



University College Dublin  
Ireland's Global University

## 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. Graduates of this programme gain a comprehensive understanding of the complex multi-disciplinary and often conflicting issues that arise in the search for effective solutions.

Graduates will also be capable of working

anywhere in the world at an advanced technical level or as a professional engineering manager.

Candidates who have already completed a 4-year professional engineering bachelor degree may be eligible for recognition of prior learning, enabling them to complete this programme over 12 months. The ME programme is professionally accredited by Engineers Ireland and recognised by the Washington Accord for Chartered Engineer status.



### 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 6-8 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:

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

#### Optional modules include:

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

## WHY STUDY AT UCD?



### Professional Work Experience

6-8 month Professional Work Experience Internship opportunity



### 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; 2 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.

Previous employers of ME in Energy Systems Graduates include: Accenture (Dublin), Arup (Ireland), Berkeley Lab, Berkeley (California), Commission for Energy Regulation (Dublin), Dublin Airport Authority, Intel Ireland Limited, Dalkia Ltd (Dublin), Dimplex Renewables (Irl), Dynapower LLC (USA), Eclareon (Spain), EirGrid (Dublin), ESB International (Dublin), Exergyn (Dublin), Enercon GmbH (Ireland and Germany), Imtech (UK), Independent Market Operator (Perth, Australia), Intel (Ireland), Irish Cement Limited, Phillips 66 Whitegate Refinery Ltd (Ireland), KBR (Australia), KBR (UK), MCS Kenny (UK), National Grid (UK), Northstar Drillstem Testers, Edmonton, (Canada), PM Group (Ireland), PwC (Ireland), RPS Group (Ireland), Saudi Aramco (Saudi Arabia), Schletter UK Ltd, Schwenk Zement (Germany), Sea Breeze Power Corp (Canada), Sellafeld Ltd (UK), Trelleborg Marine Systems, and Melbourne (Australia). Significant numbers of graduates have also decided to pursue further study to PhD level, at UCD and elsewhere.



## GRADUATE PROFILE

**Gavin Hickey**  
Energia

I chose UCD for its superior facilities, innovative research and academic credentials. This Masters is well suited to anyone looking to enhance their knowledge of the Energy sector, an exciting area of massive economic growth and change. The course takes a detailed look at the current energy system and the potential steps that can be taken to reduce its impact on the environment. A wide range of modules are offered which looks at everything from energy economics and policy, to power systems operation, all of which provide an in-depth understanding of the energy market. An understanding of these areas is an extremely attractive quality to employers both in Ireland and abroad. An additional benefit of this course is the 6-8 month internship organised by UCD which gave me the opportunity to work in Energia. During this time, I was able to apply my technical knowledge in a practical setting and enhance my engineering and professional skills. Since finishing the Master's, I have taken up a full-time position with Energia, the majority of my classmates have also secured jobs. I would strongly recommend the Energy Systems Masters to anybody looking to pursue a career in the energy sector.

## 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 bachelor's degree with a minimum upper second class honours (NFQ level 8) or international equivalent 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

- Option to stay in Ireland to seek employment and/or work for 2 years after graduating
- Approved by US Dept. of Education for federally supported loans
- Apply for University non-EU Scholarships: [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships)
- Apply for College of Engineering & Architecture scholarships: [www.ucd.ie/eacollege/study/noneus/scholarships](http://www.ucd.ie/eacollege/study/noneus/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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