



Electricity Engineers'
Association

**PROFESSIONAL
DEVELOPMENT**

Professional Certificate in Power Systems Design

PROSPECTUS

August 2022



Professional Certificate in Power Systems Design

Summary

Designed and delivered in collaboration with Mitton ElectroNet, the Professional Certificate in Power Systems Design (PSD) is a suite of courses created for graduate engineers, paraprofessionals, and seasoned engineers to expose them to various aspects of power systems design in a New Zealand context.

The courses are designed to fit around full-time work, and are delivered online and in-person with industry subject matter experts. This means a mix of self-directed learning, webinars and written and scenario-based assessments.

Who is Involved?

The EEA is proud to be partnering with [Mitton ElectroNet](#) to design, develop and deliver all of the courses in the Professional Certificate in PSD.

Mitton ElectroNet provide market-leading electrical design and consulting services across Aotearoa / New Zealand, and have the breadth of industry knowledge and expertise to provide you with:

- High quality learning outcomes
- Engaging and interesting case-studies
- Confidence that what you are learning is industry best-practice

What will you learn?

The table below provides an overview of the scope of each of the eight courses:

PSD-010 Power System Components for Electricity Supply

Describe the functional requirements of a power system, and how technology and demand is changing the way electricity supply assets are configured in New Zealand.

PSD-020 Substation Design for Electricity Supply

Describe the equipment requirements for substations, evaluate a range of substation configurations and produce a substation layout to meet a given set of safety and performance requirements.

PSD-030 Earthing Systems for Electricity Supply

Describe the purpose and objectives of earthing, explain how earthing system design decisions are made, identify, and resolve an earthing system design problem.

PSD-040 Protection Systems for Electricity Supply

Describe the purpose and objectives of protection systems, evaluate a range of protection devices, and design a protection scheme to meet a given set of safety and performance requirements.

PSD-050 Operating Systems for Electricity Supply

Describe the purpose and objectives of operating systems, evaluate a range of software-based communication and control tools, and participate in the design of a control centre.



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PSD-060 High Voltage Plant for Heavy Industry

Describe the workings of high voltage equipment used in industrial settings and evaluate and optimise the safety and efficiency of an industrial power system.

PSD-070 Low Voltage Systems for Electricity Supply

Describe the workings of equipment used in low voltage reticulation for a variety of settings and design an interface between a low voltage system and a high voltage system.

PSD-080 Power System Optimisation for Electricity Supply

Evaluate the security, reliability and safety of a high voltage network configuration and make recommendations for improvement.

Professional Certificate in PSD Structure

The Professional Certificate in PSD has been designed to cover the key physical assets in the power supply industry. While the eight courses can also be undertaken individually with students receiving a completion certificate, to complete the Professional Certificate you will need to complete:

- PSD-010 Power System Components (prerequisite)
- Any one of PSD-020, PSD-030, PSD-040, PSD-050; and
- PSD-080 Power System Optimisation.

PSD-060 and PSD-070 are designed for specific parts of the distribution supply chain (high voltage installations and low voltage reticulation) and are optional only.

How will you learn?

Each of the courses has been designed to take no less than 20 hours allow you to credit your participation to your [Engineering NZ CPD](#) hours. While PSD-010 and PSD-080 have a different format, PSD-020 to PSD-070 involve:

- Eight hours online theoretical learning
- No less than four hours in case-study based workshops

What participants say...

In 2021/22 we have piloted PSD 030 – Power Systems Earthing. The incredibly positive feedback resulted in the development of the full Professional Certificate.

The key themes in the feedback included:

- Finding the online workshop approach (four two-hour workshops over a month) fitted well with busy workloads
- Enjoying the informed but candid engagement with Patrick Coombe (from Mitton ElectroNet)

Prices and registration

Registration links and pricing information for all courses (and other EEA courses) are located on the [Professional Development](#) page on the EEA website.

Note: Prices are reduced for EEA members.



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