

Title	Demonstrate advanced knowledge of electronic manufacturing process engineering		
Level	6	Credits	15

Purpose	<p>This unit standard covers the operation of electronics manufacturing focusing primarily on plants in the candidate's region.</p> <p>People credited with this unit standard are able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> –current electronics manufacturing production methods; –electronics manufacturing production design requirements; –the need for quality monitoring in the electronics manufacturing industry; and –electronic product packaging requirements.
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Classification	Electronic Engineering > Electronic Manufacturing
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Available grade	Achieved
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Guidance Information

- 1 This unit standard is intended for use in engineering courses at diploma level.
- 2 This unit standard is one of two that cover knowledge of electronic manufacturing process engineering, the other being Unit 22732, *Apply intermediate knowledge of electronic manufacturing*, which this unit standard builds on. It is recommended that competency in unit standard 22732 be achieved before assessment against this unit standard is attempted, or equivalent knowledge and skills demonstrated.
- 3 Manufacturing plants in the candidate's local region should be used for site visits.
- 4 Reference
Health and Safety in Employment Act 1992.
and all subsequent amendments and replacements.
- 5 Definitions
Advanced knowledge – means employing specialised knowledge, with depth in more than one area of the subject matter, to analyse, reformat, and evaluate a wide range of information.
Industry practice – practice used and recommended by organisations involved in the electrotechnology industry.
PCB – printed circuit board.

- 6 All measurements are to be expressed in Système International (SI) units, and, where required, converted from Imperial units into SI units.
- 7 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.
- 8 **Range**
Performance in relation to the outcomes of this unit standard must comply with the Health and Safety in Employment Act 1992.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of current electronics manufacturing production methods.

Performance criteria

- 1.1 Current electronics manufacturing production methods are described with examples from local manufacturing establishments.

Range component selection, custom part problems, part replacement feasibility, PCB types and layout, component handling, insertion, soldering.

Outcome 2

Demonstrate knowledge of electronics manufacturing production design requirements.

Performance criteria

- 2.1 Electronic manufacturing production design requirements are described for given industrial or consumer electronic products in accordance with industry practice.

Range production work flow, production optimisation, production improvement processes.

Outcome 3

Demonstrate knowledge of the need for quality monitoring in the electronics manufacturing industry.

Performance criteria

- 3.1 The need for quality specifications and the need to adhere to quality specifications in an electronics manufacturing environment are explained in the context of electronic product reliability.

Range product life cycle.

- 3.2 Quality systems and production monitoring systems as implemented in a given electronic manufacturing facility are described.

Range may include but is not limited to – testing processes, recording, process monitoring.

Outcome 4

Demonstrate knowledge of electronic product packaging requirements.

Performance criteria

- 4.1 The selection of packing materials and packing processes are described for given industrial or consumer electronic products in accordance with industry practice.

Range packaging requirements include – packaging types, presentation, protection, electrostatic protection, fastening security, labelling, storage, transportation conditions.

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	18 December 2006	31 December 2021
Review	2	26 July 2018	31 December 2021

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.