# FIELD ENGINEERING AND TECHNOLOGY

## Review of Electrical Engineering unit standards

This review report was first published in June 2006 and republished in May 2007, following a request from the ElectroTechnology Industry Training Organisation, to correct the Summary of Changes Table to show the change to the credit value for unit standard 1192 and to identify the qualifications affected by that change.

Subfield	Domain	ld
Electrical Engineering	Electrical Appliance Servicing	1173, 1189, 1192, 16411, 18082-18089, 20591
	Electrical Service Technicians	17798-17811, 18090, 18091

The ElectroTechnology Industry Training Organisation (ETITO) has completed the review of the unit standards listed above that were registered in November 2000 and January 2001.

Date new version of report published	May 2007

June 2006

December 2011

Date new versions published

### Planned review date

### Summary of review and consultation process

This review was conducted by ETITO in conjunction with the Appliance Service Advisory Group and the Electronic Communication Group to ensure that the unit standards were fit for purpose.

Feedback from training providers, workplace assessment, and moderation was incorporated, as were changes relating to industry terminology, standards, systems, and documentation.

The consultation groups considered the following:

- The currency of the unit standards and their suitability for existing and proposed qualifications.
- The appropriateness of unit standards to their domain.
- The accuracy and appropriateness of their content.
- Levels and credits commensurate with performance outcomes and training needs.
- Any gaps in skills and/or knowledge that could be captured by the development of new unit standards.

# Main changes resulting from the review

- Corrections of minor errors and amendments to elements and performance criteria to improve clarity and assessability
- Unit standards 1173, 1189, 1192, 16411, 17798-17804, 17806-17808, 17809, 17811, 18086-18088, 18090, and 20591 were updated
- The titles of unit standards 17799, 17805, 18082, 18084, 18085, 18089, and 18091, were changed and their content was updated

- New unit standards 22763 and 22764 replaced unit standard 18083
- New unit standards 22765-22767 were developed to cover gaps in skill and knowledge requirements identified by the review.

# Unit standard categorised as category C expires at the end of December 2008.

#### Impact on existing provider accreditations

None.

# Impact on Accreditation and Moderation Action Plan (AMAP)

None.

### Impact on existing qualifications

Qualifications that contain the reviewed standards or classifications are tabled below.

Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set		
	The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard		
Not materially affected	The qualification lists a standard that has a new title		
	The qualification lists a standard that has a new classification		

In the following tables qualifications that contain unit standards and classifications in both categories are identified in the *Affected* table, with the items that generated the *Affected* status in **bold**.

The following ETITO qualifications are affected by the outcome of this review.

Qualification Title	Standards in the qualification
National Certificate in Electrical Appliance Servicing [Ref: 0827]	17799, 17805, 18082, <b>18083</b> ,
	18084, 18085, 18089, 18091
National Certificate in Electrical Engineering (Electrician for	1192
Registration) (Level 4) [Ref: 1195]	
National Certificate in Electrical Engineering (Level 3) [Ref: 0228]	1192
National Certificate in Electronic Security (Installer) (Level 3)	17805
[Ref: 1102]	

The following qualifications are not materially affected by the changes. The standard setting body (SSB) has been advised that they require revision.

	Standards in the qualification	SSB Name
National Certificate in Electricity Supply (Electrical) (Level 3) [Ref: 0888]	1192	Electricity Supply Industry Training
National Certificate in Electricity Supply (Electrical Services Technician) (Level 3) [Ref: 1098]	18082, 18091	Organisation
National Certificate in Electricity Supply (Technician) (Level 3) (Technician) (Level 3) with strands in Control and Instrumentation, Power Technician, and HVDC Technician [Ref: 0922]	1192	

Qualification Title	Standards in the qualification	SSB Name
, , , , , , , , , , , , , , , , , , , ,	17799, 17805, 18091	
National Certificate in Electricity Supply (Mechanical Fitter) (Level 4) with strands in Hydro, Networks, and Thermal; and an optional strand in Electrical Services [Ref: 0918]	17799, 17805, 18091	

# Transition

Transition for ETITO qualifications is:

Candidates with unit standard 18083 will be exempt from the requirements for unit standards 22763 and 22764.

### Summary of main changes to standards' lds, classification, titles, levels, and credits

The following summary shows the changes made to the standards because of the review. All changes are in **bold**.

Key	v to review category
Α	Dates changed, but no other changes are made - the replacement standard carries the same Id and a new version
	number

**B** Changes made, but the overall outcome remains the same - the replacement standard carries the same Id and a new version number

- Major changes that necessitate the registration of a replacement standard with a new Id Standard will expire and not be replaced С
- D

#### Electrical Engineering Subfield

		•	•
Domain	Electrical	Appliance	Servicing

ld	Title	Level	Credit	Review
				Category
1173	Install and commission electrical appliances	4	5	В
1189	Service microwave ovens	4	3	В
1192	Fault-find, repair, and test portable electrical tools	3	4	В
	and appliances		2	
16411	Fault-find, repair, and re-commission fixed-wired	3	4	В
	electrical appliances			
18082	Replace and test motors in electrical appliances	4	4	В
	Replace faulty motors in electrical appliances			
18083	Service electrical appliances	4	30	С
22763	Service electrical or electronic goods to gain	4	10	
	electrical service technician's registration			
22764	Service electrical appliances	4	25	
18084	Demonstrate knowledge of refrigeration principles	4	6	В
	and application to domestic electrical appliances			
	Demonstrate knowledge of refrigeration			
	principles applicable to domestic appliances			

ld	Title	Level	Credit	Review Category
18085	Demonstrate knowledge of the principles of domestic electrical appliances Demonstrate knowledge of the operating principles and installation requirements of domestic electrical appliances	4	7	В
18086	Draw and interpret diagrams of electrical appliances	3	4	В
18087	Exhibit customer service skills in electrical appliance servicing	3	3	В
18088	Demonstrate systematic fault finding techniques in electrical appliance servicing	3	3	В
18089	Demonstrate knowledge of domestic gas appliances, for electrical appliance servicing technicians Demonstrate knowledge of domestic gas appliances for electrical appliance service technicians	4	4	В
20591	Braze refrigerator pipe work in electrical appliance servicing	3	2 3	В
22765	Demonstrate knowledge of microwave ovens for electrical appliance service technicians	4	4	New
22766	Demonstrate knowledge of the operating principles of portable electrical appliances and power tools	4	7	New
22767	Demonstrate knowledge of operating principles and installation requirements of commercial electrical appliances	4	7	New

# Domain Electrical Service Technicians

ld	Title	Level	Credit	Review Category
17798	Demonstrate knowledge of legislation and standards for electrical service technicians - single phase	3	2	В
17799	Demonstrate knowledge of electrical safety testing for electrical service technicians - single phase Demonstrate knowledge of testing for electrical safety for electrical service technicians - single phase	2	2	В
17800	Demonstrate knowledge of electrical control devices and simple electrical circuits	3	3	В
17801	Demonstrate knowledge of single phase motors for electrical service technicians	4	3	В
17802	Replace fuses and plug-in miniature circuit breakers	3	1	В
17803	Select and connect flexible cords in single phase plug-in and fixed wired applications	3	2	В
17804	Test single phase electrical appliances	3	2	В

ld	Title	Level	Credit	Review Category
17805	Disconnect and reconnect fixed wired single phase appliances Disconnect and reconnect fixed wired single	3	3	В
	phase electrical appliances			
17806	Demonstrate knowledge of protection from the harmful effects of electricity	3	2	В
17807	Demonstrate knowledge of legislation and standards for electrical service technicians - three- phase	4	4	В
17808	Isolate electrical appliances from the supply	3	1	В
17809	Demonstrate knowledge of single and three-phase motors for electrical service technicians	4	5	В
17810	Connect single and three-phase electrical appliances and fittings	3	3	В
17811	Test single and three-phase electrical appliances	3	3	В
18090	Demonstrate knowledge of alternating current (a.c.) theory for electrical service technicians	4	5	В
18091	Demonstrate knowledge of three phase theory for electrical service technicians	4	3	В
	Demonstrate knowledge of three-phase theory for electrical service technicians			