

Electrical Trade
(Electricity Supply Strand)

NZA

NZQA #4204

259 CREDITS

42 MONTHS



NZA

Electrical Trade (Electricity Supply Strand)



This course is designed to provide recognition for having the fundamental knowledge to work as an Electrician in the Electricity Supply Sector.

It includes skills required to work safely on an electricity supply worksite to competently and safely complete tasks.

WHAT YOU'LL LEARN

- Applying knowledge of electrical theory, systems, equipment, machines, and electrical protection in an electrical environment.
- Complying with electrical and relevant non-electrical legislation governing the work of electricians.
- Communicating with stakeholders on electrical matters.
- Installing, commissioning, and maintaining electrical services associated with distribution networks, power stations, and substations.
- Carrying out fault diagnosis and testing of electrical services associated with distribution networks, power stations, and substations
- Carrying out installation and maintenance of electrical equipment.

This programme is based on the requirements set by the Electrical Workers Registration Board (EWRB) for the Electrical Theory and Regulations examination.

HOW THE COURSE IS DELIVERED

Workbooks - On-job assessment through workbooks which are provided electronically through the Connexis Learning Management System (LMS)

Provider Delivery - Off-job delivery including block courses, night classes or distance learning through a provider.

EWRB Exam - Learners must pass the EWRB theory and regulations examinations to be awarded this qualification.

ENTRY REQUIREMENTS

- Must be employed in the electricity supply industry in a full-time apprentice electrician role with exposure to gain the relevant skills covered.
- Must have NCEA Level 2 with Mathematics and English subject, or proof of equivalent knowledge.
- Must hold an EWRB Trainee Limited Certificate when starting, or completed within the first 3 months of this programme.

TRAINING PATHWAYS

Graduates have the opportunity to complete any of our Level 4 energy industry qualifications; allowing them to move into a specialisation.

Contact us now to enrol

CALL US: 0800 486 626

askus@connexis.org.nz

connexis.org.nz



Programme Structure

The structure of this programme features a compulsory on-job introductory module, three compulsory off-job modules, and three compulsory on-job modules for the specialised strand, including one module with elective options.

Introductory On Job – Working Safely in the Electrical Industry

Demonstrate and apply knowledge of working safely in the electrical industry, including the safe use of tools, fittings, and the interpretation of electrical plans in the workplace.

Year 1 Off Job

Demonstrate knowledge of tools, fittings, cords, cables, cable installation, plans, electrical faults, circuit protection, commissioning, and de-commissioning

Demonstrate knowledge of mathematical principles, conductors, insulators, voltage, power and energy, DC circuits, magnetism and AC generation

Demonstrate knowledge of legislation, industry governance bodies and AS/NZS 3000 for the electrical industry

Year 1 Capstone

Demonstrate fundamental knowledge for working in electrical trades

Year 2 Off Job

Demonstrate knowledge of electrical plans, switching circuits, lighting systems, wiring support systems, cable installation, and design switching circuits and a PLC programme

Demonstrate knowledge of the national supply grid, MEN system, earthing, damp situations, SELV and PELV systems, and single-phase transformers

Demonstrate knowledge of circuit protection, distribution board wiring, electrical installation testing, fault finding, and rectification of discovered faults

Demonstrate knowledge of capacitors, inductors, and electronics in the electrical trade, and electric motors and alternators

Year 2 Capstone

Demonstrate immediate knowledge for working in the electrical trades

Year 3 Off Job

Demonstrate knowledge of earthing systems, switchboards, cable selection, underground cable systems, and specialised cables

Demonstrate knowledge of power factor, three-phase AC power, and transformer safety and performance

Demonstrate knowledge of electric motors and motor faults and install electric motors and diagnose and repair faults

Demonstrate knowledge of de-commissioning, commissioning, and verification of electrical installations

Demonstrate knowledge of alternative energy system, and hazardous areas, construction and demolition sites, and special installations

Year 3 Capstones

Demonstrate knowledge of electrical legislation, New Zealand Codes of Practice, and Standards

Demonstrate knowledge of electrical theory for registration of electricians



Electricity Supply Strand – Year 1 On Job

Demonstrate knowledge of earthing in high voltage electricity network installations and works and use and maintain test instruments used in the high voltage electricity supply industry

Read and interpret single line diagrams in the electricity supply industry

Apply health and safety risk assessment to a job role

Apply knowledge of common cords, cables, and electrical fittings

Electricity Supply Strand – Year 2 On Job

Install electrical lines and cables in an electricity supply environment, including the installation, joining, and termination of cables

Demonstrate cable handling and fixing techniques, pre-wire electrical circuits, and join and test TPS cables

Establish new worksites and interpret plans

Install electrical equipment in damp situations and install earthing and lighting

Electricity Supply Strand – Year 3 On Job

Demonstrate knowledge of supervision of trainees undertaking prescribed electrical work

Select and install an electric switchboard in the electricity supply industry

Install a complete electrical installation

De-commission and commission electrical installations

Choose a minimum of **28 credits**, maximum of **41 credits**, from the following Unit Standards

Climb and work on electricity network structures

Operate electrical equipment associated with electric lines or cables up to 66kV

Apply and remove earths from conductors on electricity supply networks

Operate electrical switchgear in the electricity supply industry

Locate faults in power cables

Joint, test and commission specialist communication cable systems

Compile and action switching instructions to maintain electricity supply power network security

Plan for scheduled work on electricity supply network equipment

Rescue a victim from an electrical structure

Demonstrate the requirements for holding access permits for work on electrical lines, cables, and equipment

Carry out a rescue from an electricity supply services pit

Describe and carry out polarity and phasing tests on low voltage electricity networks

Describe and carry out phasing tests on high voltage electricity networks

Demonstrate familiarity with common faults, relay systems, and components of diagrams in power system protection systems

Demonstrate knowledge of fault diagnosis and power restoration on electricity supply network plant and equipment

Carry out routine inspection and service of a power transformer

Carry out routine inspection and service on a high voltage circuit breaker

Install and inspect earthing and bonding system for equipment used in the electricity supply industry

Carry out verification of an electrical installation

