

# PESTC: Basic Power System Protection (EEP211)

Through this unit, participants will gain a firm understanding of the basics of power system protection.

Power system protection is often an ‘invisible’ part of generating, transmitting and distributing electrical power, but understanding protection philosophy, relay characteristics and setting principles, system design and current transformer specification – is essential.

Protection principles often dictate what is possible in terms of network expansion (planning), what constraints there are in daily operation of the system (control), and under what circumstances plant can be maintained (maintenance).

Whilst prospection is a specialised field, it incorporates complex mathematics, logical intricacy and the practicalities of project management. It requires from its practitioners a knowledge of communications practice, circuit breaker performance, power transformer construction, and current and voltage transformer theory.

 Duration: 2.5 Days

 Certificate of Completion plus assessment results

 Cost: From \$1,620

## Apply Now

Web: [QUT.edu.au/QUTeX](http://QUT.edu.au/QUTeX)

Phone: 07 3138 7733

Email: [qutex@qut.edu.au](mailto:qutex@qut.edu.au)

Blog: [blogs.qut.edu.au/qutex](http://blogs.qut.edu.au/qutex)

## Evolve with QUTeX

This unit uses a discursive and case study approach via intensive face-to-face delivery of core content with associated slides, unit notes and further readings.

You will actively be involved in the discussions that result from readings and from the unit materials. This approach sets the foundation for collaborative discussion and ongoing interaction with peers and university/industry experts and real-world assessments. In this way, the unit has a balance of theory and practical work examples in a shared learning environment.

## Core concepts

At On completion of this unit students should be able to:

- Preserving Explain why protection is needed on a power system and appreciate the fundamental principles of power system protection.
- Apply the techniques commonly employed by protection designers to achieve an acceptable level of protection reliability and security.
- Specify current transformers for specific applications.
- Select and set basic systems of overcurrent relays, differential relays and distance relays.
- Explain the pros and cons of fuses, reclosers and sectionalizers.
- Set a distance relay to protect a feeder and to provide remote backup protection.

## Who should participate?

Engineers working in the Power sector who wish to advance their understanding of current practices used in the electrical aspects of basic power system protection.

To undertake this unit, you should have a good grasp of electrical transmission technology and the level of design computation needed, and a working knowledge of power system engineering. There is no specific pre-requisite module that needs to be completed before undertaking this unit, but completion of EEP205 “Power System Fault Calculations” would aid in providing a greater understanding of basic power system protection.

There are two assignments associated with this unit. All of the analysis steps are introduced progressively through course notes and readings with real examples, to help you complete your assessment.

## Your expert facilitator Shane Kerr

Shane Kerr has 30 years’ experience in the electricity supply industry, starting his career in 1987 with the South East Queensland Electricity Board (SEQEB) as an apprentice electrical fitter and mechanic. Since qualifying, he has held a number of different positions within SEQEB and Energex. Graduating in 2002 with a degree in Electrical Engineering from the Queensland University of Technology, Shane has

## Cost

Early Bird registration	\$1,620 (inc. GST)
Standard registration	\$1,800 (inc. GST)
QUT Alumni registration	\$1,350 (inc. GST)
Group registration (5 or more)	\$1,620 per person (inc. GST)