



New Zealand Certificate in Electrical Engineering Theory (Level 3)

This one year certificate is your entry to gaining an electrical apprenticeship. You will learn all the essential skills to help you become a qualified electrician.

You will learn how to:

- Apply fundamental knowledge and principles of electrical theory and practice, including electrical protection, to the installation and maintenance of electrical systems and equipment.
- Apply fundamental knowledge of fault diagnosis and testing techniques of electrical systems and equipment.
- Apply safe working procedures and practices, and identify and report electrical and other hazards.
- Ensure their own activities are within legal limitations of the electrical legislation.
- Apply fundamental knowledge and principles to the installation and maintenance of electrical machines.
- Apply fundamental knowledge and principles to the installation and maintenance of electrical equipment in special electrical situations.
- Work ethically and professionally within the electrical industry, as an electrical apprentice, including maintaining current competency and communicating with stakeholders on electrical and related matters.

Programme Specific Information

The purpose of this qualification is to provide the electrical industry with people who have introductory knowledge that underpins safe electrical installation, testing, commissioning, and servicing of electrical installations and equipment. The qualification provides pre-entry foundation knowledge of electrical engineering and is suitable for those who wish to enter the industry and who do not yet have an electrical apprenticeship agreement

Career Options: Electrical apprenticeship leading to full registration as electrician or step towards electrical engineering diploma.

Programme Information

Course Code	Course Title	Purpose
CEE3.001	Electrical workplace practice	Apply knowledge of electrical safety and safe working practices for electrical workers; Demonstrate knowledge of legislation and Standards governing electrical worker; Demonstrate knowledge of the electrical industry ethical work practices; Demonstrate and apply knowledge of safe plant isolation, re-commissioning, and associated electrical testing procedures. Units 29465, 26466, 29467, 29468
CEE2.002	Electric current fundamentals	Explain the properties of conductors, insulators, and semiconductors and their effect on electrical circuits; Demonstrate knowledge of electromotive force (e.m.f.) production; Apply electromagnetic theory to a range of problems. Units 25070, 25071, 25072
CEE2.003	Installation fundamentals	Demonstrate knowledge of electrical test instruments and take measurements, isolate and test low-voltage electrical subcircuits; Demonstrate and apply knowledge of procedures for examining and testing electrical installations; Select and install flexible cords and cables; Demonstrate knowledge of electric motor and generator construction and operation; Demonstrate knowledge of electric switchboards and lighting and power circuits. Units 750, 15852, 15866, 29469, 29470, 29471

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CEE3.004	Electrical applications	Demonstrate knowledge of electric lighting systems; Demonstrate knowledge of single-phase and three-phase transformers; Demonstrate and apply knowledge of electrical fittings and components and their installation. Units 29472, 29473, 29474
CEE3.005	Electricity systems	Demonstrate and apply knowledge of electronics; Demonstrate and apply knowledge of capacitance, inductance, power factor, and power factor correction. Units 29475, 29476
CEE4.006	Electricity supply and distribution	Demonstrate knowledge of earthing; Demonstrate knowledge of protection of circuits from static electricity and magnetic interference; Demonstrate and apply knowledge of safeguards for use with portable electrical appliances; Demonstrate knowledge of the New Zealand national electricity grid and associated electrical protection; Demonstrate knowledge of electrical installations in special situations. Units 1204, 5932, 15848, 29477, 29478
CEE3.007	Circuit design and operation	Draw and explain electrical diagrams; Demonstrate knowledge of electric circuit design, control, and protection; Apply knowledge of lighting installation, testing, repair, and disposal. Units 29479, 29480, 29481
CEE3.008	Electrical machines	Demonstrate knowledge of circuit protection; Demonstrate and apply knowledge of special power supplies; Demonstrate and apply knowledge of single-phase and three-phase rotating machines; Demonstrate knowledge of theory and practice for electrical workers; Apply fundamental techniques for identifying and locating faults in electrical fittings or systems. Units 15855, 29482, 29483, 29484, 29557

Programme Fees and Additional Expenses

Programme Fees

Domestic \$6,480.00 (approx) International \$POA

Additional Expenses

Item	Expected Approximate Costs
Stationery, pens, pencils, lined refill	\$20
Calculator preferably FX82AU*11 (Scientific calculator)	\$40
First aid course (Students must hold a current certificate to be awarded this qualification)	\$80

It is also recommended that you have a suitable laptop or tablet to access online course material.