biosystems Engineers are at the forefront of the search for practical solutions to global problems and this specialisation will lead graduates to a wide variety of employment opportunities with companies focussing on processing of food and other biological materials, environmental protection, waste recycling, sustainable energy and green technologies.

### Professional Work Experience

The two years masters offers 6-8 months paid professional work experience, the practical skills acquired during this placement will give graduates a competitive advantage when applying for positions upon graduation.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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

120 credits  
taught masters

The ME Biosystems & Food Engineering involves lectures, tutorials, assignments, laboratory work, a research project and professional work experience.

### Indicative Module List:

- Food Process Engineering
- Food Refrigeration
- Food Chain Integrity
- Advanced Environmental Engineering
- Quantitative Risk Assessment
- Air Pollution
- Waste Management
- Life Cycle Assessment
- Building and Environment
- Biofuels and Renewable Energies





## Career Opportunities

Our graduates can find employment in:

- Bioprocess and food companies
- Environmental protection and waste recycling companies
- Sustainable energy and green technology companies



There are also opportunities to pursue PhD research in UCD and worldwide.

## Facilities and Resources

The School of Biosystems and Food Engineering has recently invested in excess of €600,000 in state-of-the-art facilities in spectroscopy, hyperspectral chemical imaging and chemometrics.

## Apply Now

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

## Entry Requirements

- An honours bachelor degree in engineering or a mathematically-based science subject (with a minimum of second class honours, grade 2).
- 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MSc Sustainable Energy & Green Technologies
- MSc Environmental Technology
- MEngSc Food Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

**EU Students – Katie O'Neill** E: [eamarketing@ucd.ie](mailto:eamarketing@ucd.ie) T: +353 1 716 1781 W: [www.ucd.ie/eacollege](http://www.ucd.ie/eacollege)

**International Students – E: rebecca.patterson@ucd.ie/internationaladmissions@ucd.ie** T: +353 1 716 8500 W: [www.ucd.ie/international](http://www.ucd.ie/international)





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## MEngSc Food Engineering (One Year Full Time)

The MEngSc in Food Engineering provides a comprehensive coverage of bioprocess and food manufacturing systems engineering. The programme will be of particular interest to graduates in Engineering, Science and related disciplines who are interested in food and bioprocess engineering, risk assessment, process development, process control, advanced manufacturing systems and associated environmental issues. On this programme you will develop new technical competencies in

food and bioprocess engineering, learn how to develop and execute a research plan and acquire skills in the application of leading edge technologies to the agri-food and biotechnology industries, including novel food processing technology, food process automation, risk assessment, computer vision for food quality and food safety. Excellent job prospects are available to graduates in the food, bioprocess, manufacturing and related agencies and industries.

### Delivered by a highly research intensive School

This programme is delivered by a highly research intensive School comprising a European Research Council Fellow and six Marie Curie Fellowships. Professors Sun and O'Donnell are in the world's top one percent of the most cited scientists in their field.

## Why study at UCD?



### Tradition

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### Global community

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### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



### Safety

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## Course Content and Structure

90 credits  
taught masters

60 credits  
taught modules

30 credits  
research project

### Modules include:

- Bioprocess Engineering Principles
- Food Chain Integrity
- Food Refrigeration Systems
- Research and Teaching Methods
- Waste to Energy
- Life Cycle Assessment
- Global Cold Chain Safety
- Quantitative Risk Assessment for Human and Animal Health
- Unit Operations in Bioprocess Engineering
- Advanced Food Process Engineering
- Thesis







## Career Opportunities

The manufacture of food and drink products is Ireland's most important indigenous industry with a turnover approaching €24 billion. Almost 50,000 people are directly employed in the food and drink sector with a further 60,000 employed indirectly in all regions of the country. The value of food and drink exports is €9 billion per annum.



Excellent job prospects are available to graduates in the food, bioprocess, manufacturing and related agencies and industries in Ireland. Graduates have progressed to career opportunities in a broad range of internationally recognised companies including: Glanbia, Kepac, Coco Cola, Guinness, Kerry group, APV, MC O'Sullivan, and ALcontrol Laboratories.



## Graduate Profile

### Owen Murphy, Panelto Foods

I chose the MEngSc in Food Engineering at UCD as I needed an update to my education.

The good name of UCD as a third level institute in Ireland especially for Food science was a big influencing factor. I have come across many graduates of UCD in my 20 years experience working in food manufacturing and the vast majority of them were successful in their careers. In general I found the modules interesting and relevant.

I continue to work in a medium sized food company, Panelto Foods. Since doing my masters I have moved from Technical Manager to Production Manager and do believe that completing the masters was a key element in achieving this move.

## Facilities and Resources

The School of Biosystems and Food Engineering has recently invested in excess of €600,000 in state-of-the-art facilities in spectroscopy, hyperspectral chemical imaging and chemometrics.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Biosystems and Food Engineering
- MSc Food Safety & Risk Analysis

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## MSc Environmental Technology (One Year Full Time)

The programme addresses the demand for graduates who have the skills to develop technological solutions for air, water and soil protection in existing and emerging sectors across industry (particularly agri-food and bioresources), consulting companies and regulatory authorities.

This programme will enable its students to acquire skills in the areas of environmental engineering, risk assessment, air pollution, waste management, life cycle assessment, buildings and environment, energy systems and sustainable environment. Students will enhance their ability to work effectively as an individual, in teams and in multi-disciplinary settings, together with the capacity to undertake lifelong learning.

### Multi-award winning course co-ordinator

Dr. Tom Curran co-ordinates the MSc Environmental Technology degree programme. He has received teaching awards from both UCD and the American Society of Engineering Education (ASEE), and research awards from both UCD (President's Award) and the American Society of Agricultural and Biological Engineers (ASABE) (Superior Paper Award). He is the Chairman of the Environmental Sciences Association of Ireland (ESAI).

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### Global community

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### Global careers

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### Safety

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

## Course Content and Structure

**90 credits**  
taught masters

**60 credits**  
taught modules

**30 credits**  
research project

### Modules include:

- Environmental Engineering
- Advanced Air Pollution
- Waste to Energy
- Life Cycle Assessment
- Buildings and Environment
- Energy Systems and Sustainable Environment
- Quantitative Risk Assessment for Human and Animal Health
- Research and Teaching Methods

Please see online for a full list of modules.



## Career Opportunities

Graduates of this masters can find employment opportunities in the following areas:

- Engineering consultancy
- Environmental regulation
- Eco-consulting and design
- Public Service
- Research



## Facilities and Resources

UCD School of Biosystems & Food Engineering hosts the only olfactometry laboratory in a university on the island of Ireland. This is a unique facility which is used for the measurement of environmental odours from a range of sources such as landfills, wastewater treatment plants and intensive agricultural units. The data produced can be combined with meteorological information and atmospheric dispersion models to generate contour plots of predicted odour nuisance around such sites.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum second class honours (NFQ level 8) or international equivalence 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MSc Sustainable Energy and Green Technologies

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

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## MSc Sustainable Energy and Green Technologies (One Year Full Time)

The MSc Sustainable Energy and Green Technologies enables you to focus on advanced education and training in the development and optimisation of renewable energy resource exploitation, the efficiency in energy generation and utilisation pathways (including energy conservation), the mitigation of environmental impacts and preparation for business innovation and job creation opportunities in renewable energy systems technology development, plant biotechnology and entrepreneurship.

The programme is underpinned by the best European practice by incorporating compatible EU policy drivers such as the Strategic Energy Technology Plan (SET Plan) for energy research, current R&D in Crops (through ongoing and research initiatives under the Charles Parsons Energy Research programme), and the collaboration with internationally acknowledged experts in the subject domains from universities, research institutions and industry. This programme enables you to maintain relevance of academic and research training, and therefore enhance your employability in the area of sustainable energy.

## Why study at UCD?



### Tradition

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### Global profile

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### Global community

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### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



### Safety

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

## Delivered by a highly research intensive School

This programme is delivered by a highly research intensive School comprising a European Research Council Fellow and six Marie Curie Fellowships. The programme co-ordinator Dr Kevin McDonnell won the inaugural SEAI Energy innovation award and also the Environcom award for energy innovation. The School is the recipient of €2.5 million external research funding in 2013.

## Course Content and Structure

90 credits  
taught masters

60 credits  
taught modules

30 credits  
research project

### This MSc programme modules include:

- BioFuels & Bioresources
- Energy Systems & Environment
- LCA
- Environmental Law
- Entrepreneurship & Biotech
- Research Methods
- Waste to Energy
- Air Pollution
- LCA Application
- Energy Systems Integration
- Thesis
- Nutrient Management
- Entrepreneurship & Biotech
- Plant Genetics
- Data Analytics Online STAT
- Root & Alternative Crops
- GIS and Data Interpretation
- Developments in Crop Production & Utilistaion
- Power & Machinery







## Career Opportunities

Graduates of the MSc in Sustainable Energy and Green Technologies programme will have competences and skill sets for employment in companies and organisations geared to planning, deploying and utilising a wide range of green technologies systems including environmental impact mitigation. Typical opportunities will be in waste-to-energy facilities, biogas plants, ethanol production facilities, district-heating operations, renewable energy research laboratories, facilities utilising wind energy (including wind farms), solar energy, biomass and hydrogen energy, as well as leading energy utility companies, and research institutions.



The knowledge and skill you gain from the Innovation and Technology Transfer module specifically will provide you with unique insights into the entrepreneurial process, from identification of the innovative idea through to the launch of a successful business.



## Graduate Profile

### Luke Martin, Patel Tonra

Having completed an internship as an environmental analyst whilst on a J-1 in Chicago, I knew I wanted to work in the area of sustainability however I lacked the appropriate credentials to tie down that entry-level position upon returning to Ireland. I chose the MSc in Sustainable Energy and Green Technologies programme at UCD because it appeared to cover all the relevant areas of this industry. The course more than exceeded my expectations on a number of levels; firstly all of the academics were approachable and adept in each of their respective fields, making every lecture interesting and worthwhile. There was an underlying theme throughout all aspects of the course of how to apply what we learned in the classroom to real life situations and this was reinforced through mock interviews, C.V clinics and most valuably, through the completion of a business plan in the entrepreneurship module. With an overall ambition of becoming a sustainable energy consultant, I firmly believe this course has geared me up for a career in this budding industry. I would wholeheartedly recommend UCD to anyone looking to advance their careers, be it in business or academia.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MSc Environmental Technology
- MSc Environmental Sustainability

## Fees

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Ireland's Global University



## ME Electronic & Computer Engineering (Two Years Full Time)

Ireland has evolved into one of the world's most important centres for high-tech businesses. The ICT sector in Ireland is a thriving and growing industry with 9 of the top 10 global ICT companies maintaining a presence in Ireland. The economic contribution of the sector is substantial. The ICT industry is responsible for approximately 25% of Ireland's total turnover,

representing one third of Ireland's exports by value. This ME in Electronic and Computer Engineering is a two-year programme designed to develop professional engineers who can excel in the electronic and computer sectors worldwide.

### Professional work placements provided

Delivered by a highly research intensive School holding 101-150 in the QS world subject rankings, this two-year programme provides 6-8 months professional work experience as an embedded element of the programme.

## Why study at UCD?



### Tradition

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### Global community

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### Global careers

Degrees with high employability; dedicated careers support; 1 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

120 credits  
taught masters

65 credits  
taught modules

30 credits  
work placement

25 credits  
research project

### Modules cover the following topics:

- Control Theory
- Digital System Design
- Wireless Systems
- RF Electronics
- Foundations of Computing
- Computer Networks
- Software Engineering
- Analogue Integrated Circuits
- Digital Communications
- Operating Systems
- Signal Processing
- Entrepreneurial Management
- Embedded Systems
- Photonic Engineering
- Neural Engineering
- Electromagnetic Waves
- Communications Theory
- Professional Engineering Management

Project topics are spread across a wide range, but related to and drawing on the topics covered in the taught modules. Similarly, your work placement can involve a variety of roles in a range of different companies in the electronic and computer engineering field.





## Career Opportunities

There are excellent job opportunities available in the ICT sector in Ireland. The Irish Government is to amend the work permit processing system in a bid to attract overseas workers to fill skill gaps in crucial areas like ICT and engineering. The government has an ongoing commitment to generate thousands of jobs in the ICT sector every year.

At present there are as many as 5,000 job vacancies in Ireland's burgeoning ICT sector and this gap could grow as Ireland hurtles towards becoming the digital capital of Europe. Prospective employers include Accenture, Analog Devices, Intel, Microsoft, SAP, Synopsys and Xilinx.



## Graduate Profile

### Jonathan Gorman, Everis

As job markets become increasingly competitive, employers are seeking more from recent graduates than just knowledge, but experience. I feel that the ME Electronic & Computer Engineering master's programme meets both of these requirements by providing a unique research project, as well as a professional work placement. These gave me the opportunity to apply my theoretical engineering knowledge in a number of practical environments, something which I believe makes this degree programme unique. This is complemented by state-of-the-art facilities and highly knowledgeable professors, both of which helped to maximise my learning. I also enjoyed the degree's flexibility and the wide range of modules offered, allowing me to tailor my degree as I pleased. I would have no doubts in advising anyone who is aiming to specialise in electronic or computer engineering to consider the ME Electronic & Computer Engineering masters at UCD.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
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- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MEngSc Electronic & Computer Engineering
- MSc Advanced Software Engineering
- MSc Computer Science NL (Negotiated Learning)
- MSc Digital Investigation & Forensic Computing
- MSc Information Systems

## Fees

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## Contact Us

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## MEngSc Electronic and Computer Engineering (One Year Full Time)

Ireland has evolved into one of the world's most important centres for high-tech businesses. The ICT sector in Ireland is a thriving and growing industry with 9 of the top 10 global ICT companies maintaining a presence in Ireland. The economic contribution of the sector is substantial with the ICT industry currently responsible for approximately 25% of Ireland's total turnover, representing one third of Ireland's exports by value.

The MEngSc in Electronic & Computer Engineering is a year-long programme designed to provide training for engineers who wish to work at a high level in the electronic and computer sectors worldwide. You will develop an advanced understanding of the theory and technology of modern electronic and computer systems and their business environment. You will build your knowledge through taught modules and project work and you will learn about design, innovation and problem solving at a level significantly beyond that of your primary degree.

### Graduates are equipped to fill the Irish ICT skills gap

Delivered by a highly research active School holding 101-150 in the QS World Subject Rankings, this masters provides intensive training to up-skill students to meet the needs of the growing Irish ICT sector.

## Why study at UCD?



### Tradition

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### Global profile

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### Global careers

Degrees with high employability; dedicated careers support; 1 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 masters

60 credits  
taught modules

30 credits  
dissertation

Designed to meet the demands of modern high technology industries, this MEngSc covers topics from electronic engineering, computer science and business delivered by internationally renowned academics. The modules that you take will depend on your interests and on your prior education.

### Modules cover the following topics:

- Control Theory
- Digital System Design
- Wireless Systems
- RF Electronics
- Research Skills and Techniques
- Digital Communications
- Processor Design
- Computer Science for Engineers
- Foundations of Computing
- Networks and Internet Systems
- Enterprise, Innovation and Entrepreneurship
- Photonic Engineering
- Numerical Algorithms
- Performance of Computer Systems
- Advances in Wireless networking
- Software Engineering Project
- Operating Systems
- Analogue Integrated Circuits
- Neural Engineering
- Advanced Signal Processing





## Career Opportunities

There are excellent job opportunities available in the ICT sector in Ireland. The Irish Government is to amend the work permit processing system in a bid to attract overseas workers to fill skill gaps in crucial areas like ICT and engineering. The government has an ongoing commitment to generate thousands of jobs in the ICT sector every year. At present there are as many as 5,000 job vacancies in Ireland's burgeoning ICT sector and this gap could grow as Ireland hurtles towards becoming the digital capital of Europe. Prospective employers include: Accenture, Analog Devices, Intel, Microsoft, SAP, Synopsys and Xilinx.



## Facilities and Resources

The UCD School of Electrical, Electronic and Communications Engineering has state-of-the-art electronics and computer laboratories.

### Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Electronic & Computer Engineering
- MSc Advanced Software Engineering
- MSc Computer Science NL (Negotiated Learning)
- MSc Digital Investigation & Forensic Computing
- MSc Information Systems

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Student Profile

### Sudharsan Rajasekaran

I was working as an assistant software engineer in India, having obtained my bachelor degree in electronic engineering. I had a thirst to further my education in technology engineering and as such, I started searching for a Masters level education choosing to do the MEngSc Electronic and Computer engineering at UCD.

During my course I was taught with problems that industries are currently facing, making it incredibly relevant. The course was quite brilliantly structured between hardware (Electronics) and software (Computer Science), designed in a way to learn by practice, offering me the confidence to face today's industrial demands. The course also offered a module on entrepreneurship which I believe to be incredibly important for my future Engineering career.

Right now I am working alongside leading researchers for my master's project which is guiding me on the right career path and I truly believe that I will be one among tomorrow's Industrial leader's. Moreover, I am proud to be a UCD student because it has one of the best campuses in the world.

## Contact Us

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## ME Electrical Energy Engineering (Two Years Full Time)

The Electricity Research Centre (ERC) at University College Dublin leads research activity in Energy Systems Integration globally. The ME Electrical Energy Engineering programme is taught by world-renowned academics from the ERC. The professionally accredited programme addresses the challenge of transitioning towards sustainable power systems, integrating diverse generation and demand-side technologies while maintaining stable and economic operation. It provides strong training in various aspects of

electrical engineering and enhances this through a major research project and professional work experience.

If you are a mathematically strong engineering student who is interested in power systems analysis and renewables integration, and you are seeking a professional career in the power system and smart grid sectors, then this programme is ideal for you.

### Top international ranking

Delivered by a highly research active School holding a position of 101-150 in the QS World Subject Rankings, this programme is taught by academics from the world-leading Electricity Research Centre for the integration of renewables into power systems.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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

120 credits  
taught masters

65 credits  
taught modules

25 credits  
research project

30 credits  
professional work experience

### Core modules include:

- Applications of Power Electronics
- Control Theory
- Electrical Energy Thesis
- Electrical Machines
- Power Electronics and Drives
- Power System Dynamics and Control
- Power System Design
- Power System Engineering
- Power System Operation
- Professional Engineering (Management)
- Professional Work Experience (short/long)
- Renewable Energy Systems

### Optional modules include:

- Advanced Signal Processing
- Analogue Electronics
- Applied Dynamics II
- Communication Systems
- Energy Economics and Policy
- Energy Systems & Climate Change
- Engineering Thermodynamics II
- Entrepreneurship in Engineering
- Fossil Fuels, Carbon Capture and Storage
- Networks and Internet Systems
- Numerical Algorithms
- Power Electronics Technology
- Power System Stability Analysis
- Signal Processing
- Wireless Systems
- Optimisation Techniques for Engineers

Six-month professional work experience opportunities are offered with national and international partners involving electrical utilities, manufacturers and research institutions.





## Career Opportunities

By completing the ME Electrical Engineering programme, you will become a graduate with power systems expertise, whose rare skills will be attractive to a wide variety of technical and managerial roles in the electrical utility and smart grid sectors on an international scale, e.g. Alstom, ABB, EPRI, EirGrid, ESB, GE, Siemens.

The ME programme also provides an excellent starting point for those aiming for a PhD programme and a research career within a university or specialised research institution.



## Graduate Profile

### Ruth Galvin, ESB International

Having completed my Bachelor of Engineering Science in UCD, the Electrical Energy Engineering Masters in UCD offered a natural progression to deepen my knowledge and skills for the Electrical Energy and Power Systems sector. For me, the Masters program struck the perfect balance between taught modules, self directed research, and an internship program. Within the two year course I got the opportunity to undertake a six month Internship with Arup Consulting Engineers in Dublin, which provided invaluable work place experience and facilitated networking in the industry.

The thesis is both a challenging and rewarding aspect of the program and provided me with the scope to tackle a very topical issue in the Power Electronics field, and work with members of the ERC. Having access to the Opal RT Real Time Digital Simulator in the ERC was a real plus when it came to testing my project design.

The Masters program provided a platform for a choice of graduate positions for 2015 graduates.

## Facilities and Resources

A wide range of modern industry standard software tools for power system analysis and laboratory facilities are integrated into the taught and project-based modules. A real time digital simulator is also available for hardware in the loop testing and development of prototypes.

### Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

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- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Energy Systems
- MSc Sustainable Energy & Green Technologies

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## ME Biomedical Engineering (Two Years Full Time)

There are currently 250 medical technology companies in Ireland, exporting €7.2b worth of product annually and employing 25,000 people – the highest number of people working in the industry in any country in Europe, per head of population. Biomedical Engineering involves the application of engineering principles to healthcare and medicine. It is an interdisciplinary field, requiring knowledge of both living systems and engineering.

When studying on this programme, you will work with staff and researchers at UCD who have extensive experience in ground-breaking biomedical engineering research. You will also develop a knowledge of how the medical device industry is regulated and how new products are introduced to the market, drawing from experience within UCD which includes pioneering companies. For more information visit [www.ucd.ie/biomedicalengineering/](http://www.ucd.ie/biomedicalengineering/)

## Why study at UCD?



### Tradition

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### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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 ME Biomedical Engineering at UCD offers a 6-8 month work placement, exposure to world leading researchers and superlative employment opportunities.

## Course Content and Structure

120 credits  
taught masters

60 credits  
taught modules

30 credits  
professional work experience

30 credits  
research project

### Modules include:

- Cell Culture & Tissue Engineering
- Biomedical Signals and Images
- Neural Engineering
- Medical Sciences for Biomedical Engineers
- Medical Device Design
- Nanomaterials
- Biomaterials
- Biomechanics
- Rehabilitation Engineering
- Bioinstrumentation
- Neuromuscular and Membrane Biology
- An Introduction to Physiology: Human Cells and Tissues
- Physiology of the Cardiovascular System

Please see online for a full list of modules.





## Career Opportunities

The Irish Medtech Sector is robust and career opportunities upon graduation from this programme are exemplary. Exports of medical devices and diagnostics products now represent 8% of Ireland's total merchandise exports and growth prospects for the industry globally remain good. Many of the world's top medical technology companies have invested significantly in Ireland and a number of exciting, research-based, indigenous companies are emerging and competing internationally.



The Irish government has identified the medical technology sector as one of the key drivers of industrial growth for the future and provides a wide range of supports to encourage and foster this growth. The medical technology industry in Ireland is changing from being prominently manufacturing to being more complex and driven by R&D. Prospective employers include Boston Scientific, ResMed, Shimmer, Bio-Medical Research (BMR), Abbott, Stryker and De Puy.



## Facilities and Resources

Modules are taught by faculty engaged in cutting edge research, working with national and international networks of industrial and clinical collaborators. Students have the opportunity to work with research teams and collaborators, with access to lab facilities across UCD School of Electrical and Electronic Engineering, UCD School of Mechanical & Materials Engineering, UCD School of Chemical and Bioprocessing Engineering and the UCD School of Medicine and Medical Science.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## Graduate Profile

### Ciaran Hendry, Boston Scientific

I completed my ME Biomedical Engineering in UCD as it allowed me the opportunity to have control on what I wanted to learn. Throughout the entirety of the course there were options that allowed me to improve my technical, interpersonal and communication skills. This degree also allowed me to work on projects and coursework that I found incredibly interesting and it ensured I had job prospects when I graduated. In 2012, I began the Boston Scientific graduate programme and I am now employed as a Quality Engineer. UCD provided me with the intellectual discipline and knowledge to become a leader in this industry. I would highly recommend UCD for your postgraduate studies.

## International Students

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- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MSc Biotechnology
- ME Electronic and Computer Engineering
- ME Mechanical Engineering
- MSc Connected Health

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## MEngSc Biopharmaceutical Engineering (One Year Full Time)

Pharmaceutical and Biopharmaceutical manufacturing are key sectors in the Irish economy generating over 50 per cent of GDP. This sector has seen continued and sustained success with a number of high profile investments in recent years providing excellent job opportunities for graduates. The programme and its academic faculty are closely linked with the National Institute for Bioprocessing Research and Training (NIBRT), which is a global centre of excellence for training and research in bioprocessing.

The MEngSc in Biopharmaceutical Engineering programme provides substantial coverage of scientific, technical, management and regulatory issues associated with this industry. The aim of this programme is to offer an internationally recognised high quality flexible curriculum, which follows the latest developments in science and technology. This programme is suitable for Science and Engineering graduates wishing to obtain a qualification which is highly relevant to the biopharmaceutical industry.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



### Safety

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

## Excellent employment record

This programme has an excellent employment record. It equips graduates with an internationally recognised qualification and the knowledge and skills to obtain a high level, professional career in the pharmaceutical sector.

## Course Content and Structure

90 credits  
taught masters

60 credits  
taught modules

30 credits  
project

The programme provides students with an understanding of the principle scientific and engineering challenges involved in the design, operation and management of biopharmaceutical production facilities.

### Modules include:

- Animal Cell Culture Technology
- Bioprocess Design
- Bioreactor, Modelling and Control
- Bio-separations
- Bioprocessing Laboratory Practice
- Regulatory Affairs Science for
- Biotechnology Products
- Facility Design and Operation
- Biopharmaceutical Industry Regulation and Management
- Bioprocess Scale-up and Technology Transfer
- Lean Six Sigma
- Principles of Biopharmaceutical Engineering
- Molecular Genetics & Biotechnology
- Research / Design project



## Career Opportunities

Your career opportunities upon graduation from this programme are exemplary. Ireland is a world player in pharmaceutical and biopharmaceutical production.

The pharmaceutical industry in Ireland comprises a mix of international and local companies. Approximately, 120 overseas companies have plants in Ireland, including many of largest pharmaceutical and biopharmaceutical companies in the world including Pfizer, GSK, Merck, AbbVie, Novartis, Janssen Biologics (Ireland), Biomarin, Roche, Sanofi Genzyme, BMS, Amgen and many more.

Upon graduation from this programme, you will enjoy an extremely high job placement rate with superlative career opportunities.



## Facilities and Resources

This programme is closely linked with the NIBRT facility. NIBRT offers a quality training and research experience not previously possible anywhere in the world. At the heart of the NIBRT building is the bioprocessing pilot plant, consisting of extensive upstream, downstream, fill-finish and the associated analytical facilities. These facilities are all operated in a realistic GMP simulated, operational manufacturing environment.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MEngSc Chemical Engineering
- MSc Biotechnology

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Graduate Profile

### Kate McCarthy, Amgen

An Undergraduate Degree in Medicinal Chemistry meant I had a detailed knowledge of how drugs interact at a cellular level. I recognized that I wanted to know more about the Biopharmaceutical industry and this Masters course provided me with that knowledge; it bridged the gap between the science behind the drug and the manufacturing process.

The modules I studied such as lean six sigma, regulatory affairs, GMP, facility design & bio-separations were a brilliant platform providing me with the means to obtain a manufacturing role within industry. Not only was the theory taught exceptionally well but also the practical training carried out in the NIBRT facility within the UCD Campus allowed for a means of putting theory into practice and gave a great insight into the processes carried out within a typical Biopharmaceutical plant.

I would highly recommend this course to anyone looking to broaden their career opportunities as well as their understanding of the industry.

## Contact Us

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## MEngSc Chemical Engineering (One Year Full Time)

The Chemical Engineering industry in Ireland is one of its strongest exporting sectors and is representative of the chemical process industries worldwide. Opportunities for employment exist in a broad range of areas including; the pharmaceutical industry, the petrochemical and energy industries, the ICT industries including medical devices and the heavy chemicals industries.

The MEngSc in Chemical Engineering offers advanced level education for students with primary degrees in chemical engineering/technology programmes. On this programme you will improve your conceptual and practical skills in both the fundamental and applied principles of chemical engineering practice. The programme covers advanced topics in chemical engineering and includes extensive project work in both design (a team effort) and in an individualised research project.

### Top international ranking

This programme is delivered by a highly research intensive School holding 101-150 in the QS World Subject Rankings and Top 6 in Ireland/UK Employer's and Research rankings and awarded €6.12M research funding in 2013.

## Why study at UCD?



### Tradition

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### Global profile

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### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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 masters

60 credits  
taught modules

30 credits  
dissertation

### Core modules include:

- Chemical & Bioprocess Reaction Engineering
- Advanced Separation Processes
- Advanced Heat Transfer and Fluid Mechanics
- Process Design, Safety and Economics
- Advanced Experimental Design
- Process Instrumentation & Control

### Optional modules include:

- Environmental Engineering
- Energy Systems & Climate Change
- Fossil Fuels, Carbon Capture & Storage
- Chemical Processes of Sustainable and Renewable Energy
- Bioreactor Modelling and Control
- Energy Economics
- Nanomaterials

The programme's teaching methods are highly interactive and varied with contributions from a combination of industrial practitioners and leading researchers in their fields.





## Career Opportunities

Your career opportunities upon graduation from this programme are exemplary. It is anticipated that the graduates will play an important role in the development, design and operation of chemical processes in industry at international level in the coming years.



Graduates can enter a wide selection of possible industries including fine chemicals (e.g. Procter and Gamble), heavy chemicals (e.g. CRH), pharmaceuticals (e.g. Pfizer, Lilly, Merck), oil and gas (e.g. Conoco Philips, Exxon, Shell, Chevron), as well as consulting and business.

## Facilities and Resources

The UCD School of Chemical and Bioprocess Engineering is home to a 5 million euro state-of-the-art microscopy laboratory which includes FIB-SEM, a Cryo-TEM and a high end XPS/AES/SIMS facility, as well as a range of analytical tools including AFM, FTIR, UV-Vis and chromatography (HPLC/GC-MS). Laboratory facilities available for project work include Multiphase Flow apparatus, Membrane Reactors, Vacuum Pressure Swing Adsorption for gas separations, Atomic Layer Deposition and Chemical Bath Deposition apparatus, a suite of photoelectrochemical facilities including solar simulators and potentiostats for solar cell work, and preparatory laboratories for the synthesis of proprietary materials and access to plasma deposition systems with concomitant analytical tools (e.g. ellipsometry).

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NQF level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MEngSc Biopharmaceutical Engineering
- MSc Biotechnology

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## Graduate Profile

### Huayu Cao, PhD Student

I chose UCD because it has a great reputation in China and it has a partnership with my university. There is a great student/teacher ratio here and therefore I have better access to resources. After attaining a first class honours in the MEngSc Chemical Engineering, I have now progressed to a PhD. Thanks to the support of my supervisor and my group members, I have learned a lot of experimental skills in the past two years of my research, which will most definitely help me in the future. UCD is an outstanding university and I am so grateful that I made this decision four years ago. I would describe UCD as supportive, comfortable, international campus, full of challenges and opportunities.



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## ME Civil, Structural & Environmental Engineering (Two Year Full time)

This programme prepares graduates to work as professional engineers in the broad field of infrastructural design, construction and management. Graduates will satisfy the academic requirements for the title of Chartered Engineer. You can choose a specialisation either in

civil, structural or environmental engineering and as such the range of module options are extensive. The programme is delivered by a culturally diverse group of internationally renowned academic staff.

### Premier facts

This programme is delivered by a highly research intensive School which is in the top 101–150 in the QS world subject rankings and 68 by scientific citation rankings. It offers an internship as an accredited element of the programme.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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

120 credits  
masters

65 credits  
taught modules

30 credit  
work placement

25 credits  
research masters

### Modules include:

- Civil Engineering Design
- Civil Engineering Systems
- Geotechnical Engineering
- Water Engineering
- Construction Management
- Design Project
- Highway Engineering
- Quantitative Methods for Engineers
- Professional Engineering Management

### Optional Modules include:

- Waste management
- Structural Dynamics
- Advanced Structural Analysis and Design

- Fibre Reinforced Composites
- Innovation Leadership
- Environmental Impact Assessment (Biology & Environmental Sci)
- Professional Engineering Finance
- Computational Continuum Mechanics I
- Geographical information systems
- Realising Built Projects
- Water, Waste and Environmental Modelling
- Integrated Municipal Solid Waste Management
- Creative Design and Idea Development
- Applied Statistical Modelling
- Environmental Engineering and Reliability

- Environmental Law
- Advanced Environmental Economics
- Transportation Engineering
- Professional Work Experience (June to August)
- Peer Assisted Tutoring in CSEE
- Unit Treatment Process in Water Engineering
- Hydraulic Engineering Design
- Bridge Engineering
- Soil Mechanics and Geotechnical Engineering
- Soil-Structure Interaction
- Structural Design (Buildings)
- Transport Operations and Planning



## Career Opportunities

Graduates from the programme will find employment as engineers in the private sector (e.g. engineering consultancy, engineering design, project management, civil engineering contractors), in the public sector (e.g. local government, higher education sector), and in the non-governmental sector (e.g. environmental advocacies, NGO's), or may wish to pursue further qualifications (e.g. PhD, MBA) to become even more specialised.



Graduates will be equipped with the skills that allow them to be "lifelong learners", whether in the pursuit of knowledge for personal use or in connection with their engineering careers. Employers of civil, structural and environmental engineers include commercial firms, engineering consultancies, government agencies, and non-governmental organisations, all well known in Ireland and many with global operations. Some of these include:

- RPS Group
- Nicholas O'Dwyer
- Environmental Protection Agency
- Local Authorities
- AECOM
- SISK
- ARUP



## Graduate Profile

### Mark Gilsenan, AECOM

I completed this ME programme in September 2012 in order to meet the new minimum education requirement for becoming a chartered engineer. The modules offered as part of the ME programme were both interesting and challenging. One aspect of the ME programme I particularly enjoyed was the research project undertaken in Year Two of the programme. It afforded me the opportunity to conduct extensive research into an area of civil engineering using my own initiative and guided by an academic. I am currently working in Essex, UK in the bridges division of AECOM, a worldwide engineering consultancy, which was advertised through the programme's social media channels. Having an ME in Civil Engineering was essential in securing this position. I would highly recommend the programme.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree in a related Engineering discipline with a minimum upper second class honours (NFQ level 8) or international equivalence.
- 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MEngSc Structural Engineering
- MEngSc Water, Waste & Environmental Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## MEngSc Water, Waste & Environmental Engineering (One Year Full time)

This programme prepares graduates to work as professional engineers in the broad field of environmental protection and management. You will gain advanced theoretical and conceptual knowledge and understanding in the area of environmental engineering on topics such as environmental modelling, water and wastewater treatment, solid waste management, and environmental data analysis, amongst others.

Environmental engineering involves the application of engineering and scientific principles to solve or prevent environmental problems. This programme allows you to gain competencies in the design of facilities to treat water, wastewater and wastes; in the development and protection of water resources; in the design of flood protection systems; in the analysis of environmental data; and in the design of infrastructure that respects the principles of environmental sustainability.

### Premier facts

This programme is delivered by a highly research intensive School which is in the top 101–150 in the QS world subject rankings and 62 in the world citation rankings.

## Why study at UCD?



### Tradition

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### Global profile

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### Global community

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### Global careers

Degrees with high employability; dedicated careers support; 1 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

30 credits  
research project

### Sample modules include:

- Introduction to Water Resources Engineering
- Science and Technology for Sustainable Development
- Environmental Research Project
- Water Waste and Environmental Modelling
- Environmental Impact Assessment
- Quantitative Methods for Engineers
- Advanced Air Pollution
- Systems and Geotechnics
- Unit Treatment Process in Water Engineering
- Hydraulic Engineering Design
- Integrated Municipal Solid Waste Management
- Freshwater Resources Assessment
- GIS and Data Analyses
- GIS and Remote Sensing
- Remote Sensing



## Career Opportunities

Graduates from the programme will find employment as engineers in the private sector (e.g., engineering consultancy, engineering design, project management, risk assessment, waste management), in the public sector (e.g., environmental protection, regulation, standards development, local government, river basin management), and in the nongovernmental sector (e.g., environmental advocacies, NGO's), or may wish to pursue further qualifications (e.g., PhD, MBA) to become even more specialised.



Graduates will be equipped with the skills that allow them to be "lifelong learners", whether in the pursuit of knowledge for personal use or in connection with their engineering careers. Employers of environmental engineers include commercial firms, engineering consultancies, government agencies, and non-governmental organisations, all well known in Ireland and many with global operations. Some of these include:

- RPS Group
- White Young Green
- Nicholas O'Dwyer
- Atkins
- Greenstar
- McKinsey and Company
- Mazars
- Environmental Protection Agency
- Local Authorities
- Engineers Without Borders
- Engineers Against Poverty
- Friends of the Earth

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree in a related Engineering discipline with a minimum upper second class honours (NFQ level 8) or international equivalence.
- 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Civil, Structural & Environmental Engineering
- MEngSc Structural Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

**EU Students – Katie O'Neill** E: [eamarketing@ucd.ie](mailto:eamarketing@ucd.ie) T: +353 1 716 1781 W: [www.ucd.ie/eacollege](http://www.ucd.ie/eacollege)

**International Students – E: rebecca.patterson@ucd.ie/internationaladmissions@ucd.ie** T: +353 1 716 8500 W: [www.ucd.ie/international](http://www.ucd.ie/international)

## Graduate Profile

### Karl Corcoran, OCSC Consulting Engineers

I chose the MEngSc Water, Waste & Environmental Engineering because it was the only programme of this nature available in the Republic of Ireland. A mixture of lectures and workshops for several modules also allowed me to gain hands-on experience of some of the computer packages used in the fields of water, waste and environmental engineering. I am currently working with OCSC Consulting Engineers. The position I was hired for, and the main sectors that I am currently working in, were those covered in the MEngSc and having completed this masters certainly helped me to obtain employment in this field. I would highly recommend this programme.



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## MEngSc Structural Engineering (One Year Full time)

Studying at Masters level you will cover a wide range of topics not traditionally covered in undergraduate degrees; the programme includes specialist modules in structural dynamics, bridge engineering, soil structure interaction as well as construction management and practice. You will also learn how to work in a multidisciplinary setting through combined modules with Architecture students. Structural engineering is

a continually evolving profession, and through the third Semester Research Project you will learn how to apply this specialist knowledge to develop new concepts and ideas under the supervision of research active academic staff. This programme will distinguish you as having specialist knowledge in the area of Structural Engineering and provide you with a competitive edge over your peers in the job market.

### Premier facts

This programme is delivered by a highly research intensive School which is in the top 101–150 in the QS world subject rankings and 62 in the world citation rankings.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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

with

30 credit  
research project

### Topics include the following:

- Structural Dynamics
- Advanced Structural Analysis & Design
- Materials & Design
- Construction Management
- Realising Built Projects
- Quantitative Methods for Engineers
- Structural Design Buildings
- Bridge Engineering
- Soil Mechanics & Geotechnical Engineering
- Soil-Structure Interaction
- Engineering Design Project
- Materials & Technology
- Design Technologies
- Professional Engineering Management
- Structural Research Project







## Career Opportunities

Our graduates would typically follow careers in structural engineering consultancy, engineering contracting, construction management, project planning both in Ireland and abroad.

Employed at Masters level, graduates can expect more responsibility, and faster professional progression, earlier in their careers.



## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree in a related Engineering discipline with a minimum upper second class honours (NFQ level 8) or international equivalence.
- 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Civil, Structural & Environmental Engineering
- MEngSc Water, Waste & Environmental Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## ME Materials Science & Engineering (Two Years Full Time)

Materials Scientists and Engineers are at the centre of virtually every area of technology, from optoelectronics to space materials and from automotive and aeromotive manufacturing to biomedical devices.

Graduates from this programme will be fully qualified professional engineers, capable of working anywhere in the world at an advanced technical level. This Masters is accredited by both Engineers Ireland and the IOM3 (UK).

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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 accredited and provides the opportunity for a 6 – 8 month industrial placement as well as an extensive research project.

## Course Content and Structure

**120 credits**  
taught masters

**60 credits**  
taught engineering modules

**30 credits**  
professional work experience

**30 credits**  
research project

### Core modules include:

- Energy Systems and Climate Change
- Material Science and Engineering II
- Technical Ceramics
- Professional Engineering (Finance)
- Solid-State Electronics I
- Fracture Mechanics
- Kinetics & Thermodynamics of Materials
- Material Science & Engineering III
- Advanced Composites and Polymer Engineering

### Optional modules include:

- Computational Continuum Mechanics I
- Manufacturing Engineering II
- Medical Device Design
- Chemistry of Materials
- Physics of Nanomaterials
- Advanced Metals/Materials Processing
- Nanomaterials
- Professional Engineering (Management)
- Biomaterials



## Career Opportunities

If you are a graduate of the ME Materials Science & Engineering programme you can look forward to limitless employment opportunities in a substantive array of industries. Most companies worldwide employ materials professionals.

A number of UCD materials graduates have been employed by companies such as General Electric or Rolls Royce (Aerospace), Intel (Electronics), Stryker or Boston Scientific (Biomedical) or Siemens (Energy).



## Graduate Profile

### Gavin McGlynn

I chose this course as I was interested in working with the smallest building blocks in engineering. Once in the course I became fascinated by CSI-like investigations used to understand a material and how to improve its properties. My work placement brought me to the UK to work with polycrystalline diamond composites and was so fascinating that I did my research project with the company. The course itself covered a broad range of processes and applications but was also flexible and allowed me to delve deeper into areas of interest to me such as medical devices, composites and nano-materials. This flexibility allowed me to work with people from different backgrounds which gave me new perspectives on how to tackle problems. The skills I have gained during this degree have given me a great grounding, allowing me to work in almost any field.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Mechanical Engineering
- MEngSc Materials Science & Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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**International Students – E: rebecca.patterson@ucd.ie/internationaladmissions@ucd.ie** T: +353 1 716 8500 W: [www.ucd.ie/international](http://www.ucd.ie/international)





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## MEngSc Materials Science & Engineering (One Year Full Time)

Materials Scientists and Engineers are at the centre of virtually every area of technology from optoelectronics to space materials and from automotive and aeromotive manufacturing to biomedical devices.

Graduates will gain expertise in fundamental materials science and real world engineering application of materials including, metals, ceramics, composites and semi-conductors.

### Why study at UCD?



#### Tradition

Established 1854, with 160 years of teaching & research excellence



#### Global profile

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



#### Global community

Over 6,000 international students from over 120 countries study at UCD



#### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



#### Safety

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

### 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 30 years ago, and housing the only spin-in company within UCD Engineering and attracting approximately €5m in research funding annually.

## Course Content and Structure

**90 credits**  
taught masters

**60 credits**  
taught engineering modules

**30 credits**  
research project

#### Core modules include:

- Materials Science and Engineering II
- Material Science & Engineering III
- Technical Ceramics
- Materials Thermodynamics & Kinetics
- Advanced Materials Processing
- Advanced Composites and Polymer Engineering
- Nanomaterials
- Research Skills and Technique

#### Option modules include:

- Chemistry of Materials
- Solid-State Electronics I
- Professional Engineering (Finance)
- Professional Engineering (Management)
- Computational Continuum Mechanics I
- Computational Continuum Mechanics II
- Fracture Mechanics
- Energy Systems and Climate Change
- Design and Innovation
- Medical Device Design
- Physics of Nanomaterials
- Nanomaterials Chemistry
- Biomaterials





## 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), Stryker or Boston Scientific (Biomedical) or Siemens (Energy).



## Student Profile

### Richard Ruane

I chose the one year masters in Materials Science and Engineering at UCD as this was without doubt the only course of its type in Ireland, not to mention UCD's School of Mechanical and Materials Engineering long established reputation as the finest school of engineering in Ireland. My background was initially in chemistry, having obtained an undergraduate degree in Chemical and Pharmaceutical Science from DCU. However, I decided to shift towards materials science, an incredibly broad discipline in itself, as it has been and will continue to be the field which contributes most to the advancement of technology.

In this course you will study anything from biomedical applications of titanium alloys to the materials science behind nanomaterials like graphene. Wherever your interests lie, this program will give you a broad yet detailed understanding of materials science and its engineering applications. I highly recommend this course to anyone who has an interest in becoming a materials scientist or engineer.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Materials Science & Engineering
- ME Mechanical Engineering

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## ME Energy Systems Engineering (Two Years Full Time)

The ME in Energy Systems Engineering prepares graduates to meet the engineering, economic and environmental challenges facing the energy systems of developed and developing countries.

This programme is aimed at those who require a recognised professional qualification in Energy Systems Engineering.

### Professional work placements provided

This Masters is a professionally accredited qualification delivered by a school with a long history of innovation. The programme provides the opportunity for a 6 month industrial placement as well as an extensive research project.

## Course Content and Structure

120 credits  
taught masters

60 credits  
taught modules

30 credits  
professional work experience

30 credits  
research project

### Core modules:

- Energy Systems & Climate Change
- Fossil Fuels, Carbon Capture & Storage
- Chemical Processes of Sustainable and Renewable Energy
- Power System Operation
- Wind Energy
- Engineering Thermodynamics II
- Electrical & Electronic Circuits
- Electrical Energy Systems II
- Professional Engineering Management
- Research Skills and Techniques
- Research Project / Thesis
- Energy Systems in Buildings

### Option modules:

- Energy in Transport
- Heat Transfer
- Engineering Thermodynamics III
- Air Pollution
- Environmental Engineering
- Fundamentals
- Nuclear Physics
- Energy Economics and Policy
- Entrepreneurial Management
- Kinetics & Thermodynamics of Materials
- Advanced Composites and Polymer Engineering
- Nanomaterials
- Measurement & Instrumentation
- Control Theory / Process
- Instrumentation & Control
- Entrepreneurial Management
- Electrical Machines
- Power Electronics and Drives
- Applications of Power Electronics
- Power System Design
- Power System Engineering
- Power System Control
- Power Electronics Technology
- Power System Stability Analysis
- Mechanics of Fluids II & III
- Computational Continuum
- Mechanics I & II
- Technical Communication
- Professional Work Placement (2-year programme only)

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



### Safety

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







## Career Opportunities

Graduates of this ME Energy Systems programme will be equipped with the skill set and knowledge vital for crucial roles in research, design and development in companies in the energy sector. Alumni from this programme have obtained jobs in a wide variety of organisations in Ireland and further afield, the majority in the energy sector.



Prospective employers include: ESB International (Dublin), Commission for Energy Regulation (Dublin), Airport Authority, Intel Ireland Limited, Dalkia Ltd (Dublin), Accenture (Dublin), Dimplex Renewables (Irl), Enercon GmbH (Ireland and Germany), Zenith Technologies (Cork), ConocoPhillips (Cork), Imtech (UK), MCS Kenny (UK), Sellafield Ltd (UK), Schletter UK Ltd, Schwenk Zement (Germany), KBR (UK), Capula Ltd (UK), Eclareon (Spain), Dynapower LLC (USA), Sea Breeze Power Corp (Canada), KBR (Australia), and Independent Market Operator (Perth, Australia). Significant numbers of graduates have also decided to pursue further study to PhD level, at UCD and elsewhere.



## Graduate Profile

### James Egan, Murex

I chose UCD for my undergraduate Engineering studies as the college is well renowned for its high standard of Engineering facilities, research and academic staff. I was aware that the Energy Systems sector is an area of massive economic growth worldwide, and that increasing the efficiency of these energy systems is becoming increasingly important year after year. My research project focused on improving methods of Building Energy Performance Simulation, an area which is currently of huge importance in both the research and construction industries. The involvement of my project supervisor and other academics within the school of Engineering provided the support required to make this a project which I feel will really stand to me in the future. My six-month internship in Murex was organised by UCD through the internship programme and the knowledge and methods of practical decision making which is instilled in students of the ME Energy Systems course is greatly sought after by Murex and other companies and I have recently been offered a full time contract. The majority of my classmates have also been offered full time contracts in a variety of companies. I would strongly recommend the Energy Systems course to anybody with an interest in the area.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Electrical Energy Engineering
- MSc Sustainable Energy & Green Technologies

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## ME Mechanical Engineering (Two Years Full Time)

The ME in Mechanical Engineering is a two-year professional engineering graduate degree. Graduates of the programme will be eligible for the title of Chartered Engineer (CEng). This programme is aimed at graduate Mechanical Engineers seeking to obtain a masters degree in Mechanical Engineering. You will gain advanced theoretical, conceptual and practical knowledge in the application of Mechanical Engineering.

Emphasis is placed on the skills required to generate new knowledge through research. This is achieved through independent and project-based learning while working with UCD academics and researchers on contemporary research projects.

### Why study at UCD?



#### Tradition

Established 1854, with 160 years of teaching & research excellence



#### Global profile

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



#### Global community

Over 6,000 international students from over 120 countries study at UCD



#### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



#### Safety

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

### Internationally recognised degree

This ME is professionally accredited by Engineers Ireland and recognised by the Washington Accord for Chartered Engineer status. The programme provides the opportunity for a 6 month industrial placement as well as an extensive research project.

## Course Content and Structure

**120 credits**  
taught masters

**65 credits**  
taught modules

**30 credits**  
professional work experience

**25 credits**  
research project

#### Core modules include:

- Online Research Skills and Techniques
- Engineering Thermodynamics III
- Mechanics of Fluids II, Mechanics of Fluids III
- Manufacturing Engineering II
- Computational Continuum Mechanics I
- Computational Continuum Mechanics II
- Fracture Mechanics
- Mechanics of Solids II, Mechanics of Solids III
- Professional Engineering Management
- Control Theory AND / OR Process Instrumentation and Control

#### Optional modules include:

- Technical Ceramics
- Energy Systems and Climate Change
- Kinetics and Thermodynamics of Materials
- Applied and Computational Mathematics
- Materials Science and Engineering
- Advanced Metals and Materials Processing
- Advanced Composites and Polymer Engineering
- Nanomaterials
- Technical Communications







## Career Opportunities

In the year immediately after graduation, this programme boasts a 95% success rate for graduates seeking employment or progression to research education. Mechanical engineers are at the centre of every area of technology.



Graduates from this programme will be eligible to become fully qualified professional engineers, capable of working anywhere in the world at an advanced technical level or as a professional engineering manager. In the recent past, UCD ME Mechanical Engineering graduates have progressed to careers in industries such as: aerospace industry (e.g. European Space Agency), automobile industry (e.g. Ferrari, Jaguar Land Rover, Ford, Denso), biomedical industry (e.g. Medtronic, Boston Scientific, Stryker), oil and gas (Cameron) and materials and manufacturing (Henkel, Kingspan).



## Graduate Profile

### Gareth Boyle, PhD Student

I chose to do the ME in Mechanical Engineering at UCD because the programme offers a six month work placement on top of a wide variety of advanced academic modules and a final year project. This challenging programme significantly enhanced my engineering knowledge, provided me with the tools needed to take on more applied engineering tasks and gave me an opportunity to work with some of the biggest transport, aerospace, automobile and biomedical companies in Ireland and the UK.

Following the ME, I worked as a Research Engineer in the School of Mechanical Engineering's Adhesion Group on various projects involving composite materials testing and computational fluid dynamics before starting a Biomechanical Engineering PhD at UCD. This is a testament to the broadness of the ME Mechanical programme, as there is a diverse range of mechanical engineering fields to which you can apply what you learn during the ME, making you an attractive candidate for many advanced engineering roles.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in Mechanical Engineering or equivalent and the appropriate prior learning.
- 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Materials Science & Engineering
- MEngSc Materials Science & Engineering
- ME Energy Systems

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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## MEngSc Engineering Management (One Year Full Time)

The MEngSc Engineering Management programme offers a unique opportunity for engineering students to deepen their knowledge of the areas of business and management and is open to engineering students of all disciplines. Professional engineers need to understand the environment in which they practice. As their career progresses, engineers are increasingly

involved in functions such as finance, quality, marketing and strategy. This course provides grounding in these areas while building on student's technical expertise to develop the next generation of industry leaders.

### Established international industrial connections

This programme is delivered by the School of Mechanical and Materials Engineering which has almost 50 years' experience in teaching Engineering Management. The School has well established industrial links both nationally and worldwide.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 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 masters

75 credits  
taught modules

15 credits  
dissertation

### Modules include:

- Supply Chain Design and Analysis
- Operations Management
- Quantitative Methods for Engineers
- Data Mining
- Business Information Systems Management
- Management and Organisation Behaviour
- Marketing Management
- Engineering Project Management
- Design and Innovation
- Research Methods
- Research Paper
- Technical Option

Please see online for a full list of modules. The Technical option provides opportunity for students to select one 5 ECTS module per semester to enhance their engineering discipline specific knowledge.





## Career Opportunities

Career opportunities are very broad as the MEngSc Engineering Management students are not narrow technical specialists but "T-shaped" individuals combining specialist skills with a broad understanding of the business environment.

This skill set is invaluable when embarking upon careers in many sectors including energy, consumer goods, medical technology, management consulting, ICT and automotive. Prospective employers include Accenture, SAP and Tesla Motors.



## Graduate Profile

### Xuanang Lv, Kerry Group

Choosing Ireland as the location for my postgraduate studies meant I could use my English and have the opportunity to interact with people from all over the world. I chose UCD due to its top university ranking in Technology and Science and because its business graduate school is fantastic. I particularly liked the modern UCD campus, however the highlight of my year at UCD was when my team won a case study competition sponsored by Deloitte and when I competed in the MIT Operation Simulation contest with two other Irish classmates. I wanted to work in the food or FMCG market and I have now secured an operation position in Shanghai as part of the Kerry Group graduate programme. The masters perfectly prepared me for my chosen career path.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a minimum upper second class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.
- A detailed explanation of your interest in the programme must be provided.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- ME Engineering with Business
- MSc Management

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

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Ireland's Global University



## ME Engineering with Business (Two Years Full Time)

Engineering is viewed by many as an ideal preparation for a career in business or management. The ME in Engineering with Business offers a unique opportunity for engineering students to complement their technical expertise with a deep understanding of the business and management aspects of engineering practice such as operations, human

resources, marketing and strategy. As a result graduates will develop a distinctively cross disciplinary perspective which is essential to a successful career in business. If you have a mechanical, civil, electrical or electronics background and you plan to practice engineering in a business context, then the ME (Engineering with Business) is an excellent choice for you.

### In collaboration with Ireland's leading business school, UCD Michael Smurfit Business Graduate School

This programme is delivered in conjunction with the UCD Michael Smurfit Graduate Business School, Ireland's leading business school, which is ranked 35th in Europe by the Financial Times. The programme was voted Gradireland Engineering Postgraduate Course of the Year 2015, and is the only business-oriented masters programme accredited by Engineers Ireland for Chartered Engineering status.

## Why study at UCD?



### Tradition

Established 1854, with 160 years of teaching & research excellence



### Global profile

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



### Global community

Over 6,000 international students from over 120 countries study at UCD



### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa (for non-EU students)



### Safety

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

120 credits  
taught masters

30 credits  
engineering modules

50 credits  
business and technology management modules

40 credits  
live learning

Technical modules from within your chosen discipline selected from the range of current engineering masters programmes.

#### Business and Technology Management modules:

- Entrepreneurship
- Marketing
- Operations Management
- Business Information Systems
- Organisational Behavior
- Supply Chain Design
- Project Management
- Economics

Please see online for a full list of modules.

#### Live Learning:

This programme offers students the opportunity to complete a 6-month work placement, where students' technical and business knowledge can be applied and developed in a dynamic real-world setting. This is then followed by an industry focused research project which combines the academic and practice based learning.







## Career Opportunities

The ME in Engineering with Business is designed to produce fully qualified engineers who have a particular interest in and understanding of the business context within which engineers usually operate. It was conceived to address the perceived lack of 'industry-ready' engineers coming out of third level education. Career opportunities are very broad as the ME degree positions the student not as a narrow technical specialist but as a 'T-shaped' individual, combining specialist skills with a broad understanding of the business environment. In addition to careers within their technical specialisations graduates can consider careers in commercial roles, management consulting, the financial sector or IT.



Previous employers of alumni include: Accenture, PJ Walls, PM Group, MSD Carlow, Abbvie, Jaguar UK, RPS Consulting, Intel and Deloitte.



## Graduate Profile

### James Toomey, Accenture Consulting

This course provided me with many skills which have enabled me to succeed in the working world. I was exposed to a range of business, management and technology related subjects which evoked my interest to pursue a career in technology consultancy. During my masters, I was given the opportunity to take a 7-month internship with Accenture, immersing myself within a professional consultancy environment. This internship was an invaluable experience and ultimately led to a job offer with Accenture. The subjects I studied during my masters allowed me to gain a competitive advantage over others and helped in securing a job and kick-starting my career. Taking the ME Engineering with business opened many doors and gave me the opportunity to explore and pursue a career that was the right fit for me.

## Apply Now

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

## Entry Requirements

- A 4-year bachelors degree with a first class honours (NFQ level 8) or international equivalence in a relevant Engineering 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.

## International Students

- Stay in Ireland after graduating for 12 months to seek employment
- Approved by US Dept. of Education for federally supported loans
- Apply for Non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)

## Related Masters Programmes of Interest

- MEngSc Engineering Management
- MSc Management
- MSc Supply Chain Management
- MSc Project Management

## Fees

Fee information is available [www.ucd.ie/fees](http://www.ucd.ie/fees)

## Contact Us

**EU Students – Katie O'Neill** E: [eamarketing@ucd.ie](mailto:eamarketing@ucd.ie) T: +353 1 716 1781 W: [www.ucd.ie/eacollege](http://www.ucd.ie/eacollege)

**International Students – E: rebecca.patterson@ucd.ie/internationaladmissions@ucd.ie** T: +353 1 716 8500 W: [www.ucd.ie/international](http://www.ucd.ie/international)



