Master of Electrical Power Engineering

The Master of Electrical Power Engineering provides a tailored higher degree program specific to the needs of the Australian electricity industry. Delivered by nationally recognised industry experts, the program is designed to ensure that students gain a better understanding of the design processes and technical requirements for power system engineering. Subjects are delivered in three-day intensive Workshops (either in person or by distance) with some additional on-line learning suitable for industry professional working fulltime.

The courses within the program are focused on current technologies and challenges faced by engineers working in the field of electrical power engineering. The course modules are specifically designed to meet industry needs; they provide structured learning, development, knowledge and experience difficult to gain through workplace training programs. The modules have been selected from areas key to the Australian electricity transmission and distribution industry, ensuring you receive up-to-date industry-specific education.

These courses are only offered on a part-time basis, making them perfect for industry professionals looking to increase or enhance their skills whilst working full-time.

The course has been designed to accommodate the training allowances of industry professionals; each year we offer a total of four subjects with two modules offered each session and delivered on either side of a specified weekend to minimize workplace disruption. This is followed by examinations and written research assignments.

Credit exemptions may be available to students who have completed equivalent course modules at other institutions.

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ADMISSION REQUIREMENTS

A Bachelor degree with Honours in Electrical Engineering from a recognised tertiary institution. Applicants without a Bachelor degree in Electrical Engineering may be considered based on other qualifications together with significant relevant work experience.

This course is currently not available to international students.

Link to Course Handbook - http://www.uow.edu.au/handbook/yr2017/pg/H16000097.html l

It is possible to exit the program on successful completion of 24 credit points of study and be awarded the Graduate Certificate in Electrical Power Engineering.

DELIVERY METHOD

The courses are structured for intensive subject module delivery. Modules may be undertaken either through face-to-face learning or via distance.

A feature of these courses is the integration of presentations from recognised practising industry experts on specialist topics. These workshops are used to enhance communication, contact with content experts, and networking with other industry professionals enrolled in the course.

The Master program is two years if two subjects are taken per session. Students choosing to study only one subject per session may have to follow a restricted course structure as not all subjects are offered each session. Students can elect to study eight coursework subjects which include learning and assessment tasks, followed by examinations in the following areas:

OVERHEAD, UNDERGROUND LINE DESIGN & CONSTRUCTION covers the design and construction aspects of overhead lines and underground cables, including planning, lightning protection, insulation, earthing and stress management.

POWER SYSTEMS EARTHING addresses the complex inductive and conductive relationships between substation and power line and cable earthing systems and other metallic systems

POWER QUALITY provides an understanding of power quality through the study of disturbances in the electricity supply system that might prevent customer equipment from operating as intended. It includes causes, effects, acceptable levels, determination of responsibility and mitigation.

DISTRIBUTION SYSTEM RELIABILITY gives a comprehensive overview of electricity network reliability as it affects end users, introducing outage costs and how these may be balanced against CAPEX and OPEX in cost benefit analysis.

RENEWABLE & EMBEDDED GENERATION provides students with an understanding of the significance of renewable and embedded generation in the operation of electric power systems.

HIGH VOLTAGE ENGINEERING addresses issues such as: voltage stresses that occur in high voltage electrical power systems, how these stresses are generated and distributed throughout equipment, and techniques to accommodate voltage stresses.

DISTRIBUTION NETWORK PLANNING deals with modern distribution network planning systems and processes and includes: demand forecasting, embedded generation, standardisation of assets, smart grid and new technologies.

ELECTRICITY MARKET STRUCTURES & DEMAND SIDE INTERGRATION provides an understanding of market structures and the role of demand side integration in advancing the efficient and effective use of electricity in support of power system and customer needs.

POWER SYSTEM PROTECTION AND COMMUNICATION uses examples and practical illustrations from realistic scenarios to reinforce the purpose and applications of protective systems in electrical distribution networks.

ELECTRICAL SAFETY deals with the crucial safety aspects relevant to the power industry, including ventricular fibrillation, arcing hazards and burns, isolation, earth tagging and lock-out systems and maintaining a safety culture in the workplace.

SUBSTATION DESIGN covers aspects of the engineering and design of electrical substations and includes topics such as: major equipment selection, layout, site design, grounding system design, insulation coordination, protective relaying and instrumentation, design for reliability and substation automation.

POWER SYSTEM STABILITY focuses on steady state and transient stability with emphasis on types of stability relevant to distributed resources (e.g. Voltage stability and rotor angle stability) connected to distribution networks including load modelling, rotating machine modelling, excitation and governor control, and modelling of other distributed resources, small signal stability of large embedded generators (e.g. single machine) in distribution networks.

POWER SYSTEM INSULATION COORDINATION is key to power system engineers who design, build and operate electricity grids where its equipment, personnel and the customers are protected from abnormal over voltage conditions which arise due to lightning and various switching operations. The module covers the nature of these over voltage conditions, modelling and analysis of the power system equipment and the over voltages, insulation coordination in substation environments, surge arrestor application, standards, and example calculations.

STUDY RESOURCES AND HELP

We understand that some mature-age students and industry professionals may have not studied for a number of years and may be nervous or concerned about assessments, exams and study. The University has a number of resources available to help make the transition back into formal study easier for you.

The *Learning Development* site is a free service for students and provides you with information on time management, essay writing, referencing, exam preparation tips and much more. The Online Study Resource links will be most helpful.

The *Current Students* site has a wide range of information for students.

The *Study Information* site in particular has information on plagiarism, referencing, thesis writing and more.

2017 FEES

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- Full course fee **$30,960**

For further information, please contact:

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