

# MEngSc Electrical Power Networks

One Year Full Time (September start)



## Introduction

The modern power system is radically changing, as it integrates more renewable generation, accommodates the growing electrification of transport & heating, and embraces new smart grid control approaches. The MEngSc in Electrical Power Networks is a 1 year programme specifically designed to give students a fundamental understanding of the design and operation of electrical power networks in the context of the transition to a more sustainable energy system. The programme is taught by world renowned

academics with a strong track record in electrical power systems and energy research. Teaching is underpinned and supported by the research agenda of the UCD Energy Institute which is working towards a net zero carbon future. The programme will equip students with advanced training in specialized aspects of electrical engineering and provide the skills required to pursue a career in the rapidly evolving power system and smart grid sectors.

## Course Highlight

This programme is taught by academics from the world-leading Energy Institute, a focal point of research on the integration of renewables into electrical networks and energy systems. If you are interested in being part of the transition to a more sustainable future and you are seeking a professional career in the power system and smart grid sectors, then this programme is ideal for you.

## Course Content and Structure

- 90 credits taught master's
- 60 credits taught modules
- 30 credits research project

### Core modules include:

- Control Theory
- Power System Operation
- Power System Design
- Applications of Power Electronics
- Power System Dynamics and Control
- Optimisation Techniques for Engineers
- MEngSc Electrical Project

### Optional modules may include:

- Numerical Algorithms
- Data Science in Python (MD)
- Energy Economics and Policy
- Modelling and Simulation
- Power Electronics and Drives
- Renewable Energy Systems
- Power Electronics Technology
- Professional Engineering (Management)
- Technical Communication

## Why study at UCD?



### Graduate education

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



### Global community

Over 11,000 international students from more than 152 countries



### Global profile

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



### Global careers

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





## Career Opportunities

The demand for graduates in the electrical power and energy sectors both in Ireland and internationally has never been stronger. The programme equips graduates with the skills and knowledge for employment opportunities in areas such as;

- Renewable energy development
- Power system operation
- Energy services
- Smart grid technology development
- Electricity trading

## Programme Director

Associate Professor  
Paul Cuffe



## Applicant Profile

- Applicants must hold a 4-year bachelor's degree with a minimum upper second class honours (NFQ level 8) or international equivalent in electrical engineering, electronic engineering, power systems, power electronics, and energy-related subjects.
- Applicants whose first language is not English must also demonstrate English language proficiency of IELTS 6.5 (no band less than 6.0 in each element), or equivalent.
- Students who do not meet the IELTS requirement may wish to consider taking the Pre-Sessional or Pre-Master's Pathway. Full details [www.ucd.ie/alc/programmes/pathways/](http://www.ucd.ie/alc/programmes/pathways/)

## International Fees and Scholarships

Tuition fee information is available on [www.ucd.ie/fees](http://www.ucd.ie/fees). Please note that UCD offers a number of graduate scholarships for full-time, self-funding international students, holding an offer of a place on a UCD master's programme. Please see [www.ucd.ie/global/scholarships/](http://www.ucd.ie/global/scholarships/) for further information.

## Related Master's Programmes of Interest

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

The world has a huge appetite for clean electricity, necessitating the development and operation of smart electricity networks to meet this demand. This ongoing energy transition has created a significant demand for quality engineering graduates with specialised skills in designing and operating power grids. Wind, solar, and battery technologies all require access to the power grid, and top-class engineers are essential to facilitate this. This one-year master's programme is designed for bright students who want to specialise in power grid engineering.

### CONTACT US

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### APPLY NOW

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