

MEngSc Electrical Power Networks

One Year Full Time (September start)



Introduction

The modern power system is in the midst of a radical change, as it transitions to the use of increased variable renewable generation, deals with growing demands for the 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 masters
- 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

Option 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

9,500 international students and a 300,000 alumni network across 165 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





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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
Terence O'Donnell



Achieving a decarbonized and sustainable energy system to help mitigate climate change is one of the major challenges facing humanity today. The electrical power system has a central role to play in this as emphasis is placed on increasing renewable generation and electrification of the transport and heating sectors. These developments are rapidly changing the way the power system is planned, designed, and operated. Ireland is at the forefront of these changes with ambitious targets to reach up to 80% renewable generation by 2030, reduce greenhouse gas emissions by 51% by 2030 and achieve net zero by 2050. Consequently, demand for employment in the sectors related to renewable energy and smart grid management has never been higher.

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

International Fees and Scholarships

Tuition fee information is available on 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 masters programme. Please see www.ucd.ie/global/scholarships/ for further information.

Related Masters Programmes of Interest

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

CONTACT US

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APPLY NOW

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