



WAIHANGA ARA RAU

**Construction and
Infrastructure**

Workforce Development Council

ELECTRICAL ENGINEERING

EXEMPTIONS AND CREDIT TRANSFER FOR STUDENTS WHO
HAVE PARTIALLY COMPLETED QUALIFICATION 1195

VERSION 2 | APRIL 2024

Approved by	GM Assurance
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Version	Date	Nature of Amendment
1.0	26/08/2022	New document created, based on tables supplied by Skills TITO.
2.0	3/04/2024	Updated based on feedback from Te Pūkenga-EarnLearn and ETCO

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1. INTRODUCTION

Exemptions and credit transfer for students who have partially completed qualification 1195.

The following tables of exemptions and credit transfer will support learners to transition into a programme leading to the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply (Level 4) [Ref: 4204] which uses the new suite of electrical engineering standards published in 2022.

2. EXEMPTIONS

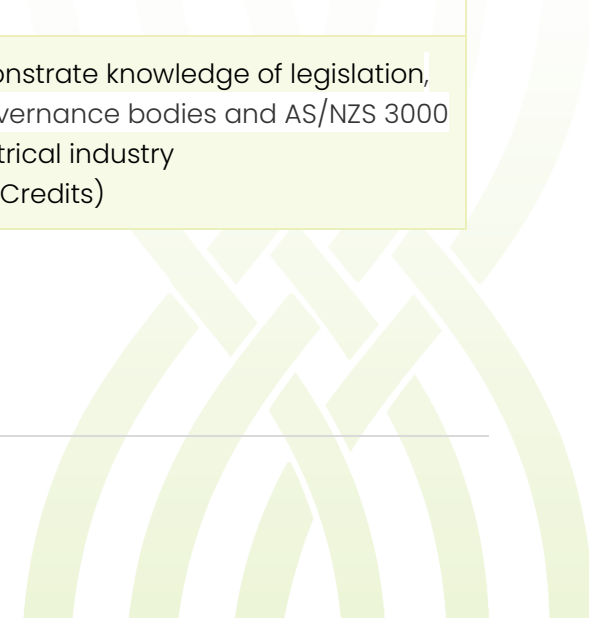
Process:

Exemptions should be specified in a programme that leads toward qualification 4204 when it is submitted to the WDC for programme endorsement and to NZQA for programme approval.

If a provider considers that the exempts stated are no longer valid or there are exemptions that are missing, they should contact moderation@waihangaararau.nz in the first instance to get approval for changes to the exemptions outlined in this document.

CREDIT FOR	EXEMPT FROM
26551 Provide first aid for life threatening conditions (Level 2) (1 Credit)	6402 Provide basic life support (Level 1) (1 Credit)
26552 Demonstrate knowledge of common first aid conditions and how to respond to them (Level 2) (1 Credit)	6401 Provide first aid (Level 2) (1 Credit)
15851 Demonstrate knowledge of electrical safety and safe working practices for electrical workers (Level 2) (3 Credits) And 15852 Isolate and test low-voltage electrical subcircuits (Level 2) (2 Credits)	32605 Demonstrate knowledge for working safely in the electrical industry (Level 3) (6 Credits)
16407 Use and maintain hand and power tools for electrical work (Level 3) (4 Credits) And 15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)	32606 Demonstrate knowledge of tools, fittings, and plans in the electrical industry (Level 3) (5 Credits) And 32608 Demonstrate knowledge of tools, fittings, and plans in the electrical industry (Level 3) (7 Credits)

<p>15843 Demonstrate knowledge of magnetism and electricity (Level 2) (15 Credits)</p>	<p>32609 Demonstrate knowledge of mathematical principles, conductors and insulators (Level 3) (7 Credits)</p> <p>And</p> <p>32610 Demonstrate knowledge of voltage, power and energy, and DC circuits (Level 3) (6 Credits)</p> <p>And</p> <p>32611 Demonstrate knowledge of magnetism and AC generation (Level 3) (6 Credits)</p>
<p>25070 Explain the properties of conductors, insulators, and semiconductors and their effect on electrical circuits (Level 2) (7 Credits)</p>	<p>32609 Demonstrate knowledge of mathematical principles, conductors and insulators (Level 3) (7 Credits)</p>
<p>25070 Explain the properties of conductors, insulators, and semiconductors and their effect on electrical circuits (Level 2) (7 Credits)</p> <p>And</p> <p>25071 Demonstrate knowledge of electromotive force (e.m.f.) production (Level 2) (3 Credits)</p>	<p>32610 Demonstrate knowledge of voltage, power and energy, and DC circuits (Level 3) (6 Credits)</p>
<p>25071 Demonstrate knowledge of electromotive force (e.m.f.) production (Level 2) (3 Credits)</p> <p>And</p> <p>25072 Demonstrate knowledge of electromagnetism theory (Level 2) (5 Credits)</p>	<p>32611 Demonstrate knowledge of magnetism and AC generation (Level 3) (6 Credits)</p>
<p>15860 Demonstrate knowledge of legislation and standards governing the work of electricians (Level 3) (2 Credits)</p>	<p>32612 Demonstrate knowledge of legislation, industry governance bodies and AS/NZS 3000 for the electrical industry (Level 3) (4 Credits)</p>



<p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p>	<p>32613 Demonstrate knowledge of cords, cables, and cable installation (Level 3) (4 Credits)</p> <p>And</p> <p>32647 Install mains and submains cables (Level 4) (5 Credits)</p>
<p>15844 Select and install flexible cords (Level 2) (3 Credits)</p> <p>And</p> <p>16409 Fit-off an electrical installation (Level 3) (5 Credits)</p>	<p>32616 Apply knowledge of common cords, cables, and electrical fittings (Level 4) (6 Credits)</p>
<p>15870 Inspect and test an electrical installation for compliance with AS/NZS 3000:2000 (Level 4) (3 Credits)</p> <p>And</p> <p>16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits)</p>	<p>32617 Select and use instruments for testing, fault finding, and repairing basic appliances (Level 4) (4 Credits)</p>
<p>15866 Demonstrate procedures for examination and testing of electrical installations (Level 4) (2 Credits)</p> <p>And</p> <p>16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits)</p>	<p>32617 Select and use instruments for testing, fault finding, and repairing basic appliances (Level 4) (4 Credits)</p>
<p>750 Demonstrate knowledge of electrical test instruments and take measurements (Level 2) (2 Credits)</p> <p>And</p> <p>16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits)</p>	<p>32617 Select and use instruments for testing, fault finding, and repairing basic appliances (Level 4) (4 Credits)</p>
<p>1174 Disconnect and reconnect fixed wired electrical appliances or equipment (Level 3) (4 Credits)</p> <p>And</p>	<p>32618 De-commission, test, and commission, basic electrical appliances, fittings, and equipment (Level 4) (4 Credits)</p>

15870 Inspect and test an electrical installation for compliance with AS/NZS 3000:2000 (Level 4) (3 Credits)	
15845 Draw and explain simple electrical diagrams (Level 2) (4 Credits) And 15854 Draw and interpret electrical diagrams (Level 3) (3 Credits) And 1710 Demonstrate knowledge of electric lighting (Level 4) (3 Credits)	32620 Demonstrate knowledge of electrical plans, switching circuits, and lighting systems (Level 3) (5 Credits)
2020 Plan and install cable support systems (Level 3) (4 Credits) And 15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)	32621 Demonstrate knowledge of wiring support systems and cable installation (Level 3) (5 Credits)
15866 Demonstrate procedures for examination and testing of electrical installations (Level 4) (2 Credits) And 16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits) And 16412 Fault-find, repair, and re-commission electric lighting (Level 3) (4 Credits)	32624 Demonstrate knowledge of electrical installation testing, fault finding, and rectification of discovered faults (Level 4) (6 Credits)
20961 Demonstrate knowledge of special electrical installations (Level 4) (4 Credits) And 15858 Demonstrate knowledge of a.c. motors (Level 4) (7 Credits)	32625 Demonstrate knowledge of damp situations, SELV and PELV systems, and single-phase transformers (Level 3) (5 Credits)
15850 Demonstrate knowledge of single-phase transformers (Level 3) (3 Credits) And	32626 Demonstrate knowledge of capacitors, inductors, and electronics in the electrical trade (Level 3) (5 Credits)

<p>15846 Demonstrate knowledge of capacitors and semiconductor diodes (Level 2) (3 Credits)</p>	
<p>15850 Demonstrate knowledge of single-phase transformers (Level 3) (3 Credits)</p> <p>And</p> <p>15864 Demonstrate knowledge of semiconductor power devices (Level 4) (4 Credits)</p>	<p>32626 Demonstrate knowledge of capacitors, inductors, and electronics in the electrical trade (Level 3) (5 Credits)</p>
<p>25072 Demonstrate knowledge of electromagnetism theory (Level 2) (5 Credits)</p> <p>And</p> <p>15858 Demonstrate knowledge of a.c. motors (Level 4) (7 Credits)</p>	<p>32629 Demonstrate knowledge of electric motors and alternators (Level 4) (5 Credits)</p>
<p>15851 Demonstrate knowledge of electrical safety and safe working practices for electrical workers (Level 2) (3 Credits)</p> <p>15854 Draw and interpret electrical diagrams (Level 3) (3 Credits)</p>	<p>32630 Establish new worksites and interpret plans (Level 4) (4 Credits)</p>
<p>2020 Plan and install cable support systems (Level 3) (4 Credits)</p> <p>And</p> <p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p>	<p>32631 Install, join, and terminate cables (Level 4) (7 Credits)</p>
<p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p> <p>And</p> <p>5926 Demonstrate knowledge of programmable logic controllers (PLCs) (Level 4) (5 Credits)</p>	<p>32632 Design switching circuits and a PLC programme. (Level 4) (4 Credits)</p>
<p>15867, Install, wire, and test lights in existing installations (Level 3) (5 Credits)</p> <p>And</p> <p>5926 Demonstrate knowledge of programmable logic controllers (PLCs) (Level 4) (5 Credits)</p>	<p>32632 Design switching circuits and a PLC programme. (Level 4) (4 Credits)</p>

<p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p> <p>And</p> <p>2016 Install earthing systems for multiple earthed neutral installations (Level 3) (3 Credits)</p> <p>And</p> <p>15869 Install electrical equipment in damp situations (Level 4) (3 Credits)</p>	<p>32633 Install electrical equipment in damp situations and install earthing and lighting. (Level 4) (9 Credits)</p>
<p>15867 Install, wire, and test lights in existing installations (Level 3) (5 Credits)</p> <p>And</p> <p>2016 Install earthing systems for multiple earthed neutral installations (Level 3) (3 Credits)</p> <p>And</p> <p>15869 Install electrical equipment in damp situations (Level 4) (3 Credits)</p>	<p>32633 Install electrical equipment in damp situations and install earthing and lighting. (Level 4) (9 Credits)</p>
<p>5931 Select and install electric switchboards (Level 3) (4 Credits)</p> <p>And</p> <p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p>	<p>32634 Plan circuit protection and install and test distribution boards. (Level 4) (10 Credits)</p>
<p>15870 Inspect and test an electrical installation for compliance with AS/NZS 3000:2000 (Level 4) (3 Credits)</p> <p>And</p> <p>16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits)</p> <p>And</p> <p>16412 Fault-find, repair, and re-commission electric lighting (Level 3) (4 Credits)</p>	<p>32635 Use fault-finding and fault rectification techniques on electrical installations (Level 4) (4 Credits)</p>
<p>16410, Plan, install, test, and commission small electrical installations (Level 4) (5 Credits)</p> <p>And</p>	<p>32635 Use fault-finding and fault rectification techniques on electrical installations (Level 4) (4 Credits)</p>

<p>16411 Fault-find, repair, and re-commission fixed-wired electrical appliances (Level 3) (4 Credits)</p> <p>And</p> <p>16412 Fault-find, repair, and re-commission electric lighting (Level 3) (4 Credits)</p>	
<p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>1205 Demonstrate knowledge of electrical switchboards (Level 3) (3 Credits)</p> <p>And</p> <p>1204 Demonstrate knowledge of earthing (Level 3) (Level 2)</p>	<p>32638 Demonstrate knowledge of earthing systems and switchboards. (Level 4) (6 Credits)</p>
<p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>1205 Demonstrate knowledge of electrical switchboards (Level 3) (3 Credits)</p> <p>And</p> <p>15856 Demonstrate knowledge of the New Zealand electricity supply system (Level 3) (2 Credits)</p>	<p>32638 Demonstrate knowledge of earthing systems and switchboards. (Level 4) (6 Credits)</p>
<p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>5931 Select and install electric switchboards (Level 3) (4 Credits)</p> <p>And</p> <p>1204 Demonstrate knowledge of earthing (Level 3) (Level 2)</p>	<p>32638 Demonstrate knowledge of earthing systems and switchboards. (Level 4) (6 Credits)</p>
<p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>5931 Select and install electric switchboards (Level 3) (4 Credits)</p>	<p>32638 Demonstrate knowledge of earthing systems and switchboards. (Level 4) (6 Credits)</p>

<p>And</p> <p>15856 Demonstrate knowledge of the New Zealand electricity supply system (Level 3) (2 Credits)</p>	
<p>1206 Demonstrate knowledge of a.c. power and power factor (Level 4) (4 Credits)</p> <p>And</p> <p>15857 Demonstrate knowledge of three-phase transformers (Level 4) (3 Credits)</p>	<p>32640 Demonstrate knowledge of power factor, three-phase AC power, and transformer safety and performance (Level 4) (6 Credits)</p>
<p>20962 Demonstrate knowledge of a.c. electric motor control and installation (Level 4) (8 Credits)</p> <p>And</p> <p>16413 Fault-find, repair, and test electric motors (Level 4) (8 Credits)</p>	<p>32641 Demonstrate knowledge of electric motors and motor faults (Level 4) (3 Credits)</p>
<p>16410, Plan, install, test, and commission small electrical installations (Level 4) (5 Credits)</p>	<p>32647 Install mains and submains cables (Level 4) (5 Credits),</p>
<p>5931 Select and install electric switchboards (Level 3) (4 Credits)</p>	<p>32648 Install a main switchboard (Level 4) (5 Credits)</p>
<p>16414 Carry out planned electrical maintenance work of electrical equipment (Level 4) (6 Credits)</p>	<p>32653 Maintain electrical installations (Level 4) (5 Credits)</p>



3. CREDIT TRANSFER

Waihangara Ara Rau WDC Pre-approved Credit Transfer

This allows prior award of a unit standard to be a valid assessment tool to achieve additional unit standards identified in this programme. This is quality assured by Waihangara Ara Rau WDC.

Process:

Providers must confirm the Apprentice entering the programme has the unit standard(s) listed in the left-hand column on their NZQA Record of Learning and does not have the ones on the right.

Upon confirmation, the listed unit standards in the right-hand column of the same row should be awarded by the provider.

Credit for	Can be awarded
21766 Demonstrate knowledge of theory for registration of electricians (Level 4) (3 Credits)	29484 Demonstrate intermediate knowledge for working in electrical trades (Level 3) (1 Credit) And 32619 Demonstrate fundamental knowledge for working in electrical trades (Level 3) (1 Credit)
29484 Demonstrate intermediate knowledge for working in electrical trades (Level 3) (1 Credit)	32619 Demonstrate fundamental knowledge for working in electrical trades (Level 3) (1 Credit)
1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)	32612 Demonstrate knowledge of legislation, industry governance bodies and AS/NZS 3000 for the electrical industry (Level 3) (4 Credits), And 32644 Demonstrate knowledge of hazardous areas, construction and demolition sites, and special installations (Level 4) (5 Credits)

<p>1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)</p> <p>And</p> <p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p>	<p>32639 Demonstrate knowledge of cable selection, underground cable systems, and specialised cables (Level 4) (4 Credits)</p>
<p>1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)</p> <p>And</p> <p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>1174 Disconnect and reconnect fixed wired electrical appliances or equipment (Level 3) (4 Credits)</p>	<p>32614 Demonstrate knowledge of electrical installation testing, fault finding, and rectification of discovered faults (Level 4) (6 Credits)</p>
<p>1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)</p> <p>And</p> <p>15855 Demonstrate knowledge of circuit protection (Level 3) (3 Credits)</p> <p>And</p> <p>1205, Demonstrate knowledge of electrical switchboards (Level 3) (3 Credits)</p>	<p>32638 Demonstrate knowledge of earthing systems and switchboards (Level 4) (6 Credits)</p>
<p>1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)</p>	<p>32639 Demonstrate knowledge of cable selection, underground cable systems, and specialised cables (Level 4) (4 Credits)</p>

<p>And</p> <p>15859 Demonstrate knowledge of electrical cables and accessories (Level 3) (7 Credits)</p>	
<p>1702 Demonstrate knowledge of, and apply electrical legislation, codes of practice, and standards (Level 4) (8 Credits)</p> <p>And</p> <p>20961 Demonstrate knowledge of special electrical installations (Level 4) (4 Credits)</p>	<p>32644 Demonstrate knowledge of hazardous areas, construction and demolition sites, and special installations (Level 4) (5 Credits)</p>

