University College Dub
Ireland's Global University

PROFESSIONAL DIPLOMA IN POWER SYSTEM ANALYSIS (ONE YEAR PART TIME)

The Climate Action Plan launched in 2019 by the Irish Government defines a new growth strategy and roadmap to decarbonise the energy sector and renovate buildings and transportation to help cut energy bills and usage. The recent European Green Deal goes in the same direction and will have several implications for Ireland, in particular for the electrical power system.

There is, in particular, a need for training for electrical engineers who are currently in employment, or are expected to be recruited into the sector, in the field of electrical energy system security, control, stability analysis, resilience, renewable energy, converter-interfaced generation and low-inertia systems. This new Professional Diploma fills this gap.

HIGHLY RELEVANT TOPICS

The programme offers state-of-the-art modules in power system modelling, dynamics and control. Particular emphasis is given to renewable energy systems. The programme also offers modules on optimisation techniques and stability analysis of nonlinear systems, which are specifically designed for applications to power system problems.

WHY STUDY AT UCD?

Tradition
Established 1854, with 160 years of teaching and research excellence

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

Global community
Over 8,500 international students from over 130 countries study at UCD

Global careers
Degrees with high employability; dedicated careers support; two-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

20 credits
taught modules

The Professional Diploma in Power System Analysis comprises 20 credits of Option Modules (four modules). These module are selected from six modules which are offered across the Spring and Autumn Trimesters.

Spring Modules
- Power System Design
- Applications of Power Electronics
- Nonlinear System Stability

Autumn Modules
- Renewable Energy Systems
- Power System Dynamics & Control
- Optimisation Techniques

All lectures are in the morning of week days and labs in the afternoon. A blended learning environment will be offered.

Course code: T361

CAREER OPPORTUNITIES

The programme represents an opportunity for those who have previous experience, or are currently employed, in the electrical engineering sector and wish to enhance their knowledge in the fields of electrical energy system security, control, stability analysis, resilience, renewable energy, converter-interfaced generation and low-inertia systems. This knowldge will be of particular interest to companies such as EirGrid, ESB, SSE, Energia, Arup, Enel X and PremiumPower into the future.

LEARNING OUTCOMES

The learning outcomes are as follows: (1) familiarity with and knowledge of power system dynamic modelling and control of power systems with high shares of renewable energy resources; (2) knowledge of state-of-art numerical methods for the stability analysis of power systems; (3) knowledge of state-of-art optimization methods for the technical and economical operation of power systems; (4) ability to communicate effectively in the fields of power system modelling, control, optimization and stability analysis and (5) ability to learn independently.

APPLY NOW

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

ENTRY REQUIREMENTS

- Applicants should hold a BE degree in Electrical Engineering or equivalent.
- 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.

RELATED MASTERS PROGRAMMES OF INTEREST

- Professional Diploma in Electronic Design
- Professional Diploma in Operations Excellence

FEES

Fee information is available www.ucd.ie/fees

PROGRAMME DIRECTOR

Prof. Federico Milano

Electric energy is a basic component of the productive process in any economic sector. The security, stability and quality of the electrical energy supply are key components in maintaining the productivity of industrial countries. A combination of technical innovation and the increasing presence of renewable and non-conventional generation in modern electrical networks all over the world highlights the necessity of studying several aspects related to the modelling, regulation, and dynamic of power systems.

UCD has a long and well-known tradition in Electrical Engineering and offers a range of high-quality modules on electric power systems as part of its degree programmes. Traditionally, these modules have only been available to full-time students, although the content is of great interest to graduates working in industry. This new Professional Diploma targets specifically this category of students and includes a selection of modules that address the most urgent societal and technical challenges, such as emission reduction, efficient control and resilience, of the electric grid.

CONTACT US

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