Title	**Demonstrate and apply knowledge of CAD tools as used in an electrotechnology engineering environment**		
Level	**4**	**Credits**	**5**

Purpose	This unit standard covers knowledge and application of CAD tools to provide solutions in the electrotechnology engineering industry. People credited with this unit standard are able to demonstrate and apply knowledge of CAD tools as used in an electrotechnology engineering environment.

Classification	Electrical Engineering > Electrotechnology

Available grade	Achieved

Guidance Information

1 This unit standard is intended for use in engineering courses at diploma level with assessment primarily against laboratory assignments.

2 Reference
AS/NZS 1100:501:2002, *Technical drawing – Structural engineering drawing; Health and Safety in Employment Act 1992*;
and all subsequent amendments and replacements.

3 Definitions
CAD – computer aided design.
Industry practice – practice used and recommended by organisations involved in the electrotechnology industry.

4 All measurements are to be expressed in Système International (SI) units, and, where required, converted from Imperial units into SI units.

5 All activities must comply with: any policies, procedures, and requirements of the organisations involved; the standards of relevant professional bodies; and any relevant legislative and/or regulatory requirements.

6 Range
- a performance in relation to the outcomes of this unit standard must comply with the Health and Safety in Employment Act 1992;
- b laboratory and workshop safety practices are to be observed at all times.

Outcomes and performance criteria

Outcome 1

Demonstrate and apply knowledge of CAD tools as used in an electrotechnology engineering environment.

Range may include but is not limited to – sheet set-up, units, scales, coordinate systems, grid and snap, drawing objects, copying and moving objects, attach/object-snap, layers, line type, line colour, precise and accurate location of points, modifying tools, changing the view, symbol libraries, dimensioning, drawing in isometric planes, file handing, paper output.
Evidence of fourteen required.

Performance criteria

1.1 Drawings are produced to AS/NZS 1100 and industry practice.

Range may include but is not limited to –
power system diagram;
circuit diagram examples include block diagrams, motor starter type control diagrams, electronic schematic diagrams using New Zealand standard symbols;
pictorial drawings of simple electrical and electronic objects (using isometric drawings), scale not required;
oblique cavalier drawings;
orthographic projections of simple electrical and electronic objects;
lighting and power layout diagram to New Zealand standards;
printed circuit board layout;
mechanical drawing.
Evidence of three CAD drawings is required.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 April 2000	31 December 2013
Review	2	18 December 2006	31 December 2024
Rollover and Revision	3	15 March 2012	31 December 2024
Revision	4	15 January 2014	31 December 2024
Review	5	2 March 2023	31 December 2024

Consent and Moderation Requirements (CMR) reference	0003

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