

National Certificate in Electronic Manufacturing (Level 3)

Level 3

Credits 60

Purpose

The National Certificate in Electronic Manufacturing (Level 3) [Ref: 0434] provides recognition of employment skills for a representative range of assembly roles in the production environment of the electronic manufacturing industry.

The emphasis is on practical skills which are gained primarily from relevant on-job experience.

The qualification comprises compulsory and elective components. The compulsory component covers common core knowledge and skills of basic safety, electrostatic precautions, component recognition, and hand soldering. The elective components allow selection of standards to suit different production environments and job roles.

Holders of this qualification are expected to deliver work that meets industry quality standards with little technical supervision.

This qualification may lead to the National Certificate in Electronic Manufacturing (Level 4) with strands in Manufacturing Technology, and Manufacturing Leadership [Ref: 0435], with which this qualification shares many standards in common.

Credit Range

	Compulsory	Electives
Level 2 credits	12	0-8
Level 3 credits or above	10	30-38
Minimum totals	22	38

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

- A minimum of 60 credits at Level 2 or above
 - Of which a minimum of 40 credits at Level 3 or above
- Compulsory standards
- Elective 1 – A minimum of 30 credits as specified
- Elective 2 – Balance

Detailed Requirements

Compulsory

The following standards are required

Engineering and Technology > Electronic Engineering > Electronic Manufacturing

ID	Title	Level	Credit
12579	Perform hand soldering in electronic manufacturing	3	10
20402	Identify and follow safety practices and procedures in an electronic manufacturing environment	2	5
20403	Identify electronic components	2	5
20405	Describe and use electrostatic discharge control procedures in electronic manufacturing	2	2

Elective 1

A minimum of 30 credits

Engineering and Technology > Electronic Engineering > Electronic Manufacturing

ID	Title	Level	Credit
12573	Deal with hazardous materials in an electronic manufacturing environment	3	10
12574	Pack electronic products	2	10
12575	Assemble through-hole printed circuit boards manually	3	10
12576	Assemble surface mount printed circuit boards manually	3	15
12577	Assemble electronic products	3	15
12578	Assemble electronic components	3	15
12580	Operate printed circuit board flow soldering equipment	3	10
12581	Operate automatic assembly equipment for printed circuit boards	3	35
12582	Control printed circuit board fabrication operations	3	30
12583	Control printed circuit board manufacturing processes	3	30
12584	Control printed circuit board screenprinting processes	3	30

ID	Title	Level	Credit
12585	Prepare screenprinting stencils for printed circuit board processes	3	20
12586	Apply protective coatings to electronic products	3	10
12587	Inspect electronic products visually	3	10
12588	Conduct go/no-go testing of electronic products in electronic manufacturing	3	10
20400	Rework surface mount printed circuit boards	3	10
20401	Rework through-hole printed circuit boards	3	10
20404	Assemble electronic equipment racks or cabinets	3	20
20524	Assemble through-hole printed circuit boards using semi-automatic assembly equipment	3	10

Elective 2

The balance of credits to achieve

A minimum of 60 credits at Level 2 or above

- Of which a minimum of 40 credits at Level 3 or above

May come from the following

Field	Subfield	Domain
Business	Business Environment	Business Culture and Environment
	Business Operations and Development	Quality Management
		Systems and Resources Management
	Financial Management	Financial Skills
Computing and Information Technology	Computing	Generic Computing
Engineering and Technology	Electrical Engineering	Core Electrical
	Electronic Engineering	Electrotechnology
		Any

Transition Arrangements

Version 5

Version 5 was issued following revision to maintain currency until a thorough review can take place.

Changes to structure and content

- The lapsing First Line Management domain was replaced by the Business Culture and Environment, Systems and Resources Management, and Financial Skills domains in Elective 2.
- The Quality Management domain from the lapsing Management subfield was replaced by the Quality Management domain from the Business Operations and Development subfield in Core Elective 2.

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

All existing candidates for versions 3 and 4 of the qualification may either complete its requirements or transfer their existing achievements to this version.

This qualification contains classifications that replace or are used as substitutes for earlier classifications. People who have gained credit for standards in the expiring classifications may use those credits to meet the requirements of the qualification.

Standards from	Are treated as Standards from
Business > Management > First Line Management	Business > Business Environment > Business Culture and Environment
Business > Management > First Line Management	Business > Business Operations and Development > Systems and Resources Management
Business > Management > First Line Management	Business > Financial Management > Financial Skills
Business > Management > Quality Management	Business > Business Operations and Development > Quality Management

It is not intended that anyone be disadvantaged by this revision. However, anyone who feels they have been disadvantaged may appeal to the ElectroTechnology Industry Training Organisation at the address below.

Previous versions of the qualification

Version 4 was issued to correct the NQF classification associated with the qualification. It had inadvertently been classified in the expired Electronic Manufacturing domain in the lapsing Electronics Technology subfield, rather than the domain in the Electronic Engineering subfield.

Version 3 was issued following the review of the Electronic Manufacturing standards. The purpose of the review was to incorporate feedback from assessment and develop additional standards seen as important in the industry.

NQF Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	February 1998	December 2005
Revision	2	October 1999	December 2005
Review	3	March 2004	N/A
Revision	4	February 2007	N/A
Revision	5	April 2010	N/A

Standard Setting Body

ElectroTechnology Industry Training Organisation
 PO Box 24469
 Royal Oak
 Auckland 1345

Telephone 09 525 2590
 Email reviewcomments@etito.co.nz
 Website www.etito.co.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	2013
-------------	------

Certification

This certificate will display the logos of NZQA, the ElectroTechnology 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
1891	Engineering and Technology > Electronic Engineering > Electronic Manufacturing	031303	Engineering and Related Technologies > Electrical and Electronic Engineering and Technology > Electronic Engineering

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.