



## MASTER OF ELECTRICAL POWER ENGINEERING

The Master of Electrical Power Engineering will provide advanced power engineering knowledge to electrical engineering graduates working within the industry. The course is delivered by industry experts from the Australian electricity distribution sector.

The specialised modules provide the skills and education required to meet the constantly evolving needs of the power sector.

Subjects can be taken on an individual basis, leading to either a Graduate Certificate or a Masters degree.

The course has been designed to accommodate the training allowances of the industry, delivering subject modules over three days, with a total of four subjects on offer each year. Modules will be delivered on either side of a specified weekend to minimise workplace disruption.

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

### AN INDUSTRY RECOGNISED POSTGRAD QUALIFICATION

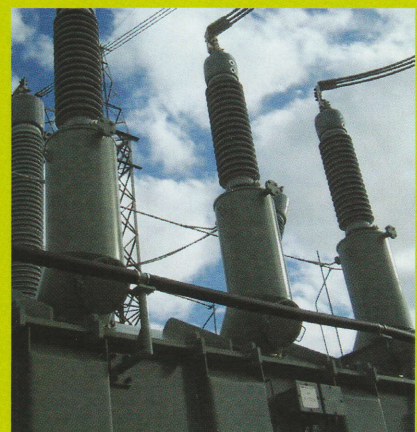
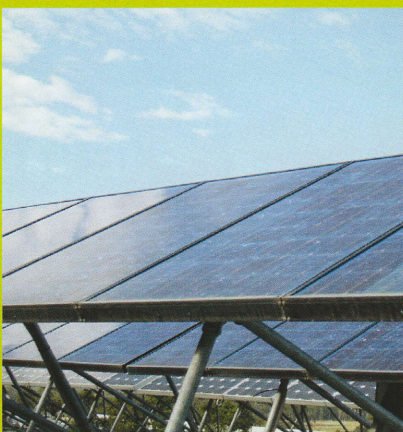
- An industry recognised postgraduate qualification
- Courses delivered by industry experts
- Industry specific subjects
- Modular subject delivery to meet working requirements
- Opportunity to undertake a research project on a specialist industry topic
- Convenient Sydney CBD location
- Masters degree with option of exiting halfway with a Graduate Certificate

### ENTRY REQUIREMENTS

- Four-year Bachelor of Engineering degree specialising in Electrical Engineering, with a minimum weighted average mark (WAM) of 60% (relevant industry experience of at least two years may be considered in lieu of the 60% WAM).

### MASTERS DEGREE WITH OPTION OF EXITING HALFWAY WITH A GRADUATE CERTIFICATE

- MODULAR PROGRAM FOR WORKING PROFESSIONALS
- EARLY EXIT GRADUATE CERTIFICATE OPTION
- SYDNEY CBD VENUE





# MASTER OF ELECTRICAL POWER ENGINEERING

## GRADUATE CERTIFICATE IN ELECTRICAL POWER ENGINEERING

### SUBJECTS OFFERED\*

- Overhead, Underground Line Design and Construction
- Power Quality
- Distribution System Reliability
- Renewable and Embedded Generation
- High Voltage Engineering
- Distribution Network Planning
- Electricity Market Structures and Demand Side Integration
- Power System Earthing
- Power System Protection and Communication
- Substation Design
- Electrical Safety
- Power System Stability
- Research Project

\* not all subjects will be available each year.

### SUBJECTS

**Overhead, Underground Line Design and Construction** covers the design and construction aspects of overhead lines and underground cables, including planning, lightning protection, insulation, earthing and stress management.

**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** will give a comprehensive overview of electricity network reliability as it affects end-use customers, introducing outage costs and how these may be balanced against CAPEX and OPEX in cost benefit analysis.

**Renewable and Embedded Generation** will provide 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 distribute themselves 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 and Demand Side Integration** 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 Systems Earthing** addresses the complex inductive and conductive relationships between substation and powerline and cable earthing systems and other metallic systems.

**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.

**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.

**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.

**Power System Stability** will focus 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.

### VENUE

The delivery venue will be in the Sydney CBD.

### FEES

Fee per module is currently \$2,500.

### GENERAL ENQUIRIES

Please direct all enquiries to:

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