

Title	Demonstrate knowledge of electrical plans, switching circuits, and lighting systems		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to: <ul style="list-style-type: none"> – describe and interpret diagrams and plans for electrical work; – demonstrate knowledge of switching circuits; and – demonstrate knowledge of lighting systems.
----------------	---

Classification	Electrical Engineering > Core Electrical
-----------------------	--

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Unit standard or equivalent prior knowledge and skills recommended:
Unit 32606, *Demonstrate knowledge of tools, fittings, and plans in the electrical industry*.
- 2 References
AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*;
New Zealand Building Code;
or any current subsequent amendments and replacements.
- 3 Definition
Low voltage switching circuits – may include extra low voltage portions that control a low voltage switching device.
- 4 This unit standard can be used together with other relevant unit standards, additional learning and workplace training to meet the requirements of the Electrical Workers Registration Board (EWRB) core competencies, available at <https://www.ewrb.govt.nz>.
- 5 This unit standard applies to installations and equipment rated above extra-low voltage unless specifically stated.

Outcomes and performance criteria

Outcome 1

Describe and interpret diagrams and plans for electrical work.

Performance criteria

1.1 Describe the purpose and drawing conventions of electrical diagrams.

Range two diagrams;
may include but is not limited to – schematic diagram, block diagram, wiring diagram, location diagram, single line diagram.

1.2 Identify the appropriate details for preparing electrical work from a building detail plan and a plan schedule.

Range may include but is not limited to – floor plan, elevation, site plan.

Outcome 2

Demonstrate knowledge of switching circuits.

Performance criteria

2.1 Explain the design and function of low voltage switching circuits.

Range three circuits;
circuits may include but are not limited to – three or more-way lighting control switching circuit, start-stop control, safety interlocking circuit, water heating control, basic building services or industrial control or similar.

2.2 Explain the design and function of an entry level control program for switching and controlling loads.

Range may include but is not limited to – programmable logic controller, programmable relay, programmable control system.

Outcome 3

Demonstrate knowledge of lighting systems.

Performance criteria

3.1 Describe the operation and typical applications of luminaire types.

Range two luminaire types;
may include but is not limited to – discharge luminaires, fluorescent luminaires, filament luminaires, LED luminaires, any associated control equipment where required.

3.2 Describe the basic planning process for a simple lighting layout.

Range must include but is not limited to – ascertaining light fitting spread angle, the shape and use of the area, basic layout of light fittings.

3.3 Identify requirements for installation of lighting systems from AS/NZS 3000.

Range three requirements.

Planned review date	31 December 2026
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0003
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangā Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.