FIELD ENGINEERING AND TECHNOLOGY

Review of *Electrical Engineering* and *Electronics Technology* unit standards

Subfield	Domain	Id
Electrical Engineering	Core Electrical	18997, 18998, 19000, 21766
	Electrical Installation and Maintenance	19001-19008, 19010-19013
	Electrical Machines	18999
	Electrical Standards and Statutes	19009, 19014
Electronics Technology	Core Electronics	16966, 16967

The ElectroTechnology Industry Training Organisation (ETITO) has completed the review of the unit standards listed above.

Date new versions published **June 2009**

Planned review date **December 2014**

Summary of review and consultation process

Meetings involving ETITO, industry representatives and other key stakeholders, including the Electrical Engineering Advisory Group were convened throughout 2008 to undertake the review of Electrical Engineering unit standards that comprise the National Certificate in Electrical Engineering (Level 5) [Ref: 0951].

The consultation groups were asked to consider the following:

- the currency of the unit standards and their suitability for existing and future qualifications
- the appropriateness of unit standards to their domain
- the accuracy and appropriateness of their content
- whether levels and credits reflected performance outcomes and training needs
- any gaps in skills and/or knowledge that could be captured by the development of new unit standards
- the assessability of the unit standards.

Main changes resulting from the review

- Elements and performance criteria were amended to improve clarity and consistency and bring the unit standards up to date.
- Purpose statements were amended to accommodate changes to the elements.
- Special notes were amended to update references and legislation.
- Range statements were amended to clarify evidence requirements.
- Unit standard 25634 replaced unit standard 19003.
- Unit standard 25638 and 25640 replaced unit standard 19014.
- Unit standard 25641 replaced unit standard 19007.
- Nine new standards were written, 25629-25633, 25635-25637, and 25639.
- Unit standards 19005, 16966, 16967 were designated expiring.

Unit standards categorised as category C or D expire at the end of December 2012.

Impact on existing provider accreditations

None.

Impact on Accreditation and Moderation Action Plan (AMAP)

AMAP 0003 has been updated to reflect the changes made to the standards.

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

The following ETITO qualifications are affected by the outcome of this review and will be updated to take account of the changes when they are next reviewed.

Qualification title	Standard in the qualification
National Certificate in Electrical Engineering (Level 5) [Ref: 0951]	19002, 19003

The following qualification is also affected by the outcome of this review. The standard setting body (SSB) has been advised that it requires revision.

Qualification title	Classification or standard in the qualification	SSB Name
National Certificate in Electricity Supply (Power Technician) (Level 5) [Ref: 1260]	16966, 16967	Electricity Supply Industry Training Organisation

Review Categories and changes to classification, title, level, and credits

All changes are in **bold**. The details of recommended alternative unit standards are in *Italics*.

Key to review category

A Dates changed, but no other changes are made - the new version of the standard carries the same Id and a new version number

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

C Major changes that necessitate the registration of a replacement standard with a new Id

D Standard will expire and not be replaced

Subfield Electrical Engineering
Domain Core Electrical

Id	Title	Level	Credit	Review Category
18997	Demonstrate advanced knowledge of capacitance, inductance, and magnetism in direct current circuits	5	4	B

Id	Title	Level	Credit	Review Category
18998	Demonstrate advanced knowledge of alternating current and three-phase theory	5	10	B
19000	Demonstrate advanced knowledge of electrical power transformers	5	7	B
21766	Demonstrate knowledge of theory for registration of electricians	4	3	B

Subfield Electrical Engineering
Domain Electrical Installation and Maintenance

Id	Title	Level	Credit	Review Category
19001	Demonstrate advanced knowledge of electrical circuit protection	5	3	B
19002	Demonstrate advanced knowledge of electrical switchgear and switchboards	5	4 **5**	B
19003	Demonstrate advanced knowledge of electrical installation practice	5	6	C
25634	**Demonstrate advanced knowledge of electrical installation practice and knowledge of data communication principles**	**5**	**10**	
19004	Demonstrate knowledge of standby power plant	5	4	B
19005	Demonstrate knowledge of electric welding principles and applications	5	3	D
19006	Design simple electric lighting installations	5	5	B
19007	Demonstrate knowledge of electric furnaces and space heaters	5	4	C
25641	**Demonstrate knowledge of electrical heating systems**	**5**	**4**	
19008	Prepare quotations for electrical work	5	5	B
19010	Manage scheduled electrical maintenance projects	5	15	B
19011	Manage electrical installation projects	5	15	B
19012	Develop commissioning programmes for electrical projects	5	10	B
19013	Manage commissioning of electrical installations	6	15	B
25631	**Demonstrate knowledge of and design documentation for the commissioning of significant electrical installations**	**5**	**5**	**New**
25632	**Demonstrate and apply advanced knowledge of the selection, use, and care of complex electrical measuring equipment**	**5**	**5**	**New**
25635	**Develop, implement, and review maintenance plans for electrical engineering systems**	**5**	**15**	**New**
25636	**Manage testing and measuring procedures within electrical engineering contexts**	**5**	**5**	**New**
25637	**Develop a plan for and manage an electrical engineering project**	**5**	**20**	**New**

Id	Title	Level	Credit	Review Category
25639	**Develop resource procurement options for a significant electrical project and make recommendations**	**5**	**5**	**New**

Subfield Electrical Engineering
Domain Electrical Machines

Id	Title	Level	Credit	Review Category
18999	Demonstrate advanced knowledge of electrical machines	5	10	B

Subfield Electrical Engineering
Domain Electrical Standards and Statutes

Id	Title	Level	Credit	Review Category
19009	Apply non-electrical legislation in the electrical industry	5	4	B
19014	Inspect and certify electrical installations	5	14	C
25638	**Demonstrate knowledge of inspection and certification of electrical work**	**5**	**8**	
25640	**Inspect and certify electrical work**	**5**	**6**	

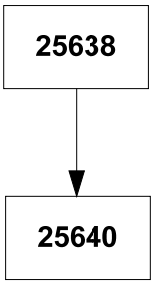
Subfield Electrical Engineering
Domain Electrotechnology

Id	Title	Level	Credit	Review Category
25629	**Demonstrate introductory knowledge of building management systems**	**4**	**5**	**New**
25630	**Demonstrate knowledge of and analyse energy efficiency of buildings and plant**	**4**	**5**	**New**
25633	**Demonstrate and apply knowledge of energy audits and emerging developments in energy efficiency**	**5**	**10**	**New**

Subfield Electronics Technology
Domain Core Electronics

Id	Title	Level	Credit	Review Category
16966	Describe and apply digital electronic concepts	4	12	D
22726	*Demonstrate and apply introductory knowledge of electronic engineering*	*4*	*15*	
16967	Describe and apply analogue electronic concepts	4	12	D
16968	*Demonstrate and apply intermediate knowledge of electronic engineering*	*5*	*15*	

Prerequisite Diagram



Level 5