Course code: T378

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?

Tradition

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

Employability

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

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

UCD ENERGY INSTITUTE

Career Opportunities

By completing the MEngSc in Electrical Power Networks, you will graduate with specialist power systems expertise and rare skills that are highly attractive to a wide range of technical and managerial roles across the electrical utility, energy and smart grid sectors, both in Ireland and internationally. Graduates can pursue opportunities in areas including renewable energy development, power system operation, energy services, smart grid technology, electricity trading and network planning, with potential employers including ABB, Alstom, EDF, EirGrid, EPRI, ESB, GE, NREL and Siemens. As the demand for skilled professionals in the electrical power and energy sectors continues to grow, the programme provides graduates with the knowledge and practical expertise to contribute to the development of resilient, flexible and sustainable energy systems. It also provides an excellent foundation for those seeking to progress to PhD study and pursue research careers within universities or specialised research institutions.

Graduate Profile

Emanuele Schiano
Graduate Electrical Engineer
Fingleton White

"My master's programme has given me the opportunity to apply the theoretical knowledge I had previously developed through a more practical and industry-oriented approach. During the course, I worked with design and simulation software, strengthened my technical understanding of electrical power networks, and developed skills that are directly relevant to my future career. It has also been a valuable opportunity to collaborate with an international group of students from different cultures and backgrounds.",

Entry Requirements

- 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/

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 master's programme. Please see 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

For more information

Get in Touch