

National Certificate in Electricity Supply (Electrical Services Technician) (Level 4)

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|----------------|------------|
| Level | 4 |
| Credits | 109 |

Purpose

This national certificate is awarded to people who have demonstrated competence in the requirements as an Electrical Services Technician in the Electricity Supply Industry.

It caters for trainees within this industry whose primary role is non-electrical based and who are required to carry out replacement of electrical components as part of their day-to-day work. This may include trainees who are working towards National Certificates in Electricity Supply in the Distribution Lines, Technician, and Mechanical Fitter areas.

More specifically the following skills and knowledge are covered:

Typical electrical component replacement of

- fixed wire, appliances including stoves and heaters
- light fittings
- switches
- residual current devices
- electric motors
- flexible leads.

Holders of this certificate may apply to the Electrical Workers Registration Board for electrical registration as an Electrical Service Technician under the provisions of the Electricity Regulations 1997 and amendments.

Special Notes

Prerequisite: National Certificate in Electricity Supply (Level 2) with optional strands in Electrical, Electrical Fitter, and Line Mechanic [Ref: 1293].

Credit Range

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|-----------------|-----|
| Level 2 credits | 26 |
| Level 3 credits | 42 |
| Level 4 credits | 41 |
| Total | 109 |

Requirements for Award of Qualification

Award of NQF Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided in section 7 of the New Zealand Qualifications Authority (NZQA) Rules and Procedures publications available at <http://www.nzqa.govt.nz/ncea/acrp/index.html>.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- Compulsory standards

Detailed Requirements

Compulsory

The following standards are required

Engineering and Technology > Electrical Engineering > Core Electrical

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 750 | Demonstrate knowledge of electrical test instruments and take measurements | 2 | 2 |
| 1174 | Disconnect and reconnect fixed wired electrical appliances or equipment | 3 | 4 |
| 15848 | Demonstrate knowledge of safeguards for use with portable electrical appliances | 2 | 2 |
| 15849 | Perform manual soldering and de-soldering procedures for electrotechnology work | 2 | 2 |
| 15851 | Demonstrate knowledge of electrical safety and safe working practices for electrical workers | 2 | 3 |
| 15852 | Isolate and test low-voltage electrical subcircuits | 2 | 2 |
| 15856 | Demonstrate knowledge of the New Zealand electricity supply system | 3 | 2 |
| 25070 | Explain the properties of conductors, insulators, and semiconductors and their effect on electrical circuits | 2 | 7 |
| 25071 | Demonstrate knowledge of electromotive force (e.m.f.) production | 2 | 3 |
| 25072 | Demonstrate knowledge of electromagnetism theory | 2 | 5 |

Engineering and Technology > Electrical Engineering > Electrical Appliance Servicing

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 18082 | Replace faulty motors in electrical appliances | 4 | 4 |
| 18086 | Draw and interpret diagrams of electrical appliances | 3 | 4 |
| 18088 | Demonstrate systematic fault finding techniques in electrical appliance servicing | 3 | 3 |

Engineering and Technology > Electrical Engineering > Electrical Installation and Maintenance

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 15855 | Demonstrate knowledge of circuit protection | 3 | 3 |
| 16412 | Fault-find, repair, and re-commission electric lighting | 3 | 4 |
| 20962 | Demonstrate knowledge of a.c. electric motor control and installation | 4 | 8 |

Engineering and Technology > Electrical Engineering > Electrical Service Technicians

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 17798 | Demonstrate knowledge of legislation and standards for electrical service technicians - single phase | 3 | 2 |
| 17800 | Demonstrate knowledge of electrical control devices and simple electrical circuits | 3 | 3 |
| 17802 | Replace fuses and plug-in miniature circuit breakers | 3 | 1 |
| 17803 | Select and connect flexible cords in single phase plug-in and fixed wired applications | 3 | 2 |
| 17804 | Test single phase electrical appliances | 3 | 2 |
| 17806 | Demonstrate knowledge of protection from the harmful effects of electricity | 3 | 2 |
| 17807 | Demonstrate knowledge of legislation and standards for electrical service technicians - three-phase | 4 | 4 |
| 17808 | Isolate electrical appliances from the supply | 3 | 1 |
| 17809 | Demonstrate knowledge of single and three-phase motors for electrical service technicians | 4 | 5 |
| 17810 | Connect single and three-phase electrical appliances and fittings | 3 | 3 |
| 17811 | Test single and three-phase electrical appliances | 3 | 3 |
| 18090 | Demonstrate knowledge of alternating current (a.c.) theory for electrical service technicians | 4 | 5 |
| 18091 | Demonstrate knowledge of three-phase theory for electrical service technicians | 4 | 3 |

Engineering and Technology > Electricity Supply > Electricity Supply - Core Skills

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 19950 | Use test instruments and carry out electrical testing in the electricity supply industry | 3 | 3 |

Engineering and Technology > Electricity Supply > Electricity Supply - Distribution Networks

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 20417 | Replace or repair single phase electrical components | 4 | 6 |
| 20418 | Replace or repair three phase electrical components | 4 | 6 |

Transition Arrangements

Version 2

Version 2 was issued following a revision in order to include new magnetism and electricity standards 25070-25072, which replaced expiring standard 15843 to improve assessability, and standard 20962 that replaced standard 15863, which has now expired.

Changes to structure and content

- Level of the qualification was increased from 3 to 4.
- Total credits were increased from 105 to 109.
- Standard 15843 was replaced by standards 25070-25072.
- Standard 15863 was replaced by standard 20962.

For detailed information see [Review Summaries](#) on the NZQA website.

All existing candidates may either complete version 1 of the qualification or transfer their existing achievements to version 2.

All new trainees will be enrolled in programmes leading to version 2 of the qualification.

This qualification contains standards that replace an earlier standard. For the purposes of this qualification, people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standards – see table below.

| Credit for | Exempt from |
|------------|---------------------|
| 15843 | 25070, 25071, 25072 |
| 15863 | 20962 |

It is not intended that anyone is disadvantaged by this revision and the above arrangements have been designed for a smooth transition. However, anyone who feels they have been disadvantaged may appeal to the Electricity Supply Industry Training Organisation at the address below.

NQF Registration Information

| Process | Version | Date | Last Date for Assessment |
|--------------|---------|--------------|--------------------------|
| Registration | 1 | June 2004 | December 2011 |
| Revision | 2 | January 2009 | N/A |

Standard Setting Body

Electricity Supply Industry Training Organisation
 PO Box 1245
 Waikato Mail Centre
 Hamilton 3240

Telephone 07 834 3038
 Facsimile 07 834 8160
 Email info@esito.org.nz

Planned Review

Any person or organisation may contribute to the review of this qualification by sending feedback to the standard setting body at the above address.

| | |
|-------------|------|
| Next Review | 2009 |
|-------------|------|

Other standard setting bodies whose standards are included in the qualification

Electro Technology Industry Training Organisation

Certification

This certificate will display the logos of NZQA, the Electricity Supply Industry Training Organisation and the accredited organisation.

Classification

This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

| NQF Classification | | NZSCED | |
|--------------------|---|--------|--|
| Code | Description | Code | Description |
| 318 | Engineering and Technology > Electricity Supply | 031313 | Engineering and Related Technologies > Electrical and Electronic Engineering and Technology > Electrical Fitting, Electrical Mechanics |

Quality Management Systems

Providers and Industry Training Organisations must be accredited by a recognised Quality Assurance Body before they can register credits from assessment against standards. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.