



Electricity Engineers'  
Association



**PROFESSIONAL  
DEVELOPMENT**

# Professional Certificate in Power Systems Design

**PROSPECTUS**

**February 2023**



# 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.

These courses are designed to fit around full-time work, and are delivered via a mix of self-directed learning, webinars led by industry experts, 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?

At the successful completion of each course, participants will be able to:

### **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.

### **PSD-020 Substation Design for Electricity Supply**

Describe the functional requirements for substations, explain how design decisions are made, evaluate and present options to improve the safety and performance of an existing substation.

### **PSD-030 Earthing Systems for Electricity Supply**

Describe the purpose and objectives of earthing, explains how design decisions are made, and resolving earthing system design problems.

### **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

To be eligible for the Professional Certificate participants 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. Note - The eight courses can be undertaken individually. Once completed participants will receive a Completion Certificate for the course.



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## How will you learn?

Each of the courses has been designed to take approximately 20 hours, allowing you to credit your participation to your [Engineering NZ CPD](#) hours. The format includes:

- Up to eight hours online theoretical learning
- Four to eight hours in case-study based workshops
- A quiz and scenario based assessment

## What participants say...

*Feedback was gathered from the piloting of PSD 030 – Power Systems Earthing. The key themes in the feedback included:*

- *Finding the online workshop approach 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 are located on the [Professional Development](#) page on the EEA website.



# Professional Certificate in Power Systems Design

## Draft Schedule for 2023

The table below provides an overview of the courses available in 2023. It is provided in draft as there is a requirement for a minimum and maximum number of participants for each associated workshop. Please check the [Professional Development](#) page on the EEA website for updates.

Month	Cohorts		
	1	2	3
3 <sup>rd</sup> April-23	010-Components		
1 <sup>st</sup> May-23	060-HV Plant	030-Earthing	
1 <sup>st</sup> June-23	020-Substation Design		
3 <sup>rd</sup> July-23		010-Components	
1 <sup>st</sup> August-23		060-HV Plant	030-Earthing
1 <sup>st</sup> September-23	040-Protection Systems	020-Substation Design	
2 <sup>nd</sup> October-23	050- Operating Systems		
1 <sup>st</sup> November-23	070-LV Systems		
1 <sup>st</sup> December-23	080-Optimisation (Capstone)	040-Protection Systems	
15 <sup>th</sup> January-24		050- Operating Systems	
1 <sup>st</sup> February-24		070-LV Systems	
1 <sup>st</sup> March-24		080-Optimisation (Capstone)	



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